Asia-Pacific
Economic Cooperation

2001 APEC Economic Outlook Symposium

28 – 29 June 2001

Hong Kong, China

APEC Economic Committee (EC)

June 2001

TABLE OF CONTENTS

SESSION II: THE ROLE OF FINANCIAL INTERMEDIARIES

SESSION III: RELATIONS BETWEEN FINANCIAL INSTITUTIONS AND ECONOMIC PERFORMANCE: REGIONAL EXPERIENCE

SESSION IV: REGIONAL ECONOMIC OUTLOOK

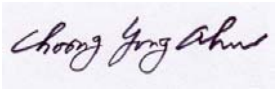
FOREWORD

The relationship between finance and growth has drawn immense attention in recent years among academicians and government officials, in particular after the Asian financial crisis. In view of this, the APEC Economic Committee led a thematic study on "Financial development and efficiency: relations with economic growth in APEC economies" as a part of the 2001 APEC Economic Outlook programme.

The 2001 APEC Economic Outlook Symposium was held in Hong Kong, China on 28–29 June 2001. The event was conducted under the auspices of the APEC Economic Committee and was hosted by the Hong Kong SAR Government. In all, 120 delegates from 18 of the APEC member economies participated. There were expert speakers from a number of institutions, including the Bank for International Settlements, the International Monetary Fund, US Federal Reserve Bank of San Francisco, the World Bank, Chinese Academy of Social Sciences, Japan's Research Institute of Economy, Trade and Industry, and Hong Kong Centre for Economic Research; government officials/advisers from Australia, Chile, Japan, New Zealand, and the United States; academicians from Auburn University, University of British Columbia, Korea University, Monash University, National University of Singapore, Simon Fraser University, University of Toronto, Yonsei University, Chinese University of Hong Kong, City University of Hong Kong, Lingnan University, and University of Hong Kong; and private sector experts from Merill Lynch and Standard Chartered Bank.

During the one and half day Symposium, there had been a wide-ranging discussion on the subject of finance and growth. The presentations at the Symposium covered both conceptual and empirical grounds, and were all very insightful. The Symposium examined the regional financial scene with in-depth discussion about financial sector revamping and reform for both stability and development. Meanwhile, the Symposium also canvassed the regional economic performance and outlook.

The present volume compiles the papers presented and the documents discussed at the Symposium. Through this publication, the Committee hopes to enable a wider scope of dissemination of the insightful ideas that were exchanged at the Symposium so that it can serve as a comprehensive foundation for future research and studies on matters related to the relationship between finance and growth, as well as to deepen the understanding of recent economic trends and developments in the region.



Choong Yong Ahn
Chair, APEC Economic Committee
Korea, November 2001

WELCOME MESSAGES

Mr Stephen Ip, Acting Financial Secretary,
Government of the Hong Kong SAR

Dr Caprio (Gerard), distinguished guests, ladies and gentlemen,

Welcome to Hong Kong, China. I'm glad that we managed to arrange a few rays of sunshine today specially for all of you after such heavy rain over the past few days. It has actually been the wettest June on record. For those of you who arrived yesterday, I hope the torrential downpours were not too much of an inconvenience. In Chinese culture, water is often associated with wealth and fortune. In the Cantonese dialect you often hear children asking their fathers: "Hey old bean, have you got any water?" which is another way of asking for some pocket money. The subsequent flow of funds, another form of 'finance for growth', depends on whether poor old dad has enough in his pockets or whether son or daughter has been good enough for the tap to be turned on.

I am delighted to be here tonight in the company of so many accomplished scholars, economists and financial experts from around the Asia-Pacific region. Hong Kong, China is honoured by your presence and pleased to be hosting this symposium and playing an active and meaningful role within the APEC community.

Tonight, I have been asked to give the welcoming remarks. I don't want to speak for too long because, like all of you, I am very much looking forward to Dr Caprio's keynote address later on. I don't want to serve up a main course before the proper main course is served.

I would like to take a few minutes to let you know about some of the things we have been doing in Hong Kong to further strengthen our position as a major financial centre for the region.

Underpinning everything we do in Hong Kong, China is a firm commitment to the rule of law, a level playing field for business, the free and unfettered flow of information and a clean and efficient administration. We call these the "four pillars" of Hong Kong, China.

Within this framework we have other elements which help to strengthen our economy, as well as our financial services sector. First-rate communications networks, world-class infrastructure, the free flow of goods and capital, low taxes and a simple tax system. We are most fortunate to have a well-educated, enterprising and entrepreneurial workforce and an open, tolerant and cosmopolitan community. We are blessed with the prime location, and advantages under the One Country, Two Systems concept, to capitalise on the enormous opportunities emerging in the Mainland market.

The Asian financial crisis has been analysed in great depth, and has come under the microscope again today I believe. One lesson Hong Kong, China learnt from the crisis was that we were a little too complacent when everything was going fine. When the financial crisis struck, structural weaknesses were exposed. But we have braved the challenges with bold reforms and measures to enhance our financial infrastructure. As a result, we have strengthened our linked exchange rate under the currency board system and made it more open and transparent. We have introduced a real-time settlement system and a US Dollar clearing system which makes Hong Kong, China the only market in the region where settlement can be done without exchange risk.

We also streamlined our financial market structure by merging and demutualizing the two stock exchanges and three clearing houses in early 2000. This has brought economies of scale, raised operational efficiency and enhanced competitiveness. Parallel efforts are being made to modernise our regulatory framework to bring it into line with international standards. We are now consolidating 10 existing ordinances into one composite piece of legislation, the Securities and

Futures Bill, to promote a fair and orderly market, better disclosure of interests, and enhanced market transparency.

We plan to develop an 'eFrastructure' for Hong Kong, China's financial system. This will enable local and global market participants to gain access to a full spectrum of financial products and services, interconnected by an open, robust, secure and high performance network. All transactions will be processed electronically and straight through.

Hong Kong is also poised to play an increasingly important role as a financial centre for the Mainland. There will be a huge demand for capital to fund enterprise reform and infrastructural developments in western and central China – new priority areas of growth and development for the Central Government.

Hong Kong entrepreneurs are already the largest investors in every Mainland province. By the end of last year, there were more than 190,000 Hong Kong-funded projects throughout the country. According to China's own statistics, the cumulative value of Hong Kong's direct investments in the Mainland reached US$171 billion at end-2000. The involvement of Hong Kong enterprises in the Mainland will deepen further after China's accession to the WTO.

Ladies and gentlemen, I have spoken too long. Once again, welcome to Hong Kong, China. I hope you all enjoy this two-day Symposium. Joining our local experts, we have guests from the Mainland of China, Japan, Singapore, Korea, Australia, New Zealand, Chile, Canada and the United States. I would like to thank you all for coming to Hong Kong, China, and for helping to make this Symposium a great success.

Thank you.

Miss AU King-chi, Acting Secretary for Financial Services,
Financial Services Bureau, Government of the Hong Kong SAR

Distinguished speakers, guests, ladies and gentlemen,

It gives me great pleasure this morning to open the 2001 APEC Economic Outlook Symposium. May I first of all extend to you my warmest welcome.

This is the first time Hong Kong, China is given the honour to co-sponsor this regional symposium with the APEC Economic Committee. Through exchanges in APEC, we seek to strengthen market infrastructure and human capacity in our economies and enterprises, and reaffirm our concerted efforts to ensure high standards of openness, transparency, and corporate governance in our financial markets. We believe this is the most effective strategy for our enterprises to gain reliable access to capital for innovation and creation of wealth. This, we also believe, is the key to sustainable growth and expanding employment, and the ultimate source of stability, security and prosperity for our peoples in the region.

In cognizance of this common interest amongst our APEC colleagues, Hong Kong, China, as the coordinator of this year's Economic Outlook Report for the APEC Economic Committee, has specifically made the study of financial development and economic growth in APEC the main theme for this year's Report.

We hope that through the pooling of expertise from the academia, international organisations and governments in this Symposium, we could achieve synergies and cross-fertilization of ideas. We believe we together can contribute positively to the common goal of APEC in knowledge building and experience sharing. While the experience of Hong Kong in financial development should render us a relevant case for this thematic study, your views will no doubt help shape this year's Economic Outlook Report. We also hope to learn from the Symposium for the betterment of our financial structure in the longer term.

Hong Kong has long been serving as a major trade, finance and business services centre for the Asia-Pacific region generally, and for China in particular. We are credited for our superb performance in the rule of law, absence of trade barriers, low tax rates, a free press, as well as freedom of exchange in the financial world. We endeavour to provide efficient services in the fields of energy, transportation and telecommunications at reasonably competitive prices.

Indeed, we have one of the world's most outward looking and non-discriminatory financial systems, buttressed by robust hard and soft infrastructure. There is a critical mass of financial institutions as well as professional talents from around the world, rendering a full range of support services.

We attach great importance to education and the training of our labour force. The traditionally liberal immigration policy has also allowed us to attract expertise from all round the world. These are not enough. Recently, we have introduced new measures to facilitate talented professionals from the Mainland of China to take up employment in Hong Kong in two specific areas, financial services and information technology.

Drawing on these attributes, the financial services sector has made substantial contribution to our economy. In the 1990s, the sector grew by an average annual rate of 15% in nominal terms, much faster than the average annual nominal GDP growth rate of 8.6%. The share of financial services in GDP rose from 7% to 12% over the same period. We are now the world's tenth largest banking centre, seventh largest foreign exchange market and third largest stock market in Asia. Over the last decade, we have developed ourselves into the premier capital formation centre for the Mainland of China. From 1993 to 1999, over HK$70 billion, or some 94% of the total amount of capital raised by H-share Chinese enterprises outside the Mainland, was raised through Hong Kong, China.

Experience tells us capital would flow naturally into a market which is fair, transparent and efficient, supported by a high level of corporate governance. Such a market would be the preferred base for corporations, and a safe haven for capital when the global economy undergoes volatility.

Bearing evidence to this, Hong Kong, China is a favoured location for multinational corporations to oversee their business operations in the region generally, and in China in particular. More than 3000 foreign corporations have established their regional home in Hong Kong, China. This represents a 50% increase over the past five years.

The UN World Investment Report put Hong Kong, China as the second largest recipient of foreign direct investment in Asia after China, as well as the largest source of foreign direct investment in the region in 1999. We expect further surge of foreign direct investment flows in and out of Hong Kong with the coming accession of China into the WTO.

The business world is ever changing; globalization and opening up of new markets around us provide new opportunities as well as new challenges. We are not complacent. We are particularly mindful of the need to attract more talents and liquidity to our markets, in order to maintain and strengthen our competitive edge. We are at the moment undergoing a series of reforms to our financial markets, in particular the securities market, with a view to bringing our market structure, clearing and settlement infrastructure and regulatory framework on par with international standards, in order to facilitate market development and protect market users.

Last but not least, I would like to express my appreciation to colleagues who have worked so hard to organise this event, and my heartfelt thanks to our distinguished speakers and guests for their participation. I am sure this Symposium will stimulate insightful exchanges on such important issues as finance, growth and our near-term prospects. I wish you all a very fruitful discussion.

Thank you.

OPENING ADDRESS

Dr. Kyung Tae Lee, Chair, APEC Economic Committee
President, Korea Institute for International Economic Policy (KIEP)

Madam Au King-chi, Mr Tony Latter, Distinguished Guests, Ladies and Gentlemen.

Good morning. Let me welcome all of you to this very meaningful conference. Also, I would like to express my deep appreciation for all of you for your very active participation in this seminar.

It is with great pleasure and honor to be here this morning to address such esteemed participants from the APEC economies and the leading scholars from around the world. It is my personal pleasure to see that Professor James Barth from Auburn University of the United States is coming here because he was my teacher and he was my principal supervisor for my dissertation at the graduate school in the United States. Also, I would like to welcome Dr Taniuchi who was my predecessor in Economic Committee of APEC and other APEC Economic Committee members from the other member economies. Before I start, I would like to take this opportunity to give special thanks to Hong Kong, China, for her warm hospitality and excellent leadership in preparing this important gathering. I would also like to express my gratitude to the Economic Outlook Task Force Team, led by Ms Elley Mao, the Vice Chair of the APEC Economic Committee, for their hard work in preparing "2001 APEC Economic Outlook".

In the wake of the financial crisis of 1997 in East Asia, the need for closer cooperation among APEC member economies has become crucial to ensure long-term economic development and stability in our region. Although I speak of development and stability in one sentence, as we are all aware and are not able to forget is the invaluable lessons from the crisis. First of all, we witnessed that the threat of sudden and unpredictable reversals of capital flow to developing economies could and did cause instability in the international financial system causing long-term damages. Second, we all learned that crisis was contagious and, therefore, required an internationally coordinated response. Third, we recognized that the recovery is not yet complete and still remains fragile.

These facts emphasize that APEC members should continue to take many painful, but necessary policy adjustments to have a sustainable and equitable growth. There were many demands by the international community for many APEC economies to undertake. There were demands for stronger surveillance of the domestic financial market. Reforms in the financial system had to be taken: enhancement of corporate bankruptcy law, corporate governance structure, and revision of corporate accounting and financial reporting system had to be part of the major reform. There are continuous discussions at the international level regarding changing of the exchange rate regime, controlling of the hedge funds, and reinforcing the functions of international lenders as a last resort. Enhancing transparency and following global standards are also major targets to be accomplished.

Although there seems to be a consensus among members that crisis was a systemic one and the remaining structural weakness increased the vulnerability of the economy, there are arguments regarding what may be the best solution for the long-term sustained economic growth in our region.

We have just heard from Miss Au King Chi about Hong Kong, China's financial liberalisation policy and we all know that how the financial liberalisation policies have contributed to Hong Kong, China's dramatic economic growth in the past. But at the same time, we know that some East Asian economies, notably Japan and Korea, adopted repressive financial policy, including interest rate regulation and credit rationing. In some respects, this facilitated rapid development of the targeted, strategic industrial sectors. The repressive financial policy was legitimized on the

grounds that the severe structural imbalances in the financial market had rendered liberal financial policy irrelevant at the early stage of development.

But the financial repression has incurred quite sizable costs. For example, before the crisis, we saw that in East Asia, the financial sector was extremely weak with their real sector developing at rapid rate. East Asia, especially the economies known as the Newly Industrialized Economies (NIEs), was considered to possess the miracle development model. In a very short time period, they were able to develop tremendous economic growth. None of the traditional economic models fit the NIEs' case. However, because the model that was used for NIEs' growth in East Asia worked so well for same decades, many other developing economies tried to look for ways to fit that model to their particular economy. But, as we all know, that particular model came with flaws that we are still in the process of solving and correcting.

The very important issue is which leads which? Does the financial development lead the economic growth or the other way around? This is very challenging question particularly for developing economies, since these economies suffer from the chronic excess demand for capital over saving, backward financial institutions, all of which necessitate economic growth in the first place in order to have advanced financial market.

At the same time, some argue that when financial liberalization was pursued in the similar manner as trade liberalization in the early stage of development, it brought on negative effects. Theoretical or empirical studies on developing economies have also suggested that in a domestic financial market that is unstable or that has financial constraints in their early stages, the negative effect of financial liberalization can be greater than the positive effect. What matters in this case is how to seek ways to maximize the benefit of financial liberalization.

The international financial system is undergoing a reform process on a continuing basis, and APEC economies are reforming their own domestic financial market and financial system to meet the challenges they face. Still, the result of such endeavors leaves much to be desired. In this context, for a sustained economic growth and stability, it is vital to recognize the importance of the balanced growth between the financial sector and the real sector.

The Economic Outlook Symposium is a great opportunity for the APEC member economies, scholars, researchers, and government officials to come together once again to address the issues that affect APEC as well as the global economic structure. "Financial Development and Economic Growth" was chosen as the theme for this year's Symposium. It is important to solve the problems brought on by the structural weakness in financial sectors, but at the same time talk about long-term solutions.

I think this is a great opportunity to share experience for reforming the financial sectors in APEC economies. At the same time, it is also a great opportunity to explore ways on how we can reform our financial system to ensure APEC economies to have very long-term economic growth. I just talked briefly with my predecessor, Dr Taniuchi, before the conference. He said that in Japan, the reform is now in the process of implementation through the top-down basis, instead of the bottom-up basis. So, we can look forward to seeing Japan to have much more active and brave measures in reforming the economies. So, I am looking forward to hearing Japan's experience.

I hope, this symposium seeks to draw wisdom from the experiences and research of APEC member economies for many creative and practical policy recommendations for the financial market development and economic growth.

Thank you for your kind attention.

BANKING AND DEVELOPMENT

Tony Latter, Deputy Chief Executive
Hong Kong Monetary Authority

I should like this morning to address three particular aspects of the broad topic of banking and development. One is the contribution of banking — or the financial sector more generally — to the economy in terms of activity. The second is the role of banks as providers of cross-border finance for development. The third is the implications of the internet revolution for the development of banking itself.

Contribution of banking to the economy

Our very distant ancestors survived without money, let alone banks. With the passage of centuries and the growing complexity of barter, physical money emerged as a useful unit of account, a medium of exchange and a store of value. Still later, banks emerged as intermediators between, on the one hand, those with holdings of money surplus to immediate need and attracted by the prospect of earning interest, and, on the other, those willing to pay interest in order to be able to accelerate their spending. With the further passage of time various other means of intermediation, such as marketable securities, also developed.

A key point here is that banks only emerged because of the evident utility in the service they provided. Throughout the world we can now see examples of how banks and other financial institutions have facilitated the funding of the development of the rest of the economy, and how at the same time they have enabled savers to obtain returns on their savings and to allocate desired expenditure efficiently between the present and the future. Of course, there have been shortcomings, mistakes and disasters along the way, where market failures have impaired efficiency or where banks have collapsed as a result of poor judgement or of circumstances beyond their reasonable anticipation or control; but such experiences are found in all areas of economic activity.

Despite, however, the evident benefit from having an active and efficient financial sector, there have remained people at different times in history who have been sceptical of the intrinsic worth of banking as an economic activity contributing to aggregate welfare. This attitude has often reflected a presumption that activity only has merit if it delivers tangible output – food, clothing, cars, clearly consumable services such as television programmes, and so on. But this belief contradicts the evidence of the contribution which efficient finance makes to the economy, and the necessary role which it plays. Even the strictest communist regimes of the twentieth century found it impossible to dispense entirely with banks, even if, as a result of fantastic accounting and rotten economic policies in general, the banks mostly ended up bankrupt and depositors penniless.

The essential raison d'être of banking is that an economically advancing society needs effective intermediation between savers and borrowers, and mechanisms for making payments efficiently. As already noted, the initial basic intermediary function of providing deposits and loans expanded subsequently into the organisation of alternative channels of intermediation such as bonds and equities (these activities may be conducted in some jurisdictions outside the narrowly defined banking sector, but the distinction is not material in the present context). Although it is human nature for savers to complain that the returns are inadequate, and borrowers that costs are extortionate, in the market-oriented economies competition in financial intermediation has mostly been quite intense, and most of us would probably agree that this has worked to the increasing benefit of customers on both sides of the balance sheet.

Meanwhile, the provision of payment services has developed markedly at both the wholesale and retail levels. Banks are at the centre of this activity, typically supported by the central bank as

ultimate provider of liquidity. In fact, whereas many other types of institution may nowadays be involved in lending money or providing avenues for savings, banks themselves remain firmly at the core of the payments system. A sound and efficient payments system is acknowledged to be a prerequisite if an economy is to realise fully its potential.

Banking facilities have become so much an accepted and necessary part of life that access to them is sometimes regarded as an absolute and unconditional right, in the same way as is argued for universal education or health services. This has been a topic of debate in Hong Kong recently, in the context of likely changes to savings rates and to fees and charges in the light of the final deregulation of interest rates next week. As a general rule, however, businesses such as banks should be allowed to determine their own strategies in the light of market forces, although the authorities may claim a legitimate interest in ensuring that those market forces do indeed function competitively. One bank may decide that the provision and encouragement of the widest possible access to its services fits well into its business plan; another may decide otherwise. In the rather unlikely event that insufficient basic banking services are available to some section of society, the case may be argued for official intervention. But one must distinguish between different aspects of the situation – commercial, competitive and social. If, other things being equal, banks are to be pressed into assisting with the delivery of social policies, then the precise terms of that obligation, including responsibility for funding it, should be made clear – whether by law or in suitable agreements or codes.

In Hong Kong, banking, in a rather narrow definition, is estimated to contribute about 7.5% to gross domestic product and about 3.5% to employment. Despite the withdrawal of a number of individual banks, particularly Japanese, from Hong Kong, China in the late 1990s, the share of banking in GDP appears to have remained roughly stable for a number of years now. However, the share in employment has declined somewhat of late – as has also been evident in, for example, the US and UK over a slightly longer period. This implies that there have been significant productivity gains, including no doubt those arising from the process of consolidation, which has been evident among international banks with presences in Hong Kong, China for some time and has now been spreading to the local banks.

Permit me one further historical reflection, related partly to my earlier comment about attitudes towards banking. When I first studied economics, there was a respected body of literature which argued that productivity growth in manufacturing would always outstrip that in other sectors because manufacturing was more amenable to the application of new technologies and economies of scale. In services, output was regarded as too firmly dependent on the specific input of labour for there to be much scope for productivity gains. This reasoning even led some governments to adopt policies with a bias to promote manufacturing in the belief that this would be the route to more rapid overall growth, although this seemed to ignore the demand side – that the public would become saturated with goods and increasingly desire to consume services. I don't know whether any of the protagonists of that school of thought are still alive today. If they are, and even if they could still identify some services where productivity has not advanced very much (hairdressers and taxis are among the usually quoted examples), they would be astonished at the productivity growth which has been apparent in banking and certain other service sectors around the world in recent years, as a result of the forces of globalised competition and the opportunities presented by technological advances.

It is clear, therefore, that banking and other financial services not only provide essential support to development but also make their own contribution to national income. I am often asked questions such as what is the long-term growth prospect for this sector or how will the mix of activities within the sector evolve. The simple and honest answer is that I don't know. Plainly, there are limits to the likely domestic demand for these services. But that demand may be supplemented if overseas customers are attracted to use our local services, or, of course, diminished if local customers choose to satisfy some of their needs from overseas. At the end of the day the pattern will depend on efficiency and the laws of comparative advantage. From the official side, we in

Hong Kong are anxious to provide an infrastructure and business environment on a level playing field within which such activities can flourish, but we are not capable of determining the outcome.

The role of cross-border bank finance in economic development

In the absence of an adequately developed financial sector, sound enough to enjoy the trust of the local community and offering sufficiently attractive products, it may prove difficult to channel domestic savings into domestic investment. This is a problem which confronts many less developed and emerging economies. The result is often that, despite a quite strong disposition of households to save, the preference is to exploit all means, legal or otherwise, to hold those savings offshore. In consequence, domestic enterprises and government may become more dependent than otherwise on attracting funds from abroad to fulfil their funding needs. This may have the salutary advantage of exposing the borrowers to the discipline of the international market place, but it may also saddle them with higher costs and currency risk. Moreover, historically, the lending institutions have not always possessed sufficient local knowledge to enable them to make sound credit judgements.

This role of banks as providers of cross-border funding for development is the second topic on my list today.

The subject is perhaps topical for not the happiest of reasons. For the past couple of years the banks, along with international bodies and fast-food chains, have become the main target for anti-globalisation and anti-capitalist protests. I leave others to muse on the motivation and justification for such actions, but I do note that bank finance for developing countries, and more particularly the question of debt forgiveness, are prominent items on the protest agenda. I also note that this is a subject which has for several years been keenly debated, more soberly, by governments, international organisations such as the IMF and World Bank, and banks themselves.

It is a complex issue. One must never lose sight of the fact that bank lending involves a contract between the bank and the borrower, and the parties should be expected to honour that contract. If it is treated otherwise, then the basis for all future relationships crumbles. But in practice the situation is hugely complicated if there is a syndicate of lenders, giving rise to problems of co-ordination and potential free riding, or if the World Bank or IMF are involved, which typically expect to be at the front of the queue for repayments. At the end of the day, commercial banks may decide that a degree of debt forgiveness (possibly disguised as a generous rescheduling) is advisable as the best means of minimising overall losses and, perhaps, preserving longer-term business opportunities with the country or customer in question. But this should be a commercial decision. If governments wish, for political or humanitarian reasons, to ease further the contractual debt burden of an indebted country, this should be carried forward as a conscious and transparent policy decision, which would surely involve usage of taxpayers' money unless it was reliant on coercion of banks.

In practice, there are many developing countries which are effectively cut off from commercial bank finance because of a track record of default, political instability, economic mismanagement, corruption and so on. Banks generally need certain minimum assurances, relating to the political climate, the legal system, transparency, corporate governance, etc, over and above the narrower assessment of the servicing capacity of the borrower. Fortunately, most economies in the APEC fold can be classified as open for bank finance. But there are many other countries in the world which are passed over by the international banking community because of the lack of the basic essential attributes, or because they are simply too poor to afford credit on commercial terms, in which case they become dependent on concessional finance from the international institutions as the only reasonably accessible source of external funding.

Banks have to abide by prudent standards. Regulators, depositors and shareholders all expect as much. Most banks would leap at the chance to lend more to assist development, if such lending

was assessed to be commercially viable. But as a general rule banks should not be prevailed upon against their better judgement to be providers of economic aid or social services, whether domestically or internationally, unless there is the political consensus that taxpayers are willing to fund them in that role.

The internet

Turning now to the internet, I believe that this has some relevance to the overall theme of this symposium, not so much because of questions about the availability of banking services to those who need them, but rather because of possible implications for the location and structure of banking activity.

Let me begin by observing that, ever since the telecommunications and IT revolutions began substantially to impact on banking – and that, depending on how exactly one defines the terms, was at least two or three decades ago – some commentators have been forecasting the imminent demise of financial centres as such. The argument is that all the humdrum work will be carried out in computer centres and call centres in low wage countries, while the high value adding executives can locate where they wish – depending on their preferences for recreation, culture, climate and so on – and tele-conference one another when necessary. The former – the migration of routine operations to low-cost places – has happened to a degree, but the latter has not. Even if colleagues within a bank can sometimes substitute a conference call for a meeting, their customers have been less eager. Although for basic banking services little personal contact may be necessary, deals in such fields as corporate finance and investment banking appear to require interaction between a number of parties face-to-face. Indeed, in recent years the world's major financial centres may, if anything, have become more rather than less dominant as a result of the demonstrable benefits of co-location and critical mass particularly in the context of the higher value-added activities.

How does the internet fit into this picture. The new dimension which the internet brings is to revolutionise the access of customers to banks – and banks to their customers. Already we know that huge numbers of customers have moved over to using the internet to carry out their basic banking business. This may in turn have enabled banks to realise cost savings, although it is as yet not easy to find hard evidence to this effect.

The implications for the structure of banking are unclear. One may envisage two extreme outcomes. One would be where banks, both established ones and new ones created as internet-only providers, compete fiercely in all areas of banking where human contact is not required. Consumers flit around from one to another in response to the best deals, splitting their banking relationships across a number of banks if that appears cost-effective. The prices of these services are driven down to "commodity" levels. None of the banks makes much of a profit from it. Some of the "old" ones suffer loss of their bread-and-butter business. The outcome in the longer term is unclear. It is conceivable that banks cease to exist as integrated multi-product businesses. They become instead product specialists in a rather fragmented landscape, finding it tough to earn more than commodity profits even in areas where, in the case of the longer established banks, they used to enjoy niche advantages.

The other scenario emanates from the same starting point of intense competition. But in this case the new entrants do not have the resources to continue with their generous initial terms for long enough to secure a firm business foundation. The established banks reluctantly but necessarily take on the newcomers aggressively, utilising their financial strength and making extra efforts to build robust relationships across a broad range of services and to exploit the underlying inertia that customers may exhibit. In other words, they use the internet to consolidate their relationships and to see off the competition. Customers are persuaded that it's not worth sacrificing the relationship for the sake of a few basis points. Some customers may be lost, but some of these may anyway be ones which the banks can afford to say goodbye to. As a variant to this model, the

banks may adopt different brands for their internet services, exploiting any opportunities available from product differentiation and market segmentation, but retaining the capacity from their standpoint to manage multiple relationships with any individual customer as one.

One can envisage many other outcomes besides these examples. I know of no sure way of predicting what will happen, but my personal view is that the internet is likely to emerge more as a channel to build on existing relationships and to increase the efficiency of basic services than as something which changes the landscape of the banking industry. But perhaps I am guilty of thinking that everyone else possesses the same inertia as I do when it comes to changing one's habits.

Concluding remarks

I have skimmed over a few issues which can rather loosely be said to fall under the heading of banking and development. There are many experts attending this symposium who will, I am sure, offer much deeper and more provocative insights into the economic outlook in general, and the relationship between financial development and growth in particular. I wish you all a fruitful and enjoyable couple of days.

FINANCE FOR GROWTH: POLICY CHOICES IN A VOLATILE WORLD*

Dr Gerard Caprio, Director,
Financial Strategy and Policy Group, the World Bank

I would like to thank the organisers personally, for inviting me here to speak. It is a great honour before this very distinguished audience. You can relax and be assured that I know that the most important characteristic of a good dinner talk is exactly the same for a good sermon. A minister once told me, it is important to have a good beginning, a good ending and as little in between as possible. I will try to stick to that, although when one is talking about a book that one has just produced it is quite difficult.

In the newly published World Bank Policy Research Report, Finance for Growth – Policy choices in a volatile world, we try to lay out what we think is the role for government. These include what government needs to do in the financial sector, what it needs to do more of or needs to do better, and especially what it needs to do less of to give some balance. Besides, there are issues such as state ownership of banks or like keeping out foreign banks.

Then, we turn to how technology, among other things, is leading to a world of finance without frontiers, and that is really affecting what governments can do and what policy choices are open to them. We focus on this because we now have great evidence that finance matters significantly for growth and for poverty alleviation. I am not going to go into all of those effects since you have heard a lot about financing growth and the causal relationship this morning and this afternoon.

I would like to talk briefly about what is new in this report and what is different about it. You have seen loads of reports from different organizations. Perhaps I could best contrast it with what might we have written ten years ago. The great difference between previous reports and this one is this is fundamentally based on empirical evidence. If you have a copy, perhaps you will find the most important part is the CD ROM at the back of the volume which contains the databases that this report draws on. It is not polemic; it is not theory; it is based on empirical evidence, overwhelmingly cross-country databases that are on our web-site as well.

Ten years ago you might have found a few people talking about the relationship between finance and growth but there was still a very big debate about which caused which. Indeed, the empirical evidence was largely on the basis of cross-country samples of about 30 economies or so and the evidence was quite weak. Now, we have much stronger information, as you all know from today's sessions.

You would have heard a very few people talking about the role of legal systems in financial sector development but it would have been almost a religion. They would have had no empirical evidence whatsoever to base that on a decade ago. And now, there is very rich evidence on the importance of legal systems and information.

You might have found even fewer people talking about the importance of private sector monitoring in the financial sector for both development and stability. Again, it would have been based certainly on no cross-country evidence. Within that, or if you read World Bank discussion papers, you would have found an interesting discussion of the pros and cons of deposit insurance. That was largely theoretical. There was no empirical data on a cross-country basis and the paper came to no essential conclusion.

You would have found some discussion about the pros and cons of state ownership ten years ago, again without any conclusion. As economies were going through transition process in the early 1990s at the start, a number of us tried to talk to countries about the problems with state ownership. The typical counter example was Credit Lyonnais that had subsequently gone under

quite spectacularly. But again, there was no significant empirical evidence, nor was there much evidence on the role of foreign banks. It was largely said that their benefit was to bring in new technology and new management. But what impact did they have on the financial system or development? The answer was, we did not know. We did not know much about what technology was doing in finance.

I think it is also important to say what this report does not say or is not about. Since we talk about the role of the market a lot, it may be easy for people who skim through this quickly to get the impression that we are suggesting leaving finance to the market. In fact, we argue that it is important for governments to learn to work with market forces, not to try to replace markets as they did in the past, or to try to ignore markets as some governments found to their expense when they did so.

Although we point out problems with state ownership, we in no way suggest that economies should try to privatise their banks all at once. Certainly, some economies like Mexico that underwent rapid privatisation learned about the problems of doing it that rapidly.

While we acknowledge the benefits of admitting foreign banks, we also do not suggest open up to all foreign financial firms at once and just leave the market to them. Similarly, we do not try to tell economies that they should open up to capital flows without a robust regulatory environment.

Government needs to build better foundations of finance, i.e. the legal and information infrastructure. When many governments reformed financial markets, they did what was cheap, easy and quick to do, such as deregulating interest rates without building the legal infrastructure, the information systems that sound finance needs. This was why the reform led to crisis. It is like a building built on sand topples over. It almost had to happen.

Governments need to build a solid infrastructure rather than aiming for a particular financial structure. Based on database of 110 economies, a fairly extensive World Bank project that Ross Levine and others worked on showed fairly conclusively that no one particular financial structure matters more than another. What matters is the supply of financial services, not the names of the intermediaries or the types of intermediaries who provide them. Governments that try to improve the information infrastructure and technology can lower intermediation costs. There is a particular issue about affecting privacy by making too much information available. For example, in Argentina, if you have a National Identity Number, which all citizens over the age of 21 have, you can go on line to the Argentine Central Bank and get basically balance sheet and income statement data for any firm or individual who has borrowed more than US$50 equivalent. That would actually be illegal in the United States to have that type of disclosure.

Research that we review, however, shows that making available negative information such as people go into bankruptcy is just as important as such positive information, as the repayment history and ability to pay, in enabling prudent supply of new credit. This is especially relevant for individuals and for small and medium scale enterprises.

In terms of what governments need to do better, instead of laying out specific standards which are very popular in the international fora today, we would like to suggest to authorities that on the basis of empirical evidence, the rules should be focussed on harnessing market forces and encouraging, and especially not discouraging, better market monitoring of banks. I will come back to that because it relates to some cautions about deposit insurance that were discussed briefly today.

There is also some evidence showing that incentives matter, not just for some people but for everybody. This includes supervisors and regulators. Now, in many emerging markets, supervisors are paid distinctly low salaries relative to what private banks get. When I was at the Federal Reserve Board I used to keep track of this. For people who leave the Fed to go to markets,

it is a typical experience that their salary will go up by two to two-and-a-half times. It is argued that the Fed has pretty good supervision, so you might conclude that if the ratio of salary from private banks to that from the Fed is 2 or 2½ to one with other perquisites to working for government, there could be decent supervision. But I have been to countries where the salary ratio was 10-100 to one. At that scale of discrepancy it is extremely difficult to have good supervision. Worse still supervisors' job is not very transparent, in part because there is a long lag between supervisory actions and outcomes in the banking sector.

Another profession that has similar characteristics is the police. It is recognised that it is important to give them a good salary at present, because otherwise they might engage in distasteful activity. Also, it is important to give them a very large bonus in the future, in the form of an exceptionally generous pension, and which will be taken away if wrongdoing is later discovered. So it is not just the level of compensation that matters but it's the structure.

Actually there was an interesting episode in US history between the 1820s–1850s in New England. There was a system called the Suffolk Banking System where private banks realised that they had an exposure to one another and they hired a private supervisor. That private supervisor got paid a decent salary but his bonus in today's dollars would be about a million dollars a year. That bonus was deferred and importantly, losses were deducted from the bonus. Over that 25-year period or so, losses were only a couple of thousand dollars. What was especially interesting was when some bankers tried to embezzle funds, the supervisor put together a posse, went after them, got them, and threw them in jail, reflecting strong incentives for supervisors.

At the other extreme, if supervisors were being paid at an incredibly low rate relative to the market with bonus at retirement, it is going to be hard to get good supervision. So my recommendation is that one has to significantly increase supervisors' pay and improve the pay structure to get better performance.

I also note that there is a problem with the ability to get arm's length supervision between supervisors and supervisees. In one country in the region that I visited before the crisis broke out in 1997, I had an appointment to discuss risk-management with a certain bank. When I went to the appointment location, it turned out it was not a bank, but a land-management company. I went in to find out whether I was in the wrong place or not. It turned out I was in the right location. The person that I met with introduced himself and said, "Well, until last month, I was the head of my family's bank risk-management but now I had taken over the land-management company." That was really interesting. I understand that they have limit on family ownership of 5%. Then he proceeded to give me a nice education on how to get around those family limits. Later on in the same trip, I met the head of supervision whom in fact was his cousin. It is going to be difficult, especially if you don't pay that cousin really well, to get arm's length supervision.

Besides trying to improve supervisors' compensation, it is also important to focus more on owners and markets as monitors of banks. Jim Barth mentioned some of the empirical evidence for market monitoring and I won't go further in this direction. Yet, it is useful to focus on what might limit market monitoring and deposit insurance is one of them. You could have, and indeed we did have today, discussion of this issue. There are theoretical reasons supporting deposit insurance, such as the big story by Diamond, but there are also well known moral hazards associated with having deposit insurance.

It is the epitome of an empirical issue. Based on data available to us, we found that in economies with explicit deposit insurance and weak institutional settings, such as weak regulation, weak rule of law, weak enforcement, etc, the odds of a crisis happening are actually significantly higher, as there is less monitoring by markets, and less financial sector development.

On the basis of not one but two different databases, we found that in economies with explicit deposit insurance, the cost of funds for banks did not go up very much at all when banks' loan

portfolios grew rapidly. Instead in cases where there was no deposit insurance, their cost of funds rose substantially. It is certainly that there may be implicit deposit insurance in the case where explicit deposit insurance is absent, and this may give rise to significant damage under some circumstances. Yet, the data speaks loudly and clearly: with implicit deposit insurance, somebody is left guessing, and that guessing is actually good if you have got a weak institutional environment, poor regulation and weak market monitoring, you are not going to have anyone overseeing the banks.

In countries that are institutionally quite advanced, deposit insurance may not have much significant effect. Certainly, in our empirical work, no effect was noticeable because they are starting off with good regulatory supervision, and better developed market monitoring. Hence, even though deposit insurance may weaken monitoring, it is not statistically significant.

It was interesting that financial sector development itself was actually hurt by deposit insurance in weak institutional settings. For instance, suppose you are a wealthy resident of an economy and so you are sophisticated enough to know how bad the regulation and supervision is in your economy; and suppose your government puts on explicit deposit insurance that is fairly generous, as a taxpayer, you had better reach for your wallet. That is what we think is going on in those economies with explicit deposit insurance. Wealthy taxpayers get their resources out of the economy, if they haven't done it beforehand.

This research also showed that for countries that wished to adopt deposit insurance, it is important to focus on transparency, accountability and credibility. To my surprise, the ceilings on the amounts insured actually matter. Lower ceilings turn out to be empirically much better than higher ceilings. It certainly seems important to have the private sector involved in the deposit insurance funds through management, and perhaps even through mutual liability as they do in Germany.

Perhaps the most controversial of all our findings was the conclusion that it was a bad idea to pile up a fund to fund deposit insurance if you are going to have it in advance. Again, this was driven by economies with weak institutional settings. The conventional wisdom is derived from the US where it is argued that the absence or the insufficiency of a large deposit insurance fund slowed down the government's ability to resolve failing savings and loans institutions. This conclusion, however, takes for granted the whole institutional setting that comes with the United States which especially features a fairly rich economy. It would also be a little bit difficult for officials, in economies like the United States, to literally steal the funds that are in the FDIC (Federal Deposit Insurance Corporation). But there are some economies, especially those at the very low income scale, where the checks and balances are not sufficiently developed and funding can actually lead to such occurrences.

Turning to the areas where governments need to do less of, is the role of state ownership. And again, ten years ago we could have listed the pros and cons of state ownership. The well-known arguments by Gerschenkron and others noted that the state was going to have a comparative advantage by occupying the high grounds in allocating credit. They argued that if you leave banking to the private sector, it will concentrate credit in the hands of the few, with a notion that private sector bankers are going to be more disposed to gambling. So there will be a greater moral hazard problem with private ownership.

On the other hand, there were certainly theoretical arguments on the opposite side. The study that Jim mention that Ross and he and I did, and a completely independent study using very different data by La Porta, Rfael, López-de-Silanes and Zamarripa at Harvard, both came to exactly the same conclusion, namely that greater state-ownership in the banking sector led to less financial sector development, lower growth and lower productivity. Very interestingly, it led to higher interest rate spreads, less private sector credit and less non-bank development. So, the basic message is that there is less competition in the financial sector when you have got significant state

ownership in banking.

Perhaps most surprisingly to some was that in contrast to the theoretical argument, greater state ownership actually led to greater concentration of credit in the hands of a few rather than the reverse. Actually, it may not be that surprising if you think about to whom state banks would lend. The usual answer would be the large state enterprises. That helps explain some of the exceptions to this rule. For example, Germany has the highest state ownership in the industrial world but they don't have much state ownership in any other sectors virtually. In such case, state bankers were able to avoid this temptation.

Lastly, we found, as did La Porta, that there was some tendency for greater state ownership to lead to more crises, but most significantly it leads to less private sector monitoring. No one is going to invest in monitoring banks if the banks are state owned. That is a problem because it is hard to believe that governments themselves are going to be good supervisors as well as good owners. So if the government is not supervising banks and the private sector is not monitoring state banks, who is monitoring state banks. The answer from the data is pretty clear: no one.

This suggests that governments with significant state ownership might want to privatise. However, we do note some of the problems and argue that it is important to prepare the road for privatisation, particularly prepare the regulatory framework, before plunging headlong into it. Ways to do this might be, on this transition process, to start enforcing regulations for all banks. That will reveal some of the weaknesses in the state banks and may actually help build the political consensus for it. But foremost, one wants to improve the regulatory and information environment and avoid the extremes of rapid privatisation, but also the extremes of excessive delays.

We cite a case of the Czech Republic in the report, where although they rushed in to privatising the non-financial sector, the banks were basically left in state hands. There was an interesting debate in the Czech Republic about what the Czechs called 'tunnelling', namely that private sector owners basically tunnelled or stole the resources of the firms and just left an empty shell. That could not have been the whole story, because in some of these enterprises where the resources were tunnelled out, the owners started injecting more equity. Why would they do that? The answer seemed to be that equity was a way to go to a state owned bank and get more loans. In fact they were basically looting the state banks in this fashion. One can argue that the same could have happened through private banks but one could have hoped that there could have been a little bit more attention paid to how money was being used.

Some governments do not like to have state ownership but it is forced on them in times of crisis. What we try to focus on is that if you believe this argument or the data that governments are generally not very good at owning banks, then why should you believe that they are going to be good temporary guardians of banks. So we think authorities should focus on letting the markets really pick the winners and losers. The government's job, when it gets ownership foisted on it, its first order of business should be developing a strategy to get out of the sector as quickly as possible. Instead of using the government to pick which banks survive and which fail, we like the model where governments might make funding available, almost on a formulae approach. That formula should only make funds available where matching private sector dollars are available, where rules are adopted to restrict the private sector's ability to take out all that government funding, especially restricting dividends, restricting compensation schedules for private bankers. Basically, it is to make sure that the government gets paid back first and gets out.

Lastly, the government should adhere to exceptionally stiff transparency requirements. By injecting government resources, the government is putting taxpayers' funds into these institutions. So, you want to make sure that these are being used well. This was not just out of thin-air. These principles were actually the US model, but they were the US model during the 1930s, during the reconstruction of finance corporation days where funding largely was made available to banks on

an automatic basis but given criteria such as these.

It is popular for governments to want to imitate the Swedish model during times of crisis recently. The main part of the Swedish model that was followed here was extraordinarily stiff transparency requirements. Indeed, the Swedish minority political parties were even represented on the restructuring corporation, besides the behaviour that the bankers had to adhere to. But the Swedish situation was very different from many emerging markets because the troubled loans were largely real estate loans. It was far easier to restructure than when you have major corporate enterprises in your economies that have to be restructured.

Lastly, in the world of finance without frontiers, how is this going to affect what governments can do? We argue that economies are now developing a choice; they can elect what financial services they want to buy from abroad and which ones they want to build at home. The evidence that we review shows that what matters is access to financial service, not who provides them. It doesn't matter whether they are foreign firms or domestic firms.

Most emerging markets are far too small to afford a closed financial system. As I like to point out, there are 60 economies in the world with about 250 million people whose entire financial systems are with assets less than that of the World Bank IMF Credit Union. There are 120 economies with close to a billion people whose entire financial systems are with assets less than ten billion dollars each. Ten billion dollars won't buy you a modest sized bank in many industrial economies. If the financial sector is that small and has its risks so concentrated locally, it will be prohibitively costly to try to regulate that financial sector and make it robust to external shocks. You have got a number of economies that specialize in a narrow range of commodities whose prices move together. As a banker, if you are locked up in that economy, you can run but you cannot hide from those shocks.

So we think foreign banks are important. The evidence we review shows that although there are concerns that foreign banks may have negative effects, the empirical evidence does not show it. Indeed, you can easily make an argument from the experience of Latin America in recent weeks, that foreign banks will protect domestic taxpayers. Just several weeks ago there were headlines in Spanish newspapers about the plummeting share prices of Spanish banks due to their Latin American exposures. If I were Latin American taxpayers, I would cheer at that announcement because at last it would not be the Latin American taxpayers who were paying for the losses, it was the Spanish shareholders. Foreign ownership is helping to spread those disturbances over a larger group.

So let me conclude by noting that in some sense this report is arguing for a return to basics. Governments need to help improve the information environment and contract enforcement, to work with markets and harness market forces for all, including the supervisors, and to open up to foreign financial services while they still have a choice.

In a sense the analogy that comes to mind is in respect of airline services. Residents in all countries need access to high quality airline services but they do not necessarily need a government run airline. The government's role is to make sure that the runway is smooth so there can be very good take-off and landings without negative episodes. That is very similar to the government's role in the financial sector. It is to focus on the infrastructure and to focus on the incentives of the actors in the sector.

As I learned a couple of weeks ago when I lost a very precious bag that took quite a while to be returned to me, I was not exactly happy when I filed my baggage claim and the clerk's response was: "Oh, that happens all the time". I had the feeling that they were not going to put too much effort into finding my bag. I would have given anything for the ability to reward those baggage-handlers with very good and clear carrots and sticks for proper behaviour. I think that is the government's role in the banking sector.

I hope in this review I have at least done a little bit better than a famous story argues is the case with the average economist - this is a very old story: One day a couple of gentlemen went up into a balloon and very quickly a storm came up. Then, they were blown among the clouds and they were lost. They were being blown around for hours. Finally, in the distance they saw a little hole in the clouds. Through a combination of luck and skill they lowered themselves down and they saw they were in the middle of a vast ocean but in the distance they saw a tiny island. So again, a little bit of luck, a little bit of skill, they managed to get themselves over the island and lower themselves down. There was just one person on this little island and they yelled down to him, "Where are we?" He yelled back, "You're up in a balloon". Immediately, the wind came up and blew them among the clouds and they were lost. Then, one person in the balloon turned to the other and said, "That must have been an economist down there." His friend said, "How could you tell?" He answered, "First he answered right away; second, technically he was correct; and third, we are no better off after having talked to him than we were before."

So I hope on that basis I have at least exceeded the expectations for an average economist. Thank you very much.

BUSINESS CYCLE, INFORMATION TECHNOLOGY REVOLUTION AND APEC ECONOMIC OUTLOOK*

Professor Edward Chen, President,
Lingnan University

Distinguished participants, friends, I understand this is a symposium on financial development. On top of the fact that I don't know very much about financial development, I also think that you must have had enough of the words "financial development" this morning, this afternoon and also tomorrow. Despite all the neo-growth theories of Lucas, Romer, I still believe in the law of diminishing returns. Therefore, I am sure you are subject to diminishing returns and I want to say something only marginally related to financial development. Actually, I want to focus on the information technology revolution.

I want to look at three specific impacts of the IT revolution on the economy. We all say the IT revolution is so important and so remarkable, yet not much serious academic study has gone into it. I just want to start the ball rolling by looking at some of the possible research areas. Firstly, I would try to tell you what I think the impact of IT revolution is or has been on the production pattern. Secondly, I would talk about how I think it has affected financial development. And thirdly, I want to talk about how it has affected the concept of business cycle. Eventually, you can draw your conclusion for the APEC economic outlook.

Now let us look at IT first. I think technological change is very different from the innovations we used to have in the past. The major innovations that occurred in human history, say in the first industrial revolution around 1750–1830 and then the second industrial revolution during 1860-1930, were very specific. They were breakthroughs – like the steam-engines, the railway, electricity, antibiotics, etc. They were very specific innovations in the past 200 years.

But IT innovations are different in that they are so pervasive that you cannot tie the revolution down to one industry or one product. Therefore it is going to last for much longer. And also, paradoxically, while we live in this IT age, it makes technology less important. This is a contradiction I have been telling my students. Now technology is so widespread that it costs less; technology transfer is much easier. The command over technology, again, is much less difficult than before. So what counts as success today is not how much you know technology and how much you master technology. It is how quickly you change with technology and how quickly you produce technology. Creativity, adaptability and meeting changes will be much more important than knowing technology. This is really a new age where everyone is given an opportunity to do something very different.

Now let me go to the first impact of the IT revolution on production. I would like to talk about two concepts. One of the concepts is developed by me. It's the flying-geese pattern of production for industrial development, a concept which I think many of you must be familiar with. It was first proposed by the Japanese economists in the 1940s, and was about international trade going through cycles. But eventually, Yamasawa-san and I tried to refine the concept of flying-geese into the pecking order of economies in Asia going through industrial development. In fact I went so far as to explain the success of Asia on the basis of the flying-geese.

What was absent in the other continents? Why was there no such industrial development like Asia in Latin America or in Africa? My argument is that there is a lack of regional pattern of economic development in the form of flying-geese in those places. At one time I believed that with the opening up of East and Central Europe there was a potential for flying-geese, with Western Europe being the leader, just like Japan in Asia, and followed by different tiers of economies engaging in industrial specialisation and co-operation. But this has not happened in Europe.

So Asia was the only place in recent history where flying-geese happened. There was a sub-regional division of labour, with a leader passing on technologies and industries to other economies and as a result the whole region grows - as the flying-geese. If you have seen geese flying, you know what that means. They are very disciplined with a leader, passing on production processes from one tier to the next. But the bad news for flying-geese is that you have to wait for your turn. If you are at the bottom of the tier, then you might have to wait for a long time. Like Viet Nam, Pakistan, or Bangladesh, they have to wait.

But then about 10 years ago I coined another concept called aerobatics. Aerobatics means aeroplanes displaying various patterns in the air in accordance with the tune of the music. With different tunes, the aeroplanes will group in different ways. At that time, I no longer visualised the industrialisation process as the passing on of techniques from one to the other, and everyone is waiting for his or her turn. But rather we are all waiting for technological opportunities. It was quite a new idea then. So when a new technology emerges, it is like a new tune of music. Different economies, even though they are at different stages of development, could capitalise on the opportunities and engage in the production process. However, very few people paid attention to the concept of aerobatics, probably because I was not a good enough marketeer. I did not actually get the concept widely accepted. But today, it seems that more people are attracted to the idea of aerobatics. The beauty of this concept is that you don't have to wait for your turn. If you are smart enough, you can capture the opportunities of new technology, engage in it and become part of it.

I think, today, under the IT revolution, the aerobatic pattern of industrialisation has become more plausible and explains the sudden emergence of India. As India successfully captures the opportunities of new technology, it does not have to wait for its turn as in the past. We also heard about the success story of Ireland. It used to be a slow-growing and very peaceful economy. Today it is still peaceful, but added to it is prosperity, hi-tech. So all of a sudden, you find Ireland joining the club, India joining the club, and Israel joining the club. It means the aerobatic pattern of industrialisation is actually taking place.

To a large extent I would attach this to the IT revolution. As a result of IT revolution, there is globalisation and at the same time fragmentation of production. Production is no longer tied down by location. Location is no longer important for production and we lose the concept of country of origin because one product could be produced in twenty or thirty economies. The IT revolution has led to a complete fragmentation of production, leading to location being no longer important for production. Different economies can all engage in the same production process at the same time without having to wait for one’s turn. Where location is still important is in the role as an intermediary, because today you still have to transport products from one place to another place. As an intermediary, location is important but as a production base location is no longer important. That is why I say Hong Kong's location is still important to Hong Kong as an intermediary. I would imagine Hong Kong’s advantage, in terms of its location, has not been entirely lost.

In terms of production, IT revolution has an even more significant impact on the concept of scale and scope. When I started to learn business studies or economics I was told the Ford model of production was the only workable model, ever since the first FORD automobile was produced in the year 1907. So everybody would try to go for this model of mass production, aiming at low price and big market. But this is no longer true today. Fordism has declined, meaning that scale is much less important than before. I would even go as far as to say that now is the age of scale neutrality. Small industries can compete with large ones because of IT revolution, because of CAD and CAM. Because of flexible manufacturing systems, many small enterprises can be just as efficient as the big ones.

While scale is less important in production, scope has become much more prevalent. That again is a contradiction. Conventionally, we were taught in economics there are two limitations to the

expansion of a firm. These are diseconomies related to co-ordination and communications. IT revolution breaks down these two barriers. Communications now is so much easier. Co-ordination now is possible, even for very big firms. Without the problems of communications and co-ordination, a firm can grow as big as it wants – the sky is the limit. And that explains to a large extent at least the prevalence of M&A activities (i.e. mergers and acquisitions). There must be a number of reasons for the emergence of M&A activities in the past few years. But in my mind one of the reasons must be IT revolution, which has made economies of scope much more important than before.

From the statistics in 1999, 83% of the foreign direct investment in the world was accounted for by cross-border M&As. That means M&A now dominates the entire world of investment. If this is true, then the world we are now facing is a very different world. It is completely international, with multinational firms going for mergers and acquisitions everywhere. Corporate governance and corporate structure will be subject to rapid changes under IT revolution. Firms will become much more international. For the first time, even Japanese managers have to work in a cross-cultural or transnational environment. I read with interest a report in a Japanese newspaper, that in the past senior management or even middle management in a Japanese firm would never have to learn a foreign language. But now, as many of the Japanese firms are owned by multinational corporations, even the managers at Nissan – currently half-owned by Renault of France – have to learn French and English to be able to talk to the senior management. And similarly for Mitsubishi managers, as the company is now majority-owned by Daimler-Chrysler. This is the first impact I have in mind about the IT revolution.

The second impact is on financial development, which is closer to our hearts as far as this symposium is concerned. Unfortunately, what I wanted to say has largely been said this morning. I wanted to embark on the popular debate: bank-based versus, capital market-based financing, and which is better. I think I subscribe to the view that nothing is better, nothing is absolute in this world. I would want to challenge a few of the notions developed after the Asian financial crisis.

One notion or one premise is that capital market finance is better than the conventional bank-based phenomenon. I do not subscribe to this point of view. It all depends. Especially after the Asian financial crisis, there were a lot of propositions that the problem was caused by what we call double mismatch in Asia. The first mismatch was mismatch in currencies. If you borrow in foreign currencies, while lending all in local currencies, you have mismatch in currencies. The second mismatch was mismatch in term structure. Most of the banks borrow short and lend long. And some economists even said if Asia had had a bond market, the Asian financial crisis would have been avoided. I also do not subscribe to these views. I do not think that the lack of a bond market, the lack of a fixed income market, or a long term borrowing market, is the cause of the Asian financial crisis. And neither do I believe bad banking structure in Asia was the primary cause. I do not believe that government failure or market failure was the primary cause of the Asian financial crisis. In my view, international failure was the major problem leading to the Asian financial crisis.

Cronyism is being pinpointed as the problem. But cronyism has existed in Asia for a long, long time. Some people jokingly said it seems it was only after the Asian financial crisis that suddenly people discovered that bankers in Asia have sisters, brothers, cousins and nieces, as if they were non-existent before the Asian financial crisis. At one time it was named as the cordial government-business partnership and today we call it cronyism. They are like different expressions for the same phenomenon.

Of course in the end, the question of which is the better system is the question of asymmetric information, that is how the agency problem or the third party problem is managed. People say relationship banking would be the best way to deal with this agency problem. You need intermediaries in the banking system because depositors are not the risk bearers. All the risks are accrued to the banks in bank-based finance. This could be a very efficient system in a developing

economy and under certain circumstances.

One argument put forward recently is that if you are in the early stage of economic development, then bank-based financing may be a preferred choice. Even with this, I do not quite agree. It is not whether you are at the early or later stage of economic development. It actually depends on what kind of banking system you have. In Hong Kong, China we have world class supervisions, and a very well-managed regulatory system in banking - learning by doing after, of course, painful experiences in the past 30–40 years. Even if Hong Kong, China is in an advanced stage of economic development, I would believe that bank-based financing is still good for Hong Kong, China in the prevailing circumstances. While we can look at how we can promote our fixed income market, it does not imply that we have to give up bank-based financing.

Let's ask how many developing economies would have the capability of issuing corporate bonds, and how many corporations would have the capability of making that attempt to raise funds. You may also ask in how many developing economies do people have the ability to buy bonds at the current income level and the asset accumulation that would enable them to buy bonds. There is a complex set of factors underlying how we should deal with the question of financing. I do not believe in the one-sided theory that one form of financial structure is preferred to another form of financial structure.

Here comes the question of whether IT revolution would help resolve or at least mitigate the problem of information asymmetry. The problem with banks is when they want to get information about the borrowers they can only obtain what we call idiosyncratic information which is usually informal and comes from various sources, which may not be transferable or transparent. Whether IT revolution would be able to make banks better intermediaries and more capable of managing risk, again I have certain question marks. Although it is possible, I still have doubts as to how to make use of IT to render this information management more efficient, and reduce the problem of asymmetric information. For a long time to come, I would say banking reform and especially of the institutional framework is extremely important. If you have a good institutional framework then bank-based financing, after all, is not a bad thing.

The other financial matter related to the IT revolution is the emergence of the dot.com, internet and web-based companies. These companies would be a challenge to conventional means of financing, and the gap can be conveniently filled by the non-conventional banks. Most of these companies do not have track records and some even do not have collateral, though they may have sound business plans. Banks may not be able to lend money to them. And neither could they go to the conventional capital market, which for investor protection purposes would be guarded by strict and stringent rules on listing.

Then how to deal with these emerging companies? One theory is simple: new capital markets, like NASDAQ and GEM, would be the possible channel. Yet, I do not believe that this is the ultimate solution.

My view is that the market will respond. Venture capital corporation based financing could be just as efficient as a second market. There is no unanimous consensus on which is the better way of financing economic development. My view is objective - circumstances are important. One has to review one's own situation, and has to know what one has and what one has not. I therefore would like to join the debate on financial development and financial management and advise that it is important to maintain a very flexible mind and do not believe in one theory alone.

My last point is on the impact on business cycle. IT revolution has an important conceptual implication for business cycle. In the post-war years with the United States being the engine of growth and the locomotive of the world economy, it had experienced nearly ten business cycles since 1945. Each lasted for about 5–6 years with an intermittent recession lasting for about 6 to 18 months. The last decade was an exception. After the 1990–91 recession in the United States, there

has not been another recession for almost 10 years, until the end of 2000.

One theory is the IT revolution has eradicated or eliminated business cycles. There are no more business cycles. There is a prolonged and eternal perpetual prosperity in the world. That could be good news. But the bad news now is that this seems to be not quite the case. It appears that a recession is imminent. Of course some of you might take a different view, but there is a slowing down in the United States. Whether you call this a recession or not according to the technical definition, certainly the US economy is taking a downturn.

This means that business cycles are still with us. The message I want to convey is I do not believe in the fact that business cycles are affected by economic, technical or productivity reasons. If one believes in the fact that business cycles are caused by productivity, diminishing returns, then IT revolution might have something to do with business cycles. But I am a very old-fashioned economist. I believe in the fact that business cycles are entirely psychological. It is better for psychologists to deal with business cycles than economists.

I would subscribe to the old- fashioned view advocated by economists like Joan Robinson that investment is subject to animal spirit. It is a herd instinct, an animal spirit, which drives economies up and down. If that is true, if that is only psychology, then it means IT revolution is still of no help. I have to change the very fact that we feel differently at different times. When we feel good we invest, we buy; when we don't feel good we just don't buy and don't consume. You have to wait until pessimism is to an extent that you want to change your behaviour. Now if this is true, we will still be subject to business cycles and as a result I believe that the US current recession will be short-lived.

There are two schools of thought. One school is technological slump - technological change is not going to help us; the other school is technological crunch - we are still in shortage of technology and good people. Which is true and which is not true, of course has yet to be seen. But I believe in business cycles as usual, not only business as usual. The current recession in the United States will last for about 12 to 16 months, and the Asia-Pacific or APEC economies should be able to have an upturn very soon, instead of engaging in a deep recession.

But the only thing we learn from this recession in the IT revolution is that it is a paradox. Despite the talk about IT, about how to use IT in industry solutions- not only B to C or B to B, but also B to G (business to government) about industry solution, about custom management relationship using IT, what we observed in the past six months is surprising. Asian firms were very slow in adjusting. The market information was so bad that no Asian firms, according to my knowledge, realised a recession was imminent as late as Thanksgiving. Only after Thanksgiving did they realise orders were not coming. It is a paradox. In this IT age I thought we could do better than that.

And then you look at inventory control. We all learned such things as logistics, supply chain management, by using IT. But evidently, Asian firms have not been managing supply very well. The inventory figures in most of the IT firms in Japan is 30% more than last year. Korea is even worse – my information is it has 50% more inventory than last year. The same thing in Chinese Taipei. The same thing in most of the IT prevalent economies. Then the question we want to ask is what happened. We all talk about IT but we have not been wisely utilizing IT for business. Maybe that is something which we can learn from the existing business cycle.

I think for Asia we have been too concentrated in terms of IT products and in terms of the market for IT products. The concentration index shows that Asia depends too heavily on IT products. What Asia has been experiencing in the past decade has not been the usual business cycles but what I call the IT cycles. While IT accounts for only slightly over 10% of US GDP, it accounts for a far higher proportion in many Asian economies.

That was why in the last IT recession in the United States in 1985, the US did not suffer as much as Asia did. The same occurred during the IT price recession 10 years after in 1996. Again the US did not suffer by as much as Asia. 2001 saw yet another recession in IT prices, and once again the Asian economies did not seem to have been able to cope with this too well.

And with this note I am still optimistic about the APEC economies. I hope I will be able to learn more from you tomorrow when you are actually giving us the forecasts. Thank you very much.

SESSION I: FINANCE AND GROWTH

(A) Part a (Speakers: Dr Motaru Tsuru and Dr Mark Spiegel; Discussant: Dr Jack Zhang; and Moderator: Prof Richard Ho)

Dr Tsuru started the session by analyzing two types of financial system, viz. the relationship-based financial system and the arm's length financial system. He pointed out that most economies had some degree of both types of financial system. The benefits of relationship-based system were usually the cost of arm's length system and they were the two sides of the same coin. The relationship-based system was good at reducing agency costs associated with financial contracts and mitigating financial constraints, especially in the situation of capacity scarcity. However, in the situation of capital abundance, such as in the "bubbles" period, banks were more vulnerable to the rent-seeking behaviour of inefficient borrowers. Ex-post contractual flexibility of relationship-based system made it easier for banks to offer help to firms in financial distress. But empirical evidence in Japan proved that such flexibility could be harmful. Very often, the associated soft budget constraint tended to encourage banks to sink deeper once they had started to make loans to unprofitable projects. This was one of the most important factors underlying mounting non-performing loans in Japan. In times of macro and financial shocks, the problem would explode leading to credit crunch with dire consequence for economic growth and recovery would be prolonged.

In the arm's length or market-based system, the burden of adjustment to a major macro or financial shock often fell on the households given their relatively larger holdings of equities in their investment. The negative effect was thus more widely distributed, though the functions of the financial system were less affected.

In the relationship-based system, the burden tended to concentrate on the banks at least initially. While banks could play the role of inter-temporal risk pooling, this role could be severely constrained in face of a major shock that turned a large part of the banks' assets into non-performing assets. This when carried to the extreme could even paralyzed the functions of the financial system. Subsequent restructuring was often prolonged, due to the forbearance policies of authorities and the soft budget constraints. Malfunction of the relationship-based financial system usually would last longer with lingering negative effects on the entire economy.

Empirical evidence showed that the estimated recovery time would be much longer, and the output loss larger in economies with a relationship-based system than with an arm's length system. Normally the monitoring of lending to firms in the conventional but steadily growing industries was easier, as the lender (bank) knew the borrowers as well as investment opportunities in the industry. But for firms in an entirely new industry with rapidly changing technology, securities market as a typical example in the arm's length system should work better in dealing with diversity of opinions and screening of investment opportunities. Yet the recent boom of the IT industry and robust productivity growth in the United States notwithstanding, one still could not conclude that the US system would be a better system. Each financial system had its relative advantage depending on the underlying situation.

Dr Spiegel took the audience through the empirical relationship between financial development and growth. Dr Spiegel's study aimed at examining whether financial development would only enhance the rate of factor accumulation through greater investment in physical capital and in human capital, or whether financial development would also enhance total factor productivity (TFP) growth. If it were the former, then financial development would only quicken the pace of transition of developing economies to a steady state comparable to a developed economy. Growth would taper once the economy concerned approach this steady state (i.e. the limit to quantitative expansion). If it were the latter, then financial development would contribute to enhancing growth not only in the short run but also in the long run.

The study adopted two base growth specifications (neoclassical and endogenous), using the panel GMM methodology. Some interesting findings are reported below.

First, the relative share of financial sector claims on the non-financial private sector to GDP (PRIV/Y) was found to be significant to TFP growth for both base growth specifications. But the results were not very robust upon inclusion of fixed effects. Secondly, the study did find some role for financial development in subsequent TFP growth after accounting for factor accumulation rates, though the result was again not very robust on inclusion of fixed effects. Thirdly, strong results were found for physical capital accumulation. The indicators for financial development were all significant when fixed effects did not feature in the sample. But the BANK variable (the ratio of deposit money bank assets to total assets in an economy) became significant when the fixed effects were included. It seemed to show up in this study in terms of enhancing physical capital accumulation. Fourthly, the PRIV/Y indicator was somewhat significant in human capital accumulation, but it was not robust to fixed effects. The result was not surprising as human capital accumulation rates were likely to be heavily influenced by government policies across economies and should have less of a strong market relationship than physical capital accumulation rates.

Lastly, in terms of the APEC economies, the DEPTH variable (the ratio of liquid liabilities of the financial sector to GDP) seemed to affect TFP growth more among the APEC economies after accounting for fixed effects. The APEC economies were also more sensitive to initial financial development in the determination of physical capital accumulation rates. Also, the DEPTH and the BANK variables affected the APEC economies more in human capital accumulation. But the finding was not very robust as it did not hold up after accounting for fixed effects. This again was not surprising as the human capital accumulation rates across economies were highly affected by public policy decisions.

Discussion

Commenting on Dr Tsuru's paper, **Dr Zhang** suggested that it might be better to include also the mechanism behind the development of financial intermediation and a discussion about a favourable financial system for developing economies. Besides, Dr Zhang found that the definitions of relationship-based financial system and the arm's length financial system not as clear as the commonly used security-market-based system and bank-based system. Furthermore, Dr Zhang considered it too early to draw a conclusion for the two systems based on the evidence from the Asian financial crisis.

Dr Tsuru agreed that there were a lot of factors contributing to the Asian crisis, but he had confined the discussion to the most relevant issues in his paper.

In relation to the recent debt problem in the telecommunications sector, Dr Tsuru was asked if banks with professionals carrying out studies on credit worthiness, risks and prospects of companies were more efficient in allocating funds than stock market which always demonstrated herd behaviour. Dr Tsuru expected that banks would not be efficient in monitoring, controlling and channelling funds to companies in a very new industry, such as the telecommunications industry, as bankers might not have specific knowledge to assess the prospects of these industries.

Dr Tsuru admitted that it was not easy to move smoothly from one system to another in responding to a floor question. Through financial liberalisation, rents earned by banks would decline and their difficulties in performing their monitoring roles would increase. So, he stressed that the government might consider restricting to some extent the development of stock market in order to maintain sufficient rents for banks to work efficiently.

Commenting on Dr Spiegel's paper, Dr Zhang favoured a time-series approach to the cross-sectional analysis adopted in the paper, given the dynamic relationship of financial development and growth. Also, cross-sectional analysis was suspected of data mining and had difficulties in ascertaining causality. Besides, Dr Zhang doubted that the study was by nature a steady state analysis as it lacked a theoretical model as foundation.

A question from the floor showed similar concern that the study did not tell whether it was a higher level of financial development leading to more investment or increased investment leading to more financial intermediation. This causality problem was in fact dealt with by adopting a degree of lag, i.e. by looking at initial financial development and subsequent physical capital accumulated, as explained by Dr Spiegel.

In response to a query on not imposing sufficient controls on other impacts, Dr Spiegel clarified that he had exerted some degree of control for fixed effects and would not go further in order to have a balanced panel, as same variables of comparable quality were usually unavailable.

Asking about whether the use of only quantitative variables in representing financial development would miss out the qualitative aspects, Dr Spiegel explained that he deliberately used those variables in order to provide a basis for comparison. Indeed, he agreed that policy variables such as forbearance and the adequacy of bank regulation were of paramount importance in terms of assessing the quality of a financial system.

A floor participant was surprised and so was Dr Spiegel of the robust result found for the APEC sample despite the fact that it was a group of diversed economies. Dr Spiegel expected that this was partly attributable to the time frame from 1965 to 1985 that covered the Asia Miracle when members had a more developed financial system as compared to their economic development than those in the full sample. In fact, Dr Spiegel did not expect that the APEC economies deviated much from the other economies. He also looked into the sub-sample of developing economies and checked whether economies at different stages of development delivered different results. But they seemed to perform in a relatively consistent manner.

Dr Spiegel re-addressed the issues raised by Dr Zhang after the floor discussion was closed. Dr Spiegel reiterated that his study was designed to be mechanical, using the variables adopted in King and Levine and regressions from Mankiw Romer and Weil and Benhabib and Spiegel (1994). This had made data mining almost impossible. The purpose of using two different models was to show that the effect of financial development was valid, regardless of the choice of growth model. Furthermore, Dr Spiegel disagreed that this kind of growth accounting exercise was tied to a steady state. He considered these specifications to be equally valid in transition and in steady state.

(B) Part b (Speakers: Prof Yung-chul Park and Prof Jack Carr; Discussant: Prof Michael Devereux; and Moderator: Prof Richard Ho)

Prof Park noted that although many empirical studies had confirm the close correlation between financial development and economic growth, the causality was difficult to establish. In his study, he would address the controversy over whether it was the intermediary (bank) based financial system or the market based financial system that was considered more conducive to economic growth and efficiency. Prof Park pointed out that empirical evidence so far available was at best inconclusive as to which of the two financial systems was more efficient in staving off financial crisis and in promoting economic growth. He considered the common explanations such as moral hazard, lack of prudential supervision and regulation of the banking system, and inefficient bank operations were insufficient to substantiate the argument that the bank based system was less preferable. He further pointed out that there was extensive literature on the relative effectiveness and efficiency of the bank based financial system. Especially in developing economies, information asymmetry, lack of access to long-term financing, and absence of a well-developed legal system could render bank based system more effective than market based system. Nevertheless, Prof Park reckoned that as developing economies gradually opened up their capital account, they increasingly would have to operate in a globalised financial system with rising need for external financing. A more balanced approach with parallel development of both the bank based and marked based system would be a better solution.

Prof Carr talked about the issue of bank stability and ways in which this can be achieved. In his study, he made extensive reference to the experiences of financial institutions in the developed economies, namely Canada and the United States. Prof Carr believed that banks played an important role in the payment system, a unique function banks in all economies performed. In summary, he felt that governments should have an important role to play in promoting bank stability. He advocated deregulation of the banking industry and stable monetary policy to create a competitive environment for the banking sector to operate. He recommended against interest rate rules or use of banks as means for governments to effect social transfers. He also advised against the non-risk rated deposit insurance scheme as it would only exacerbate the moral hazard problem. Finally, governments should enforce credit contracts, encourage the publication of accurate and comprehensive financial statement and provide maximum bank flexibility for banks to perform their financial intermediary services optimally.

Discussion

Commenting on Prof Park's paper, **Prof Devereux** offered a different viewpoint. While the Asian financial crisis showed that capital market liberalisation and poor regulation of the banking system did not mix, an equity-based growth financing structure could achieve capital liberalisation without making these economies susceptible to financial crisis. In this connection, equity-based system might have been better than the banking system. Though both banks and stock markets could contribute to growth, Prof Deverueux expected that productivity growth would be more closely tied to new technologies like information technologies, which would be more reliant on equity financing as reflected by the experience of the United States. So, he suggested that it was important for East Asia to generate a greater dependence on equity financing, and a lesser dependence on banks, to the extent that new growth in East Asia had to come from productivity growth.

With the belief in a balanced approach for financial development, Prof Park re-addressed two points in wrapping up his discussion. Firstly, he thought it was wrong to argue one system was better than the other on the basis of the East Asian experience. Cronyism, corruption and interference were not inherent defects of the banking system, and there were economies with basically bank-based systems suffering from severe financial crisis but did not have the above-

mentioned problems. Secondly, Prof Park rejected the idea that firms investing in new technologies had to go to the equity market or venture capitalists for financing. He expected that financial institutions would be able to adjust themselves to finance these ventures or risky investments.

As for Prof Carr's paper, Prof Devereux commented that the discussion about deposit insurance was largely a distinction between public interest and private interest, and governments tended to lean excessively towards the private interests of smaller banks when they made laws on deposit insurance. Prof Devereux held the view that deposit insurance was not sufficient to explain the extent of bad loans in the US or Canada in the 1980s as deposit insurance was capped. There would be boom-bust cycles in the financial markets irrespective of whether there was deposit insurance or not. For instance, though there were not many deposit insurance in emerging markets, there were major boom-bust cycles just the same. Also, the moral hazard problem in emerging economies was more implicit in the relationship between banks and governments and between banks and industry. Moreover, a lot of the lending was external, so deposit insurance would not matter anyway. Finally, though Prof Carr argued that deposit insurance deterred fair competition by hurting large banks and subsidising small banks, Prof Devereux believed that the absence of deposit insurance, on the other hand, could prevent competition in the banking sector by preventing small banks from entering the market.

The floor seemed to be highly interested in issues related to deposit insurance. In asking for his comment on the deposit insurance in Mexico, Prof Carr stressed that there would be potential problems, but he raised alternative arguments that deposit insurance might work with sound banking supervision and regulation. In response to the query whether foreign competition was necessary, he stated that foreign competition might not be necessary to bring about efficiencies for large economies like the United States, but was probably necessary for smaller economies, like Canada or Mexico. When the domestic market was not large enough and the equilibrium number of banks too small if mergers were allowed, then foreign competition should be encouraged.

After a long discussion on the problems associated with non-risk rated deposit insurance scheme, Prof Carr was asked if he favoured risk rated deposit insurance. He agreed that he was in favour of risk rated deposit insurance only if the risk premia were set by the market. He also suggested that co-insurance could be a possible option. When there was a 100% deposit insurance scheme below some caps and which were wide enough to cover a large number of depositors, depositors would not care about the risks of the bank. Nevertheless, with co-insurance, depositors would go out looking for ways to assessing risk.

In his concluding remarks, Prof Carr re-addressed the following points. Even deposit insurance with caps could pose problems. The reason was that it would be very difficult for governments to follow the caps when bank failures took place. Deposit insurance just taxed large banks and subsidised the small ones. So, bigger banks that did not take excessive risk did not want deposit insurance. They did not need deposit insurance to tell their depositors that they were safe. In respect of whether deposit insurance would help competition, Prof Carr held the view that smaller banks that would not have come without the subsidy from deposit insurance should not be subsidised to enter the market from an economic point of view.

FINANCE AND GROWTH
SOME THEORETICAL CONSIDERATIONS, AND A REVIEW OF THE EMPIRICAL LITERATURE

Dr Kotaro Tsuru[1], Research Institute of Economy, Trade and Industry (RIETI), Japan

I. MACROECONOMIC ASPECTS: FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH

I.1 Introduction

The issue addressed in this paper is whether or not the type of financial system or the level of financial development affect long-run growth. There has been a considerable debate on this issue dating far back into the 19th century at least. Walter Bagehot (1873) and Joseph A. Shumpeter (1912) stressed the importance of the banking system on the level and growth rate of national income, via the identification and funding of productive investment, whereas Joan Robinson (1952) asserted that economic growth creates a demand for financial services ("where enterprise leads, finance follows"). This view implies that financial development is just a "side-show" of economic development. The relationship between finance and growth has also taken on a new importance. Recent turbulent economic developments in dynamic Asian countries and Japan and continuing strong steady growth in the US economy have renewed interest in the importance of financial systems and their impact at the macro and firm-level on performance and productivity.

The analysis of this issue has been accompanied by several important developments over the past decade. First of all, "new growth theories" and related empirical studies using a large cross-country data set have established more rigorous and systematic foundations for this relationship. Second, recent development in the economics of information and contract theory has led to more detailed analysis of the functions of banks, stock markets and other corporate financing, and thus improved our knowledge at microeconomic and institutional levels. Third, recent research on the relationship between law and finance in an international perspective (La-Porta *et al*., 1997, 1998) has provided another important approach in the analysis of the relationship between finance and growth.

This paper aims at providing an overview of theoretical considerations and a review of the empirical literature on the relationship between finance and growth. Section I describes the role of financial development in economic growth at the macro level, both theoretically and empirically. Section II examines the role of corporate finance in firm-level performance, especially, focusing on the role of "internal funds" and "internal capital markets". Section III presents a comparative analysis of financial systems, and analyses both the Asian crisis and the US venture capital phenomenon from this perspective. An annex considers the relationship between legal quality, financial systems and economic development, especially for OECD countries and some selected Asian countries. Section IV presents some policy implications and conclusions.

I.1.1 Early work

The relationship between financial development (especially financial intermediation) and economic growth was extensively analysed more than two decades ago by Goldsmith (1969),

[1] I am grateful for helpful comments and suggestions by Sanghoon Ahn, Philip Hemmings, Michael Leahy, Maria Maher, Charles Pigott, and, in particular, Nick Vanston. I am also indebted to Sandra Raymond for her valuable assistance. The opinions expressed in the paper are those of the author and do not necessarily reflect those of the OECD or its Member countries.

McKinnon (1973), Shaw (1973) and others. They found strong and positive correlations between the degree of financial market development and the rate of economic growth.

However, their research had some fundamental weaknesses. First, they failed to develop a theoretical foundation for such a relation. Some earlier work had stressed the link between financial development and the *level* of productivity, but not the *rate* of growth. Second, their empirical research could not establish that the direction of causality went from financial development to growth. The relationship could be coincidental, because other contemporaneous shocks affect both variables. Or, the causality could be reversed since high growth may lead to the emergence of more developed financial intermediaries and markets. Recent research in this area has taken steps to overcome these weaknesses.

I.1.2 Theoretical considerations

Postulating a link between financial development and economic growth entails relaxing some neo-classical assumptions. First, in an Arrow-Debreu model with no information or transaction costs, there is no need for a financial system. Hence, it is the costs of getting information and making transactions that create incentives for the emergence of financial markets and institutions. Second, in a neo-classical growth model, only the exogenous technology factor affects the steady-state per capita growth rate. Hence, in this theoretical framework, the level or type of financial development could affect the long-term growth rate only via a very limited route if it directly affected the *rate* of technological progress.[2]

I.1.3 Basic endogenous model

A recent surge of interest in the link between financial development and economic growth has resulted mainly from the development of endogenous growth models, which raise the possibility of an influence of institutional arrangements on growth rates. These models could thus offer important insights to the impact of financial development on economic growth.

First, consider the simplest type of endogenous growth model "AK", in order to understand the several routes via which financial development affects economic growth (Pagano, 1993a).

If it is assumed that a certain portion (ϕ) of saving is used for investment, the steady-state growth rate can be expressed by the following equation:

$g = A \phi s - \delta$
g: the steady-state growth rate
A: Productivity of capital
s: Saving rate
δ: depreciation rate

Thus, financial development could influence the economic growth rate by changing either the productivity of capital (A), or the efficiency of financial systems (ϕ), or the saving rate (s).

[2] Even in this framework, an increased efficiency of the financial system could result in a higher effective investment rate for a given savings rate. This would lead to faster growth for a while until the economy converged back on to the underlying growth path, but at a higher level. Thus, financial development can increase the level of income in more wide-ranging growth models. The Annex examines a relationship between financial development and the level of income for OECD and selected Asian countries.

I.2 Finance and growth: the channels

I.2.1 More efficient allocation of capital

A financial system is efficient when it allocates funds to those projects with the highest marginal product of capital. In the above framework, by allocating capital more efficiently, a financial system could improve the productivity of capital (A), and hence economic growth.

However, this process is costly. First, in order to find the most profitable project, financial systems need to monitor or screen alternative projects. Even if high-return projects are detected, their possible high risks might discourage individuals from investing in these projects. Thus, financial systems must play a role of risk-sharing and induce individual investors to invest in riskier but higher-return projects.

The role of information acquisition and risk-sharing by financial intermediaries was explored by Greenwood and Jovanovic (1990). In their model, there are two production technologies, a safe and low-return one and a risky and high return one. A risky technology has two disturbances: an aggregate and a project-specific shock. Financial intermediaries can eliminate project-specific shocks completely by managing their portfolios and can detect the existence of an aggregate shock by noting simultaneous disturbances involving more than one project. Hence financial intermediaries can allocate resources to the place where they earn the highest return, while individuals without financial intermediaries cannot select the appropriate technology for the realisation of a shock.

Another important role of financial intermediaries is to provide liquidity to individual investors (Diamond and Dybvig, 1983). Unless financial intermediaries (or financial markets) exist, households can invest only in illiquid assets (for production). However, their precautions against an idiosyncratic liquidity shock might discourage them from investing in higher-yield, but more illiquid assets. Financial intermediaries can reduce such inefficiency by pooling the liquidity risks of depositors and invest funds in more illiquid and more profitable projects. Bencivenga and Smith (1991) showed that financial intermediaries, by allocating funds to more illiquid and productive assets and reducing the premature liquidation of profitable investments, could enhance the productivity of capital, and thus the growth rate.

The role of pooling rate-of-return and liquidity risks could also be played by security markets, especially stock markets. Individual investors can sell shares in the stock market when they face liquidity problems and diversify their rate-of-return risks by devising appropriate portfolios. Thus, the introduction of a stock market with two insurance functions could enhance the productivity of capital in the same way that financial intermediaries can (Levine, 1991). Portfolio diversification via stock markets might have an additional growth-enhancing effect, by encouraging specialisation of production by firms, as stressed in Saint-Paul (1992), since such diversification could reduce risks resulting from sectoral shocks and enable firms to specialise further.[3] If we assume production externalities (Romer, 1986), more specialisation improves capital productivity and hence the long-term economic growth rate.

I.2.2 More efficient transformation of saving into investment

Financial intermediaries or securities markets channel household saving to investment but absorb some fraction of resources ($1-\phi$) since their activities are costly in the presence of information and transaction costs. These costs absorbed by financial systems include the spreads between deposit and lending rates, commissions and transaction fees. Indeed, they are indispensable for these

[3] Saint-Paul (1992) assumes that there are two regions, each of which has firms and consumers which own their shares. In his model, portfolio diversification means that consumers in one region can have shares in firms in the other region.

systems to function properly, but may be set at inefficiently high levels due to monopoly power, regulations or other reasons. If the quasi-rents extracted by financial systems are spent on private consumption or inefficient investment, the loss of resources depresses the growth rate.

One good example is "financial repression", typically seen in many developing countries. In these countries, governments "repress" the financial sector, from which they collect seigniorage via inflation taxes, and spend them on public consumption. If governments allow for more financial development, (which can be understood as a reduction in the transaction costs of converting illiquid to liquid assets), the need for people to carry money, and thus the base of inflation taxes is reduced and this should have positive effect on economic growth (Roubini and Sala-i-Martin, 1995).

Another example is an information based model of a monopolistically competitive banking industry, proposed by Harrison, Sussman and Zeira (1999), which focuses on the feed-back relationship among banking specialisation, the cost of monitoring and growth. In their model, economic growth increases banks' activity and profits, and promotes entry of more banks. This entry shortens the average distance between banks and borrowers, facilitates regional specialisation and thus lowers the cost of financial intermediation ("the specialisation effect"). This in turn boosts investment and economic growth.[4]

I.2.3 The effect on the saving rate

There are at least four routes via which financial development could affect saving rates, involving 1) idiosyncratic risks; 2) rate-of-return risks; 3) interest rates and 4) liquidity constraints. First, a reduction in idiosyncratic risks (*e.g.* endowment and liquidity risks) by insurance and finance markets might lower the level of precautionary saving by households, and hence the growth rate (Leland, 1968; Sandmo, 1970; Kimball, 1990 and Caballero, 1990). Devereux and Smith (1994) consider the implication of global risk-sharing on economic growth. In their model, if country-specific endowment risks are shared via international capital market, saving rates and economic growth would be lower than otherwise[5]. Second, however, a cut in rate-of-return risks by portfolio diversification has ambiguous effects on saving (Levhari and Srinivasan, 1969). In their model with constant relative risk-aversion utility (CRRA), if the risk aversion coefficient is greater than one, saving responds negatively and positively otherwise. Devereux and Smith (1994) also shows that diversifying rate-of-return risks will reduce saving and growth rate if relative risk aversion exceeds one. Thus, a reduction in two kinds of risk by financial development can have different effects on savings rates.

Third, financial development, for example, by reducing "financial repression" might increase the interest rates paid to households, but its effect on saving is theoretically ambiguous due to its well-known income and substitution effects. Fourth, Jappelli and Pagano (1994) shows that easing liquidity constraints on households by liberalising consumer credit and mortgage markets may lower the saving rate, since younger generations in their overlapping generation model would dissave much more in the absence of liquidity constraints. Thus, the overall effect on saving rate is still ambiguous and financial development could reduce growth rates via the effect on the saving rate.

I.2.4 Conclusion

To sum up, in an endogenous growth framework, financial development can promote economic growth via its positive impact on capital productivity or the efficiency of financial systems in

[4] However, economic growth can increase the cost of monitoring by raising wages, since monitoring is a labour-intensive activity ("the wage effect"). Using cross-state US banking data, they show that the wage effect is dominated by the specialisation effect.
[5] They assume constant relative risk-aversion utility (CRRA).

converting financial resources into real investment. However, its effect on the saving rate is ambiguous and could affect the growth rate negatively. In net terms, the impact on welfare is likely to be positive, since increased efficiency of investment in the long term can offset any reduction in the propensity to save.

I.3 Empirical studies

The earlier work had some weaknesses and recent research has addressed them:

The size of financial intermediaries or financial markets may not be an appropriate indicator to measure the degree of financial development or the functioning of financial markets. Goldsmith (1969) used the value of financial intermediary assets divided by GNP.

The empirical link between the indicators of financial development and economic growth might be coincidental. It is uncertain that this relationship will still hold when other important variables for growth are controlled for.

The close statistical relationship between financial development and growth may not necessarily imply causality from financial development to economic growth. Financial development may well be led by economic growth. In addition, this relationship might be driven by common omitted variables mentioned above and thus, the observed positive association may not imply a causal link.

The earlier work did not examine whether the growth-enhancing effects of financial development come from an increase in productivity growth [the efficiency of investment (A)]or an increase in the rate of investment affected by the saving rate (s) and the proportion of saving invested (ϕ).

I.3.1 A resurgence of empirical research - King and Levine

The first attempt toward comprehensive empirical research to solve these problems was initiated by by King and Levine (1993). They introduced four measures for the development level of financial intermediaries, which may measure the functioning of the financial system more precisely,averaged over the period 1960-1989.

DEPTH : the liquid liabilities of the financial system [(currency plus demand and interest-bearing liabilities of banks and nonbanks)/GDP];

BANK : the importance of the role of banks (relative to the central bank) for allocating credit, (bank credit / (bank credit + central bank domestic assets);

PRIVATE : the ratio of credit allocation to private business to total domestic credit (excluding credit to banks);

PRIVY : the ratio of credit to private business to GDP.

They also employed three growth indicators averaged over the same period:

real per capita GDP growth (economic growth);

real per capita capital growth (capital accumulation);

TFP growth (productivity growth).

They ran 12 regressions on a cross-section of 77 countries, controlling for other variables associated with economic growth (*e.g*. income per capita, education, political stability, indicators of exchange rates, trade, fiscal and monetary policy). They found statistically and economically significant coefficients of financial development in all 12 regressions and confirmed a very strong relationship between each of the four financial development indicators and each of the three growth variables.

For example[6], the coefficient of DEPTH on real per capita GDP is 0.024. Thus, if a country increased DEPTH from the average of the slowest growing quartile of countries (0.2) to that of the fastest growth quartile of countries (0.6), its real GDP growth per capita would have increased by about 1 per cent per year (0.024 x (0.6 - 0.2) = 0.0096). The average growth difference between two groups was about 5 percent per year over the thirty years and the rise in DEPTH could shorten 20 per cent of this growth difference. Therefore, financial development can have a large impact on growth rate.

In order to investigate whether growth results from financial development, they also considered how well the degree of financial depth in 1960 is correlated with the three growth indicators averaged over 1960 -1989. Their regressions suggested that the initial level of financial development could predict well the subsequent rates of economic growth, capital accumulation and productivity growth, even after controlling for important core factors of economic growth.

I.3.2 Other empirical work

The work by King and Levine was a first important step in the direction of eliminating some of the weaknesses in previous work. For a sample of a larger number of countries, they 1) construct more functioning-related indicators of the level of financial development and 2) systematically control other variables affecting long-run growth. They also 3) investigate the causality issue, by asking whether the development can predict long-run growth, and 4) examine the effect on economic growth via capital accumulation and productivity growth channels. However, there still remain some drawbacks in their analysis. First, their work was indecisive on the relative importance of productivity growth and the rate of investment. In addition, they did not examine differences in the roles of the various financial markets (*e.g*. the stock market, the bond market, the insurance market and the consumer credit market). Subsequent empirical work has gone some way in addressing these criticisms:

Jappelli and Pagano (1994), focusing on household credit markets, found that their development (represented, for example, by the ratio of consumer credit to GDP) was negatively correlated with saving and growth rates and that some types of financial development could affect growth rates negatively, as predicted by theoretical models.

Levine and Zervos (1998) also made some progress in this direction. They studied empirical links between various measures of stock market development and banking development and economic growth, for a cross-section of 49 countries over the period 1976-1993. They presented the following six indicators associated with financial development in the initial year (1976):

Capitalisation: the value of domestic listed shares/GDP, measuring stock market size.

[6] The following calculation is taken from Levine (1997).

Turnover: the value of trades of domestic shares/ the value of listed domestic shares, measuring stock market liquidity.

Value traded: the value of trades of domestic shares/GDP, also measuring stock market liquidity.

Volatility: the volatility of stock returns, as a 12 months rolling standard deviation.

Bank credit : PRVY measuring banking development.

APT integration: the degree of international capital market integration based on international arbitrage pricing theory (APT).

CAPM integration: the degree of international capital market integration based on the international capital asset pricing model (CAPM).

Even after controlling for many factors related to long-run economic growth, both measures of stock market liquidity and banking development were positively and robustly correlated with future rates of economic growth, capital accumulation and productivity growth. In turn, they found no evidence that stock market size, international integration, and stock return volatility were robustly linked with growth indicators. Moreover, none of the six financial indicators were closely correlated with private saving rates.

I.3.3 Causality problems

Another weakness of King and Levine (1993) is that their causality test was in fact inconclusive. For example, Rajan and Zingales (1998*a*) stressed that the initial level of financial development may be a leading indicator rather than a causal factor, if financial markets step up their lending in anticipation of faster economic growth. One way to solve causality problems is to find an indicator that is unlikely to be affected by economic growth but measures some aspect of financial development. Roubini and Sala-I-Martin (1995) found that growth was negatively correlated with the bank reserve ratio as a proxy for financial repression, that was not likely to be affected by economic growth.[7]

More recent work on this area has focused on the causality issue. To mitigate the problem, Rajan and Zingales (1998*a*) took a different approach, focusing on a more disaggregated relationship between finance and growth. They stressed that financial development reduces the costs of external finance to firms and promotes their growth. Assume that different industries have their own efficient demand for external finance (investment minus internal cash flow) and that the distribution of the need for external finance by industry are very comparable across countries. In this setting, an industry with more demand for external finance should grow faster in countries with more developed financial markets. They used the US as a benchmark country with relatively frictionless financial markets, and found that industries more dependent on external finance grow faster in countries with more developed banks (as measured by PRIVY) or stock markets (stock market capitalisation).

Jayaratne and Strahan (1996) examined a specific episode, the impact of relaxed bank branch regulation in the United States on regional growth in individual states, and found a positive effect

[7] Haslag and Koo (1999), using cross-country data for 119 countries for the period of 1980-89, show that the reserve ratio is systematically related to growth, but this relationship is dependent on the choice of growth measures (the relationship is not "robust"). On the other hand, reserve requirements are strongly and robustly related to several indicators of the development of financial intermediaries. They conclude that financial repression is empirically linked with growth at least in part through the level of financial development.

on real per capita growth rates via improvements in the *quality*[8] of bank lending. They stressed that states did not deregulate their banks in order to accommodate future growth opportunities, since they found only weak evidence that bank lending increased after banking branch reform, and no evidence that the rate of investment increased following reform, implying a more convincing causality from financial development to growth.

I.3.4 The role of legal aspects determining financial development

To examine the issue of causality, the use of instrumental variables can be used for controlling the simultaneous bias that may arise from the joint determinant of financial development and growth sources. It is important to find relevant instrumental variables for financial development, which can extract the exogenous component of financial development. Levine (1998, 1999) and Beck, Levine and Loayza (1999) focused on the work by LaPorta *et al*. (1998) (henceforth, LLSV), which presents comprehensive and systematic research on legal aspects of corporate finance for 49 countries and their links with legal origins. By using information derived from LLSV and others, Levine (1998, 1999) constructed the following legal determinants of financial development:

1. Creditor rights:

– CREDITOR = SECURED1 - AUTOSTAY - MANAGERS, ranging from -2 (low) to 1(high).

– SECURED1 = -1, if secured creditors are ranked first in the distribution of the proceeds that result from the disposition of the assets of a bankrupt firm.

– AUTOSTAY: = 1, if a country's laws impose an automatic stay on the assets of the firm upon a reorganisation petition, and = 0, otherwise.

– MANAGERS: = 1, if the firm continues to manage its property pending the resolution of the reorganisation process, and = 0, otherwise.

2. Enforcement:

– RULELAW: an assessment of the law-and-order tradition of the country, ranging from 1 (weak) to 10 (strong).

– CONRISK: an assessment of the risk that a government will modify a contract after it has been signed, ranging from 1(high) to 10 (low).

3. Accounting standards:

– ACCOUNT: an index of comprehensiveness of company reports, ranging from 0 (minimum) to 90 (maximum).

Levine (1999) examined the relationship between these legal determinants and the indicators of financial development presented in King and Levine (1993). All these variables were significantly correlated with the indicators of financial development, having expected signs, despite a difference in their significance levels. Thus, countries with legal and regulatory systems assuring a high protection of creditors tend to have more-developed financial intermediaries.

[8] They include three measures of loan quality: ratio of non-performing loans to total loans, net charge-offs (gross charge-offs minus recoveries), and ratio of loans to insiders to total loans.

Then, they selected different instrumental variables for the different financial intermediary indicator based on the degree of their correlation (all included CREDITOR and CONRISK). Generalized Method of Moments (GMM) methods revealed a strong link between the exogenous component of financial development and economic growth (real per capita GDP growth), after controlling for other important growth sources. (The coefficient on financial intermediary development is significant at the 5 per cent level in seven out of eight regressions.) In addition, the legal and regulatory factors affect growth only through their effect on financial development, since the data do not reject the hypothesis that the instrumental variables for financial developments (*e.g*. various combinations of the legal and regulatory determinants of financial development) are uncorrelated with the error term of the equation in King and Levine (1993). These results are robust to changes in 1) the instrumental variables; 2) growth sources to control for; 3) the measures of financial intermediary development and 4) the sample periods.

Levine (1998)[9], focused on the variable of bank development (BANK) and examined its effect on capital accumulation growth and productivity growth as well as economic growth, using the same methodology as Levine (1999). Another important difference with Levine (1999) was that he used legal origins as well as several legal determinants of financial development for the instrumental variables. In fact, a German dummy applied to German-tradition countries has a positive and significant correlation with banking development. The two sets of instruments gave similar results, producing a strong connection between banking development and the growth indicators.

Beck, Levine and Loayza (1999) is another variant that used the same econometric method. They considered the effects of several financial intermediary development indicators on the growth indicators including some variations of productivity growth and private saving rates. They also found a significantly positive causal impact of financial development on real per capita growth and per capita productivity growth, but a more ambiguous effect on physical capital growth per capita, and saving. While there tends to be a positive link between banking development and both capital accumulation growth and private saving rates, these results are not robust: they are sensitive to changes in estimation methods and measures of banking development.

Demirguc-Kunt and Maksimovic (1998) provided a micro-level support for the proposition that financial and legal development facilitate economic growth, using firm-level data from 30 developing and developed countries. They estimated a predicted growth rate if a firm depends on retained earning and short-term credit only, for each firm and each country. Then, they estimated the proportion of firms growing at rates exceeding the predicted rate in each country. This proportion should be associated with institutional difficulties for firms in obtaining long-term finance, and be linked with the level of financial development in each country. Indeed, in the cross-country regressions, the indicator of law enforcement, the stock market turnover and the size of banking have a significant negative correlation with the indicator of dependence on long-term finance. This result implies that firms in countries that have an easier access to external funds, (*e.g*. active stock markets and high confidence on legal compliance) and thus grow faster.

Conclusions

Although in a pure neoclassical framework the financial system is irrelvant to economic growth, in practice an efficient financial system can simultaneously lower the cost of external borrowing, raise the returns to savers, and ensure that savings are allocated in priority to projects that promise the highest returns, all of which have the potential for affecting economic growth rates. And the empirical literature reviewed above shows that there does indeed appear to be a causal link between the level of financial development and the rate of accumulation of capital, or of multifactor productivity. Even though an efficient financial system can (and apparently does) reduce the level of household savings, by easing access to consumer credit, the welfare

[9] Levine (1998) was written after Levine (1999), even though it was published earlier.

implications remain positive, unless there is a significant gap between private and social time discount rates.

The empirical literature also supports the hypothesis that there is a relationship between the legal framework of a country, and the form of its financial system. Broadly speaking, countries with a common-law tradition that support stockholders' rights tend to have a more highly developed and varied financial system. Other countries, whose legal frameworks are based on the continental European tradition, tend to have more bank-based financial systems. The consequences of this for growth and financial stability are explored further in Part III and the Annex.

II. Microeconomic aspects: corporate financing patterns and their implication for firm-level performance

II.1 Type of corporate financing and investment

II.1.1 Introduction

The previous section explored the relationship between the level of development of financial systems in individual countries, and their link with macroeconomic outturns for investment, growth and savings. The subject-matter of this section is the interaction between financial systems, and the performance of individual firms. Firm-level analysis is important because in an imperfectly competitive world comprising newly-created enterprises operating in new technological areas, as well as established firms operating in a predictable environment, the availability of external finance, and the terms on which it can be obtained, can potentially influence the dynamics of growth at the micro level.

In a frictionless world in which the Modigliani-Miller theorem holds, the financing pattern does not matter for a firm's value or its investment decisions. However, in the presence of capital market imperfections resulting from information asymmetries and agency costs, internal finance is often less costly than external finance. Myers and Majluf (1984) stressed that equity raising is very costly since less informed market participants correctly anticipate that managers acting for existing shareholders are willing to issue new shares when they are overvalued. Similar problems can be found in debt finance. Managers maximising the welfare of shareholders (*e.g.* owner managers) have incentives to engage in excessively risky investment projects from the creditors'point of view, which make debt finance more costly by an increase in its premiums (Jensen and Meckling, 1976), which may further attract riskier firms (adverse selection) and thus introduce credit constraints (Stiglitz and Weiss, 1981).

Thus, the availability of internal funds as well as firms' opportunities may be an important determinant for investment. The importance of internal funds for financing investment has been detected in financing patterns in major OECD member countries (Mayer, 1988). But, how important is internal funding as a determinant of capital investment in different groups of firms? Does this show the extent of capital market imperfection? These questions opened a door to a vast empirical literature investigating the relationship between financial constraints and firm-level investment.

II.1.2 Empirical studies: the first-generation research

The seminal paper by Fazzari, Hubbard and Petersen (1988) (hereafter FHP) first examined the role of "financial constraints" and firm's investment behaviour by using firm-level panel data on 427 US manufacturing firms from 1970 to 1984. They group firms into three fixed categories by the level of dividend payout, which is assumed to be a proxy of the financial constraints: low, medium and high dividend payout firms. Then, they estimated investment functions with cash flow and Tobin's Q as explanatory variables in each group. They found significantly larger estimated coefficients of cash flow for the low-dividend-payout firms than the high-dividend-

firms. As long as Q adequately controls for firm's investment opportunities, a sensitivity of investment to cash flow could suggest a rejection of a perfect capital market and importance of the financial constraints.

The correlation of investment with cash flow in "financially-constrained" firms had been confirmed by several studies with different cross-sectional criteria or with different countries' panel data. For example, Hoshi and Kashyap (1991) focused on the affiliation to Japanese industrial groups ("financial keiretsu"), which could, by establishing a close relationship with main banks, mitigate financial constraints and thus lower the responsiveness of investment to cash flow. Schaller (1993) used age and concentration of ownership as a criteria for the Canadian panel data (see Table 1).

II.1.3 Weaknesses of the first-generation research and subsequent improvements

Subsequent research has addressed several problems involved in this empirical method. There are (at least) two important issues. First of all, average Q might be a very poor proxy for controlling for underlying investment opportunities. Theoretically, marginal q, the present value of expected future marginal returns to capital, is a sufficient indicator for representing investment opportunities. If one cannot control for investment opportunities correctly, the responsiveness of investment to cash flow could be due to content of information for firm's profitability. (Another problem is that Tobin's Q, by indicating the firm's financial health, can affect investment by mitigating financial constraints). Second, the classification of firms is *a priori*. These groupings might be imperfect proxies for the extent of financial constraints. In addition, the assumption that only a fixed group of firms are financially constrained during a certain period is analytically convenient but sometimes implausible, since firms can switch between different financial situations, responding to, for example, external shocks.

II.1.3.1 Controlling for investment opportunities

To deal with the problems of controlling for investment opportunities, at least three broad approaches have been adopted. One way to address this issue is to estimate the Euler equation, which is a first-order condition describing the firm's decision for its optimal capital stock. The advantage of the Euler equation is that it avoids using imperfect financial variables as proxies for marginal q. Based on US panel data on manufacturing firms, the frictionless investment model is easily rejected for firms with low-dividend-payouts prior to the estimation period. However, it cannot be rejected for firms with higher dividend payouts (Whited, 1992, Hubbard, Kashyap and Whited, 1995).[10]

Another way to test the relationship is to observe an independent change in internal funds (cash flow), which is unrelated to the firm's investment opportunities.[11] One possible source of such an independent change arises from a variation in tax payments induced by policy changes. Calomiris and Hubbard (1995) use a tax experiment, the Surtax on Undistributed Profits during 1936-37. In perfect capital markets, it would be reasonable for firms to change their dividend payout policies when retained earnings are more heavily taxed than distributed profits. However, "financially constrained" firms with good profits opportunities might choose to pay the undistributed profits

[10] The Euler equations tests, however, have several drawbacks. First, they do not estimate investment behaviour directly, and thus cannot be compared with other reduced form tests. Second, they are sensitive to specifications and tend to have poor small sample properties. Third, as pointed in the literature of consumption (*e.g*. Zeldes), the Euler equation imposes only the period-to-period restriction derived from the first order conditions and may fail to detect the presence of financing constraints if their tightness is approximately constant over time.

[11] Fazzari and Pertersen (1993) focus on the role of working capital, which can be drawn down to mitigate an adverse shock on cash flow and thus on investment. They find a negative response of investment to working capital for the US low dividend payout firms.

tax to keep sufficient retentions for their investment. In fact, 66 of the 273 publicly-traded manufacturing firms in their sample retained more than 40 per cent of their earnings and paid the highest marginal rates of surtax. And their investment was correlated to changes in cash flow after controlling for investment opportunities by Tobin's Q. On the other hand, no sensitivity could be detected for firms with higher dividend payout and lower surtax charges.

More recently, there has been an attempt to construct more plausible proxies for the marginal value of capital. Following Abel and Blanchard (1986), Gilchrist and Himmelberg (1995) construct the expected value of marginal q conditional on observed fundamentals including cash flow ("Fundamental Q"), by estimating a set of VAR forecasting equations. Since cash flow is explicitly included in observed fundamentals, "Fundamental Q" should fully capture the information, if any, about future returns to capital contained in cash flow. Thus, any additional sensitivity of investment to cash flow in their regression models should result from capital market frictions. As predicted, they find no excess sensitivity of investment to cash flow for Commercial Papers (CPs) or bond rating firms, which have easy access to financial markets, but a large responsiveness of investment to cash flow for firms without a bond rating or CP rating. They also confirm that the use of Tobin's Q, compared with their "Fundamental Q", tends to overstate the excessive sensitivity of investment to cash flow, in particularly, for "unconstrained" firms.

In a follow-up paper, Gilchrist and Himmelberg (1998), focus on another identification problem, that a proxy for marginal q can be a good measure of the firm's financial health and thus, affect investment in the presence of capital market imperfections. They introduce financial friction into their model and consider two variables to affect investment, "Fundamental Q" [the expected present value of future marginal productivity of capital (MPKs)] and "Financial Q" (the expected present value of a future financial state variable of the firm) by constructing from the VAR approach. They find that investment is significantly correlated to both measures for the average firm in their sample and detect no sensitiveness of investment to liquidity for bond rating firms but find the liquidity effects for unrated firms, small firms or low-dividend-payout firms.

Cummins *et al*. (1999), by using earning forecasts from securities analysts, construct more direct measures of the fundamentals that represent future profitability.[12] Their surprising result is that internal funds are not correlated to investment spending even for selected firms, for example, those without bond rating or dividend payout, which have been found to be "financially constrained" in other studies.

II.1.3.2 The classification problems

Moving to the issue of a priori grouping of firms,[13] Kaplan and Zingales (1997) question the relevance of the grouping by FHP (1988) and their results. They re-examine 49 firms that are grouped as low-dividend-payout firms from FHP and further divide those firm into five categories, by their own operational classification criteria, based on statements contained in annual reports of these firms. They assumed that a firm does not face "financing constraints" if it can invest more at a given point in time. By using this definition, they find that in 85 per cent of firm years of FHP's sample, the firms are not "financially constrained", since they could have increased their investment, financed by either unused line of credit or cash stocks. They also show that the less "financially constrained" group exhibits a significantly greater investment-cash flow sensitivity than those firms classified as more "financially constrained".

[12] These measures ("real Q") are comparable to marginal q, but constructed by the firm's expected net income derived from the analysts' forecasts.

[13] In order to solve a dynamic misclassification problem, Hu and Schiantarelli (1998) developed a switching regression model of investment, in which the probability of a firm facing financing constraints is endogenously determined.

Kaplan and Zingales (1997) was refuted by the original authors (FHP, 1996). They point out a difficulty in distinguishing the extent of financing constraints in such a small sample. In addition, firms with high cash flow, which are grouped as "not financially constrained" in KZ might have incentives to maintain precautionary cash stocks against the possibility of financing constraints in future. A conclusion is that there is still no perfect operational definition of financing constraints and all of them are subject to misclassification problems.

II.1.3.3 Empirical studies on other OECD countries

There are some studies investigating panel data of countries other than the United States. Table 1 presents a selection. Most of them used reduced form regressions with Tobin's Q, which has the defects mentioned above. In addition, it is difficult to compare results across different countries, since each has different data set and specification. Bond *et al*, (1997) construct firm panel data sets for manufacturing firms in Belgium, France, Germany and the United Kingdom for the period 1978-1989 and estimate a range of investment equations (accelerator, error correction and Euler equation specifications) including additional financial variables (cash flow and profits) by using GMM methods which control for biases due to both correlated effects and lagged dependent variables. Their main aim is to compare results for the same investment model across different countries. They find that financial variables play an important role in France, Germany and the United Kingdom. More robustly, cash flow and profits term are found to be both statistically and quantitatively more significant in the United Kingdom than in other European countries, implying that financial constraints may be more severe in the more market-oriented UK financial system.

II.1.3.4 Financial constraints and R&D investment

A large proportion of the literature in this area has concentrated on analysing the effect of financial variables (cash flow) on fixed capital investment. Another type of investment, which is also affected by asymmetric information and capital market imperfection, is R&D investment. Himmelberg and Pertersen (1992), using panel data for 179 US small firms in high-tech industries, find economically large and statistically significant correlation between R&D investment and cash flow in several econometric specifications. Hall (1992) reports a statistically significant elasticity of profits to R&D investment for a sample of much larger firms (1247 US manufacturing firms from 1976 to 1987).

In a more recent paper, Hall *et al*. (1998) construct more comparable panel data of firms in the high-tech sectors in the United States, Japan and France. Using a VAR methodology, they test for causal relationship between liquidity variables (sales and cash flow) and investment variables (capital investment and R&D), and find that both capital investment and R&D are more sensitive to cash flow and sales in the United States than in Japan and France. This result is quite comparable to that of Bond *et al*. (1997) and hints that financial constraints might be more severe in the United States or the United Kingdom, with a market-based financial system.

The general conclusion that can be drawn from the literature received above is that the actual level of investment (in physical capital or R&D) undertaken by a firm is influenced, among many other things, by their cashflow. This implies that investment can be finance-constrained, to a greater or lesser extent. It is interesting and suggestive that financial constraints, when they bite, bite harder in economies characterised by market-oriented financial systems, such as the United States and the United Kingdom. This could imply either that the marginal cost of capital is excessive in market-oriented economies, or that for some firms at least, their level of investment is excessive in less market-oriented economies. The next section explores this further.

II. The disciplinary role of financing patterns on firms

II.2.1 Introduction

For financially constrained firms, internal funds are important to finance their investment and improve their performance. However, are they also important for much less financially constrained firms? The "free cash flow" theory, proposed by Jensen (1986) stresses that excessive internal funds tend to induce inefficient over-investment. This implies that internal cash flow is a double-edged weapon for a firm.

When firms have more internally generated funds than positive net present value investment opportunities, these funds might be invested in negative net present value projects. Managers have both incentives and opportunities to invest in wasteful projects, as they could be rewarded for expanding the turnover, or the market share of the firm at the expense of the shareholders.

In this context, financial pressure generated from debt financing might play an important role in motivating organisational efficiency and growth. Managers who commit to debt financing have strong incentives to maintain a high level of efficiency, in order to avoid the consequences of bankruptcy. Bankruptcy is a serious threat for managers, since they lose their jobs, associated quasi-rents and reputation.[14] Thus, for firms with more internally generated funds than investment opportunities, high levels of debt or high interest rate payments can act to discipline managers and have a positive effect on the value of the firm.

II.2.2 Empirical studies

The literature on the relationship between financial pressures and firm's performance is relatively scarce. Among them, Nickell and Nicolitsas (1995, 1999), using panel data for 670 manufacturing firms from 1973 to 1986, find that interest payments relative to cash flow have a small positive impact on capital productivity of the firms in their sample. In their subsequent paper, updating their data [580 UK manufacturing firms from 1982 to 1994, Nickell, Nicolitsas, Dryden (1997)], the same indicator of "financial pressures" (interest payments normalised on cash flow) is found to be positively related to future productivity growth (TFP).

Among studies using the US panel data, Lang, Ofek and Stultz (1996) (1970-89, 142 firms with one billion dollars or more in sales in 1989 dollars) found a negative relation between leverage and future growth using data at the firm level. Leverage was defined as the ratio of debt to total assets in book value term, and firm growth as the growth rate of real capital expenditure and the growth rate of employees. Moreover, this negative relation between leverage and growth held for low Tobin's q ($q<1$), but not for high-q ($q>1$) firms or firms in high-q industries. Thus, this result is consistent with the "free cash flow" theory that leverage discourages managers of firms with poor investment opportunities from over-investing.

McConnell and Servaes (1995), using the US panel data (during the years of 1976, 1986, 1988), divide their sample firms into "high-growth" firms with many profitable growth opportunities and "low-growth" firms with few, by using the three types of criteria, the price-to-operating-earning ratio (P/E), sales growth forecasts, and five-year historical average growth rate in sales. In each case, corporate value (Tobin's Q) is negatively correlated with leverage (the estimated market value of long-term debt divided by the replacement value of assets) for "high-growth" firms, but positively correlated for "low-growth" firms. Their result also support the "free cash flow" theory.

Some authors focused on leveraged buyouts (LBOs) or management buyouts (MBOs), which involved a large level of debt financing and were very active in the late 1980s in the United States. Lichenberg and Siegel (1990) (US, 81-86, 12895 manufacturing plants) find that LBOs,

[14] On the other hand, limited liability makes bankruptcy a lesser threat to the owners of the firm.

and in particular, MBOs that occurred during 1983–1986, had a strong positive impact on total factor productivity in the pre and post-buyout years. Plant productivity increased from 2 per cent above the industrial average in the three pre-buyout years to 8.3 per cent above the industrial average in the three post-buyout years. Smith (1990), focusing on 58 cases of management buyouts of public corporations from 1977 to 1986, shows that operating returns (gross cash flows per worker or per asset) increased significantly from the year before to the year after.

II.3 The role of internal capital markets

II.3.1 Introduction and theoretical perspectives

The last two sections, have explored the double-edged role of cash flow, which is "cheap" capital because of zero agency costs, but which potentially promotes over-investment when investment opportunities are few. The double-edged nature of cash flow is also related to a question of how a firm can efficiently allocate its funds within the firm. In the case of a diversified conglomerate, there has been extensive discussions on whether corporate headquarters, by forming "internal capital markets", can allocate capital across divisions efficiently or not (for a survey, see Bolton and Scharfstein, 1998).

One view stresses the efficiency of internal capital markets. Corporate headquarters has information advantages over outside financiers, and agency problems are much more mitigated. Thus, these divisions would be less financially constrained than otherwise. In addition, because corporate headquarters own and control assets of the division, they have greater monitoring incentives than external capital markets, since they will get all or most of the rents from the improvement of the division's performance (Gertner *et al*., 1994). Relying on information advantages, headquarters could take scarce resources from capital-rich sections with poor investment opportunities and give them to capital-poor divisions with high investment opportunities.

More recently, Stein (1997) presents a theoretical model in which headquarters, even with incentives to engage in empire-building over-investment, nonetheless, efficiently allocate capital across divisions given the overall capital budget. "Valuable empires", as well as "large empires", also increase their private benefits through efficient allocation, holding the size of the firm fixed.

The opposite view stresses the inefficiency of internal capital markets. Just as a manager who has discretionary control over a large cash flow will tend to misallocate investment, so might corporate headquarters who have discretion in the allocation of capital in internal capital markets will tend to misallocate the distribution of their funds. They might engage in inefficient cross-subsidisation, spending relatively too much in some divisions and too little in others, for example.

Scahrfstein and Stein (1997) provide a theoretical explanation for the systematic inefficiency associated with cross-subsidies in internal capital markets and stress that conglomerates practice a kind of "socialism" in capital budgeting, namely, under-investing in divisions with relatively good investment opportunities and over-investing in divisions with relatively poor investment opportunities. In their model, the marginal return to productive activity is lower in divisions with poor investment opportunities, leading their managers to spend more time trying to capture corporate rents and private benefits for themselves (rent-seeking behaviours). Headquarters try to persuade these managers not to rent-seek by allocating them an excessive fund. Headquarters prefer to bribe managers by misallocating capital rather than giving up some of their own private benefits. In this model, contrary to Stein (1997), capital misallocation is related to agency problems at the headquarters level: corporate headquarters can appropriate rents that arise because of agency problems between headquarters and outside investors. Rajan *et al*., (1997) present a similar model for inefficient cross-subsidies, which however are intended to correct biased incentives for divisional managers to choose investments that enhance their power more directly rather than those that have positive spill-over to other divisions.

II.3.2 Empirical evidence

Whether internal capital markets perform well or not is thus an empirical question which has been extensive in the case of US firms. One interesting question is how markets perceive the formation of internal capital markets by diversified conglomerates. The existing research find that markets rewarded diversification in the 1960s-70s, but have penalised it over the past two decades.

Schipper and Thompson (1983) find significant positive abnormal returns associated with the announcement of acquisition programs by diversified firms in the 1960s and 1970s. Matsusaka (1993) analyse the announcement effects of mergers undertaken in the three years of 1968, 1971 and 1974 and find that diversified bidders earned positive abnormal returns. On the other hand, Servaes (1996) find value loss from diversification even in the 1960s but, much lesser extent, in the 1970s.

However, by using a sample of the past two decades various empirical evidence supports the view that corporate diversification is value-reducing. For example, diversified firms apparently trade at lower stock values than comparable portfolios of specialised firms. Lang and Stulz (1994) find that Tobin's Q and firm diversification are negatively related throughout the 1980s. Berger and Ofek (1995) find that the average value loss from diversification amounts to 13 to 15 per cent during 1986 -1991, compared with industry-adjusted stand-alone values.

In addition, diversified conglomerates that were assembled during the 1960s and the 1970s were dismantled in takeovers and related corporate restructurings of the 1980s (Comment and Jarrell, 1995). Moreover, acquisitions of companies unrelated to the bidder's core business were much more likely to be divested than related acquisitions (Kaplan and Weisbach, 1992). Finally, non-core businesses, which were divested following hostile takeovers, were often sold to firms in the same line of business (Bhagat *et al*., 1990). Thus, during the 1980s, corporate raiders systematically dismantled diversified firms with the expectation that divisions would be more efficiently run as stand-alone firms, which argues for corporate focus.

The significant difference in market evaluation of American corporate diversification between the 1960s-70s and the 1980s-90s calls for an explanation? Hubbard and Palia (1999) provide one explanation for it, stressing the existence of less developed capital markets, in the earlier period and, especially in the 1960s. By examining a sample of 392 acquisitions that occurred during the period from 1961 through 1970, they find:

> Diversifying acquisitions generally earned positive abnormal returns.
>
> Highest returns were earned when "financially unconstrained" buyers (which have high-dividend payout or high investment rate) acquired "constrained" target firms.
>
> Bidders generally retained the management of the targeted firms, suggesting that the bidder, while getting company-specific information from the incumbent management, provided capital budgeting expertise.

These results mean that the external capital markets assessed information benefits from the formation of the internal capital markets. As external capital markets developed, this informational advantage likely became less important.

In fact, recent studies on corporate diversification find supporting evidence of inefficient cross-subsidies via internal capital markets. Lamont (1997) shows that the sharp drop in oil prices in 1986 led diversified oil companies to reduce investments in their non-oil divisions. This implies that there is cross-subsidisation across divisions in these conglomerates. Shin and Stulz (1998), by using a much larger sample of firms operating in multiple business segments, also show some

evidence of cross-subsidisation in diversified conglomerates. They find that capital expenditures of small segments are positively correlated to the cash flow of other segments, while this is not the case for large segments. They also find that this cross-subsidisation does not depend on the investment opportunities of the subsidised firms and is thus inefficient, since a reduction in the cash flow of other segments does not reduce the capital expenditure of low-Q segments more than they reduce the capital expenditures of high-Q segments. This evidence is strengthened by the finding that the diversification discount is related to the sum of capital expenditures made by a firm in segments with low Tobin's Q (Berger and Ofek, 1995).

In order to test the empirical implications of a theoretical model of Scharfstein and Stein (1997), Scharfstein (1998) examines capital allocation in sample of 165 US diversified conglomerates in 1979. He find that divisions in high-Q manufacturing industries tend to invest less than their stand-alone industry peers, while divisions in low-Q manufacturing industries tend to invest more than their stand-alone industry peers. This effect is more pronounced for the relatively small divisions of conglomerates. He also shows that the observed differences between conglomerates and stand-alones is less pronounced in firms where management has a large equity stake, implying that conglomerate's investment behaviour stems, at least in part, from agency problems between headquarters and outside investors, stressed by Scharfstein and Stein (1996). Although Scharfstein (1998) does not test the existence of cross-subsidisation directly, Rajan *et al*., (1997), by using a panel of US diversified firms during the 1979-1993 period, find that capital misallocation of this type is likely to be more pronounced in firms with very different investment opportunities across divisions.

II.3.3 Conclusions

In summary, the efficiency of internal capital markets might depend on several external factors. Among them, the development of external capital markets might be an important one, at least as seen in the case of the United States. In fact, conglomerates in some form or other have also been seen in Asia, Latin America and much of Western Europe for a long time (Rajan and Zingales, 1998*b*). For example, Khanna and Palepu (1997) find that large diversified groups in India outperformed smaller unaffiliated firms between 1989 and 1995.[15] Fauver, Houston and Naranjo (1999), by examining conglomerates in 35 countries in 1998, find that the relative value of diversification in a country is correlated to the country's income level. There exists either a diversification premium or no discount in low-income countries, while there is a significant diversification discount in high-income countries. These findings reinforce the potential trade-offs between the efficiency of conglomerates and the development of capital markets.[16]

Internal funds or internal capital markets have double-edged effects. Under severe financial constraints due to capital market imperfections, the availability of internal funds could promote "necessary" investments (positive NPV projects) and internal capital markets might help allocate funds to divisions that could not get them externally because of these imperfections. However, when internal funds are excessively abundant or there are fewer capital market imperfections

[15] In their recent paper, Khanna and Palepu (1999) find that accounting and stock market (Tobin's Q) measures of performance of affiliates of diversified Indian business groups initially decline with group diversification and subsequently increase once group diversification exceeds a certain level. In particular, affiliates of the most diversified business groups outperform unaffiliated firms.

[16] Lins and Servaes (1999*a*) examine the effect of diversification for large samples of firms in Germany, Japan and The United Kingdom. They find a significant diversification discount of 15 per cent in the United Kingdom, 10 per cent in Japan, but no significant discount in Germany. For Japan, only firms that have strong relationships with an industrial group ("Keiretsu") have a diversification effect. Lins and Servaes (1999 b) also investigate a sample of large number of firms from seven emerging markets (Hong Kong, India, Indonesia, Malaysia, Singapore, Korea and Thailand). They find a diversification discount of about 8 per cent in these markets and approximately 15 per cent for firms that are member of industrial groups. These results are also consistent with a possible trade-offs between the efficiency of diversification and the development of capital markets (see also the Annex).

thanks to the development of the financial system, the availability of internal funds or internal capital markets could well lead to unproductive investment and resource allocation. The double-edged effects of internal funds and internal capital markets is discussed further in the context of the comparative analysis of financial systems.

III. COMPARATIVE FINANCIAL SYSTEMS AND THEIR IMPLICATIONS FOR GROWTH: LESSONS FROM ASIAN CRISES AND THE SUCCESS OF THE US VENTURE CAPITAL MARKET

III.1 Introduction

The previous sections surveyed a wide-ranging literature concerning the relationship between financial development and growth, but few have investigated how different types of financial development can affect economic growth. Among them, Levine and Zeros (1998) stressed the complementary role of banking and stock market for economic growth. Bond et al. (1997) and Hall et al. (1998) find a systematic international difference in the sensitivity of investment to cash flow, which might result from a difference in financial systems.

This section first discusses two prototypes of financial systems, the "relationship-based" system and the "arm's length system" and their advantages and disadvantages, mainly based on several recent studies (Allen and Gale, 1999, Berglof, 1995, Hellmann and Murdock, 1998, Rajan and Zingales 1998b, 1999a, b, and Thakor, 1996).[17] The section then explores how pros and cons in their financial systems could explain a marked difference in recent economic performance between Asian countries and the United States.

III.2 Comparative analysis of financial systems

A financial system has two main goals: to channel resources to the most productive uses (allocation function) and to ensure an adequate return flow to financiers (governance functions). Allocation functions have already been reviewed in Section I. However, when each financial system is examined, the greatest difference lies in the governance function. This function characterises the relationship between financiers and clients, and thus they influence allocation functions including 1) easing financial constraints, 2) re-negotiation, 3) risk sharing, and 4) information aggregation for capital allocation.

III.2.1 Relationship-based financial system

Whatever the system, the providers of financial capital must have mechanisms to monitor the users of their capital, and intervene, if necessary, due to agency costs associated with financial transactions. The relationship-based system ensures a return to the financier by giving him some control power over the firm being financed. Such power can arise from being a large shareholder or a major lender to the firm. Prominent examples are the Japanese main bank system (Aoki and Patrick, 1994) and the German house bank system (Edwards and Fischer, 1993). Monitoring functions could be integrated in a single bank (as a "delegated monitor" in the sense of Diamond, 1984)[18], which is involved in all three monitoring stages: the ex-ante selection of clients and investment projects, the monitoring of the projects on an ongoing basis, and intervention in case of poor management performance.

The relationship between financiers and firms in a relationship-oriented system is long term and supported by implicit self-enforcement contracts or reputation concerns. The relationship between banks and firms is only credible if both sides have developed a good reputation over time

[17] The terms of "bank-based" or "market-based" are often used to describe two different financial systems. This definition seems to be based on corporate financing pattern in each system, however, internal funds are the most important financing source in most of major countries. In addition, Germany, as a typical example of bank-based system, has a relatively small share of bank lending in corporate financing sources (Mayer (1988)). Thus, the financing pattern might not well distinguish between two financial systems.

[18] Diamond (1984) stresses the bank's role of monitoring delegated from lenders (depositors). However, his argument can be extended to the situation in which a single bank plays the role of a delegated monitor among the syndication of banks and other investors.

("reputation capital", see Diamond, 1989, 1991; Hellman and Murdock, 1998). A repeated and long-term relationship can well reduce informational asymmetries and thus agency costs.

However, this type of relationship needs quasi rents that can be shared by the two parties and fewer outside opportunities for them. Thus, this relationship is consistent with a less competitive environment including some entry barriers. Moreover, the relationship-based system has less disclosure requirements, since only a single financier need acquire firm's information and thus, public information is less important. Informational advantage and related rents ("information rents") give a good incentive for integrating monitoring functions and maintaining a long-term relationship.

III.2.2 Arm's length financial system

The prominent example of an arm's length system is the US financial system. Under this system, a large number of liquid and thick financial markets (*e.g.* stock markets and corporate bond markets) provide wide-ranging financial instruments required by different economic agents. Monitoring functions are provided by different specialised institutions such as venture capital, commercial banks, investment banks and rating agencies. They provide different monitoring services for different financial products and at the different development stages of firms.

An arm's length relationship is akin to spot transactions, more short-term and less control-oriented. Financiers are protected only by explicit contracts. Thus, this system relies much more on legal enforcement. This means that financiers have strong incentives to intervene only at the stage of liquidation. To facilitate the relationship, financial markets need to be competitive, liquid and thick. In addition, public information and disclosure requirements are more important and necessary to ensure legal enforcement and achieve allocation efficiency.

In the real world, however, such a dichotomy of financial systems is much too simple and in practice the two types of financial systems coexist in the same country, although their relative importance is different across countries. In Japan, capital markets are much more developed than in Germany or France, although all three countries are basically considered to have relationship based financial systems (see Annex). In addition, relationship based financing prevails even in the United States for small businesses (Petersen and Rajan, 1994 and Berger and Udell, 1995). Given these differences in the characteristics of the financier-firm relationship, both systems have advantages and disadvantages. Several dimensions are examined below.

III.2.3 Legal and institutional infrastructure

A market-based system can work only when the quality of legal enforcement is very high and property rights are well defined. Thus, developing countries or transition economies, where legal and institutional infrastructure are significantly underdeveloped, have no alternative but to adopt relationship-based financial system, with banks as main financiers (Rajan and Zingales, 1998*b*). This prediction is also consistent with the observation that French civil law countries have both the weakest investor protection and the least developed capital markets, especially as compared to common law countries (LLSV, 1997; see also the Annex to this document).

III.2.4 Reduction in agency costs and free cash-flow problems

Relationship-based systems are very good at mitigating agency costs and/or economising monitoring costs, which could lower the cost of capital (*e.g.* Hoshi *et al.* , 1991). This system is in particular beneficial for young and small firms whose fund-raising is constrained by capital

market imperfections.[19] Arm's length systems make fund-raising very costly for some firms with severe information problems (*e.g*. Myers and Majluf, 1984).

When a relationship-based system reduces agency costs significantly, the funds supplied by this relationship are much closer to "internal funds" for firms. As we have seen in Section 2, this has a double-edged effect. If these "cheap" funds are provided beyond the level of firm's investment opportunities, they are easily misused for "*ex-post*"unprofitable projects. By contrast, there exists strong mechanism such as take-overs to correct the misuse of funds in arm's length systems.

III.2.5 Re-negotiation and soft -budget constraint problems

A relationship-based system, by facilitating re-negotiation of the contracts, can be beneficial for firms, especially those experiencing liquidity problems. But, ex-post discipline on clients is weaker than in a market-based system, since financiers incurring sunk monitoring costs have an incentive to extend their loans to unprofitable projects, leading to "soft-budget constraints" (Dewatripont and Maskin, 1995). Arm's length systems, with no commitment to long-term monitoring, can credibly stop unprofitable projects but make re-negotiation more difficult due to co-ordination failures among many different investors (Berglof and von Thadden, 1994 and Bolton and Scharfstein, 1996).

III.2.6 Risk-sharing: Cross-sectional risk sharing vs. inter-temporal risk sharing

As seen in Section I, one of the major functions of financial markets is to provide opportunities for risk sharing among different individuals. Markets allow them to diversify their portfolios, hedge idiosyncratic risks and adjust the riskness of portfolios according to their levels of risk-tolerance. Thus, under a market system, different individuals are exchanging risks at a given point in time. This can be termed "cross-sectional risk-sharing".

If markets were complete in the Arrow-Debreu sense, it would be possible to obtain insurance against all risks, but in the real world, participation and available markets are incomplete. One form of risk-sharing that is not available in a market system, is "intergenerational risk sharing". If one generation wants to liquidate its holdings of assets, another generation must be willing to buy. However, in a market system, different generations participate in the market at different points in time and thus participation is incomplete. This difficulty in matching may make the price at which this exchange takes place very volatile and this price variation may induce large consumption risks. In this case, an intermediary can provide insurance against these swings in asset prices by averaging gains and losses over time (see, for example, Qi, 1994, Fulghieri and Rovelli, 1998).

Another example is "inter-temporal risk sharing". Consider external shocks, which can affect the whole economy (*e.g*. oils shocks, financial crises). These risks cannot be diversified away by holding a large portfolio with many stocks. These nondiversifiable risks can be reduced by a relation-based financial system (*e.g*. banks committed to long-term loans). Allen and Gale (1997), in the context of an overlapping generation model, contrast a market economy, in which individuals invest directly in a safe asset and a risky asset, with an intermediated economy, in which a long-lived intermediary holds all the assets and offers deposit contracts to each generation. In their model, asset accumulation plays an important role. An intermediary can pool inter-temporal risks by using the accumulation of large reserves of the safe assets as a way of building up in good times and drawing down in bad times. On the other hand, individuals in a market economy do not value the role of safe assets in contributing to future generations' welfare, thus, have no safe assets.

[19] If these firms have a large degree of uncertainty, it is venture capital rather than banks that provide financial backing.

III.2.7 Diversity of opinions and allocation efficiency

The merits of a relationship-based system rest mainly on its monitoring and control mechanism. The importance of the governance role implicitly assumes that financiers know very well how firms should be run. In such a case, a consensus on the firm's opportunities among financiers can be reached easily and an intermediary can play the role of a delegated monitor (Diamond, 1984).

However, when a firm belongs to an entirely new industry, or its technology is rapidly changing, there might be a lack of common knowledge about the optimal strategy of the firm, including by its manager. There would exist a diversity of opinion even among well informed financiers. Thus, placing a firm in the hands of a manager may be the only way to determine whether a particular strategy of management will be successful. Governance functions by financiers would be less important and co-ordination failures among financiers prevent them from reaching a consensus and delegating their monitoring role to a particular institution.

Stock markets, however, are very good at dealing with the diversity of opinion, since stock prices aggregate diverse information obtained by investors. This allows stock prices to reflect the true value of the firm given current management policies and thus provide efficient signals for the allocation of resources (Grossman, 1976); Grossman and Stiglitz, 1980, and Diamond and Verrecchia 1981).

As a result, an arm's length system especially characterised by stock markets work relatively well in the development of new industries or technologies, when there is little consensus on how a firm should be run. On the other hand, relationship-based system is good at traditional industries, in which production technology is relatively stable and well-understood.

This theoretical pediction has been consistent with comparative and historical episodes stressed by Allen (1993) and Allen and Gale (1999). In the second half on the nineteenth century, the stock market (the London Stock Exchange) was an important financial source for industry, such as the railways.[20] Similarly, the New York Stock Exchange played a crucial role in the development of the major industries such as the automobile, electronics, computer and recently IT industries in the 20th century. In nineteenth century, Germany experienced a rapid industrial development, but the technologies were not new. The same has been true for Japanese success in automobile and electronics industries in the 1970-1980s.

III.3 Lessons from the Asian crisis

III.3.1 How can the analysis of comparative financial system explain the onset of the Asian crisis?

Does the analysis of comparative financial systems above help explain the onset of the Asian crisis? Rajan and Zingales (1998*b*) stressed the free cash flow problems in Asian countries. They contrast a relationship-based system with an arm's length system in two dimensions, legal infrastructure and relative capital abundance. In Asian countries, where the quality of legally enforceable contracts is relatively low, a relation-based system is preferred and has been dominating.[21] Another dimension is capital availability relative to investment opportunities. As noted above, in a situation of capital scarcity, a reduction in agency costs and financial constraints

[20] The industrial revolution of the late 18th and early 19th centuries was led by industries such as textiles in which there was a large number of small firms. They were mainly financed by an arms-length type of banking (see Baliga and Polack, 1995).

[21] Among Asian countries that experienced financial crises, Korea, Indonesia and Thailand have relationship based financial systems. On the other hand, Hong-Kong, Malaysia and Singapore have more arm's length oriented financial systems, since their stock markets and legal infrastructure have been well developed. Seethe Annex to this document.

by relationship-based finance can promote "right" investments with positive net present values. However, when there is abundant capital seeking few profitable opportunities, free cash-flow problems might arise. In this case, an arm's length system, where price signals help to guide "right" investment, might do better than a relationship-based system.

In this context, massive short-term capital inflows to Asian countries, associated with their financial liberalisation and international portfolio diversification motives by other countries, had made their financial system very fragile. Before the onset of financial liberalisation, investment opportunities might well have exceeded the availability of capital, and relationship-based finance worked well. However, in conditions of substantial capital abundance because of large capital inflows, and low legal contractability, neither system could work effectively. Thus, the allocation of capital might easily become sub-optimal.

Table 2 shows capital inflows and outflows in five Asian countries (Indonesia, Korea, Malaysia and Thailand), over the past decade (Institute of International Finance, 1999). Private capital inflows almost tripled between 1992 and 1996. This large increase cannot be explained by an improvement in investment opportunities in these countries. The magnitude of massive capital flows may well support the free cash-flow hypothesis in these countries. In particular, commercial bank lending played a main role on large inflows and outflows of capital.

In addition, the relationship based system became much more fragile, since the suppliers of funds to these countries were motivated by the logic of an arm's length finance system. Their short-term oriented funds to Asian banking sectors were not compatible with a long-term bank-customer relationship in those countries. Indeed, once funds were drawn out from these countries, the relationship-based financial system could easily collapse, and did so.

In this framework, the policy implications for Asian countries are relatively simple. In the short run, they can restrict the short-term capital inflows which give rise to excessive capital abundance and make intermediaries more fragile to liquidity problems. In addition, some controls on short-term capital outflows can be understood as a similar function of "suspension of convertibility" comparable to the case of "bank runs". In the long term, they can improve their legal contractability so that a market-based system is able to coexist.

III.3.2 Which system can deal with crises better?

The Asian crisis is well-understood as one variant of a banking crisis, but which was exacerbated by currency crises ("twin crises", Kaminsky and Reinhart, 1999). Given the large negative impact of these crises on the economies of Asian countries and Japan, it is natural to ask whether arm's length systems are more immune to financial crises and cope better with them when they occur.

In a market-based system, households have a relatively large proportion of shares in their portfolios. This means that households bear major losses in a stock market crash, and firms face greater financial constraints, due to a loss in their net worth. However, the fundamental functions of stock markets might be less affected by the crash, and resume normal working afterwards.

In the case of relationship-based systems, a large loss would be initially concentrated on banks. Deposits owned by households are protected explicitly or implicitly by the government, and direct negative effects on households would probably be much smaller. Banks can accommodate relatively small shocks and play a role of inter-temporal risk pooling. However, once a large part of their assets become non-performing due to crises, both the allocation and governance functions of the financial system would be paralysed, and no alternative institutions performs either

function, since all functions are concentrated in banks in a relationship-based system.[22] Thus, the normalisation of the financial system depends on how fast the banking sector can be restructured, and in practice its speed is not very fast, due to the forbearance policies of authorities (*e.g.* Boot and Thakor, 1993), and other reasons, according to past experiences, especially the recent experience in Japan (Hutchison and McDill, 1999).

There is also another mechanism that slows down the restructuring process in a relationship-based system. Once a financial crisis occurs, many investment projects are found to be unprofitable. Large conglomerates and large banks, in order to recoup their monitoring costs, have little incentive to stop unprofitable projects, and thus bad loans accumulate further (see the section of "re-negotiation and the soft-budget constraints problem"). The deterioration in their assets further encourages risk-taking behaviour by the banks.

In summary, in an arm's length system, the negative effect of a stock market crash is widely distributed especially among households, but the functions of financial system might be less affected. On the other hand, the initial costs of banking crises are concentrated disproportionately on banks, and, the malfunction of the financial system would last much longer, and this would provoke lingering negative effects on the whole economy.

III.4 Venture capital as a hybrid financial system: The US experience

III.4.1 Introduction

In contrast to the stagnant economic performance in Asian countries including Japan due to financial crises, the United States has shown a remarkable economic performance over the decade. Strong economic growth combined with booming stock markets is related to the fast-growing IT industries. Why have these new industries been disproportionately developed in the United States? There exist many factors, but, among them, the US capital markets have played an important role since, as noted above, a stock market based system is better for financing new industries or new technologies, where opinions of investors differ.

Venture capital industries have been the most developed in the United States.[23] They specialise in financing high-risk, but potentially high reward projects, and have channelled funds to present-day companies, such as Apple Computer, Microsoft, Netscape and others at the time of their start-ups. Moreover, about 60 per cent of funds are provided to high-tech related industries like software services (19.7 per cent), computer hardware & systems (4.7 per cent), telephone & data communication (10.3 per cent), biotechnology (5.3 per cent), and medical & health care related (14.2 per cent)(VC Year Book, 1995).[24]

Some new studies consider how venture capital stimulates innovation or start-ups. Kortum and Lerner (1998) examine the impact of the provision of venture capital funds on the rate of patenting for twenty US manufacturing industries over a three decade period and find a 5-18 per cent increase in the rate of patents by venture disbursements. In addition, Hellmann and Puri (1998) find that using a sample of 173 high-tech oriented start-ups located in Silicon Valley, venture-backed firms can significantly reduce the time taken to bring their products to market.

---

[22] The Economist (23 October, 1999) cites the Chairman of the FED, Mr. Greenspan, as stressing the importance of a diversified financial system, which helps to cushion an economy in times of stress (see, pp. 118).

[23] The amount of venture capital raised in 1996 exceeded 10 trillion dollars in the United States, while a much smaller amount was raised in the United Kingdom (3776), France (1078), and Germany (908) (figures in millions of dollars) (Venture One, 1997, European Venture Capital Association Yearbook, 1997.)

[24] A common misperception is that venture capital funds only high technology companies. Low-tech companies also received significant amounts of venture capital money in the United States.

Aoki (1999) emphasises another important aspect of the venture capitalist as a catalyst of technological innovation. Entrepreneurial start-up firms in the Silicon Valley specialise in the development of innovative products (niche markets) that may constitute useful modules in the evolving industrial framework. In a highly uncertain and competitive technological and market environment, entrepreneurial firms need to continually process and share general information associated with the evolving industrial frame. But they also need to integrate and encapsulate specific information crucial to their own module-product to retain competitiveness. These dual requirements may result in the intense information exchanges and sharing across firms clustering in Silicon Valley and venture capitalists play an important role as a mediator of these informational flows and sharing.

This section is not intended to provide an extensive overview of venture capital, but, to examine the role of venture capital from the viewpoint of comparative financial systems. The main point is that venture capital is a variant of relationship-based financing (*e.g*. Gompers, 1998), but one which strongly depends on a well-functioning arm's length financial system (*e.g*. Black and Gilson, 1998). This implies that venture capital is a well-designed combination of a relationship-based system and an arm's length one, in other words, a hybrid system. The material in this part is based on especially, Barry (1994), Berlin (1998), Fenn, Liang and Prowse (1995), Gompers (1998), Gompers and Lerner (1999) and Sahlman (1990).

III.4.2 Agency costs and control mechanisms

Venture capitalists are professional investors who raise money from third parties (*e.g*. wealthy individuals and institutional investors) to invest in promoting start-up companies. How different are start-ups from other companies? Start-ups or young small firms, who have not yet established a reputation in capital markets, might be the most severely affected by agency conflicts associated with informational asymmetries between borrowers and lenders. In particular, adverse selection problems could lead to a credit rationing in a sense of Stiglitz and Weiss (1981). Thus, typical start-ups do not involve much finance, but often use their internal funds, borrowing from family and friends or sources of personal finance. But, when they do not have sufficient funds to finance projects themselves, they must seek outside financing and venture capital could alleviate the financial constraints faced by these companies.

To mitigate agency problems related to information asymmetries (*e.g*. adverse selection and moral hazard), relationship-based financing can do better since it can provide a good incentive for screening, monitoring and controlling borrowers. However, banks are unlikely to lend their money to companies which lack substantial tangible assets and have a large degree of uncertainty about their future. They might face many years of negative earnings and are unable to make interest payments or meet principal repayments.

In this sense, venture capital has many unique control mechanisms, as an active intermediary to providing strong and close monitoring mechanisms (Gompers, 1998 and Sahlman, 1990). A typical venture capital is a limited partnership run by general partners who are experienced at bringing up start-ups firms and have good knowledge of their portfolio company's or related industries. Hence, with this expertise, they can provide management assistance to the start-ups, for example, by recruiting management and technical personnel they need. This means that a venture capitalist is a more informed investor than other intermediaries.

Venture capitals have strong incentives to monitor the firm, stemming from their equity holdings in the firm that they finance, sharing in both upside and downside risks. In addition, they usually sit on the boards of directors, having effective control rights to appoint or remove the managers or design their compensation packages. However, the most important control mechanism that a venture capitalist employs comes from the staged timing of capital infusion (Gompers, 1995, Sahlman, 1990). The venture capitalist does not invest in one go. Instead, funds are always

provided in stages, and the entrepreneur receives only enough funding to reach the next stage. By reassessing the prospect of the firm's projects periodically, venture capitalists can maintain their option to terminate funding, thus imposing a credible threat and discipline on the portfolio firm. Thus, staged capital infusion prevents soft-budget-constraint problems, which are typically pronounced in other types of relationship-based financing. This kind of discipline is also provided by the syndication of venture capital investments, which may not only allow venture capitalists to diversify away idiosyncratic risks, but also to facilitate multiple checks by venture capitalists in their common portfolio firm (Lerner, 1994).

Another important control mechanism is the use of convertible securities as a contractual arrangement between a venture capital and a portfolio firm. A venture capitalist usually receives convertible preferred stock. In many ways, preferred stock is more like debt than equity and can play the same disciplinary role of debt. It requires the firm to make fixed payments to the stock's holder and has a fixed liquidation value per share. And the promised payments can be delayed, but must be made before any common stock holder gets dividend payments.

III.4.1 Exit mechanisms

All these unique control mechanisms can reduce the agency costs associated with financing start-ups or young companies, and significantly improve resource allocation process. However, the most important concern for a venture capitalist is an exit strategy, namely, how they can successfully cash in their investments. There are three mechanisms, 1) acquisition by another firm (private sale), 2) share repurchase by the portfolio company, and most importantly, 3) issuing stocks via an initial public offering (IPO). In the case of the United States, successful venture capital investments are often realised by making an IPO in the NASDAQ, the best known of the second-tier markets for trades in young and innovative companies. In the United States venture capital market, the portfolio firm that goes public generates most of the returns (70-80 per cent in the United States).

The financial challenges to start-ups are their agency costs and high risks. Agency costs can be reduced by various control mechanisms by venture capitalists. These mechanisms are partly similar to those of main banks in Japan, but staged financing in particular appears to give more control power to venture capitalists. High risks associated with these companies can be diversified only by a well-developed arm's length system ("cross-sectional" risk sharing), by facilitating the use of IPOs as an exit route.

Another issue is, who provides funds to venture capitalists. US pension funds are now of overwhelming importance (about 38 per cent in 1996) as a capital provider to venture capital industries, after pension fund investment in venture capital was permitted in 1979, provided that it did not endanger the entire portfolio. These and other regulatory changes led to a large increase in the flow of funds into venture capital. Pension funds have a strong demand for high-risk, high-return investment as a part of their portfolios. The active role of pension funds is also dependent on the development of stock markets, which allows them to diversify their portfolios.

Hence, fund raising, interim-control and exit mechanisms are equally important and complementary for venture capital finance. In fact, the venture capitalists control mechanisms by reducing informational problems, can facilitate an efficient exit via IPOs and mitigate underpricing problems at the time of IPOs due to adverse selection (Akerlof, 1970). For example, Megginson and Weiss (1991) find that venture capital-backed IPOs are less under-priced than non-venture-backed IPOs. Barry *et al*. (1990) find that the degree of under-pricing is negatively related to the amount of venture capital ownership. In addition, a successful exit by an IPO can establish a venture capitalist reputation ("reputation capital"), and further attract investors and the organising of new funds. When the IPOs are "hot", new funds flow into the venture capital industry (Gompers, 1994).

The nature of venture capital can well explain why venture capital has been poorly developed in other countries that lack well-developed public equity markets or active institutional investors like pension funds, who are allowed to diversify their funds for their high-risk, high-return investment. For, example, in the case of Japan (Milhaupt, 1997), most venture capital funds are affiliated to banks or securities companies. Employees in these funds, who are usually seconded from the parent's bank, are unlikely to have special expertise for start-ups or high-technology industries. In addition, Japanese venture capitalists provide funds mainly through bank loans, unlike American counterparts providing primarily equity financing.

Equally, Germany venture capital funds, which are only a fraction of the size of the US counterparts, are different from the US ones in several ways (Black and Gilson, 1998). Only a small part of German venture capital funds go to start-ups (8 per cent in 1994) or high-technology-related investments (11 per cent in 1994). The exit of venture capital usually comes through repurchase by portfolio companies and sales of them, because active IPO markets are absent. Thus, to promote venture capital industries, the US experience suggests that other countries may wish to consider public policies initiatives that encourage the establishment of well-functioning stock markets, especially IPO markets, and at the same time, the development of pension funds and their regulatory flexibility to invest in venture capital.

The comparative analysis of financial systems tells us that each system has advantages and disadvantages and that Asian crises and Japan's long economic stagnation as well as the US economic successes related to high-tech entrepreneur firms could be partly understood in this context. However, it may be ambiguous to answer which financial system is more important for economic growth. Two different system could coexist in a country and they should be complementary, as seen in the role of venture capital, corporate financing pattern by size or age or, in times of financial crisis.

IV. Conclusion and policy implications

In a macroeconomic context, financial development is found to be important for growth. Some recent studies find that an improvement in the legal and regulatory structure, exclusively affecting financial development, can also enhance economic growth. This could imply that civil law countries could enhance growth by improving their legal and institutional infrastructure. Too much emphasis on legal origin, nonetheless, is inadvisable. Legal performance is also associated with the level of income, and countries with different legal origins have different advantages in their legal and institutional structure. For example, common law countries have the highest scores on shareholder rights, while Germanic-origin countries have a higher quality of creditor rights and Scandinavian-origin countries enjoy particularly high scores on law enforcement and accounting standards (see Annex).

An important agenda for future research in this area is to understand what kind of financial development is the most crucial for economic growth: the bank-based or stock-market based system, or both. Legal origin may well influence the importance of stock markets relative to the banking system in a given country (Annex). But, again, different systems have different merits and demerits in terms of economic growth, and more microeconomic and institutional approaches are needed to examine this issue further, as shown in Section II and Section III.

In a microeconomic context, internal funds, which are "cheap", are an important determinant of the "quantity" of investment and thus, growth. However, the "quality" of investment is not always guaranteed by the availability of internal funds when capital is abundant relative to investment opportunities. By being invested in negative NPV projects, "free cash flow" can lead to inefficient resource allocation and the same is also true for internal capital markets. Thus, internal funds have a double-edged effect on the real economy.

Microeconomic analysis throws some light on the proper choice of financial systems. When capital is relatively scarce, relationship-base financing or internal capital markets, by alleviating agency costs and financial constraints, can provide finance akin to "internal funds" and raise the level of investment, and spur economic growth. An arm's length system is not good at reducing agency costs, and could do poorly when capital is scarce, while it can alleviate free-cash-flow problems and guide "right" investment decision when investment opportunities are relatively fewer. Thus, each system has merits and demerits and it is important to understand which can perform better and when.

A comparative analysis of financial systems is useful to understand the cause of the Asian crisis and the US stock market boom and development of venture capital markets that resulted in new global high-tech industries. The Asian crises can be understood as a conflict between two systems, and the success of the US venture capital industry can be explained as a happy marriage between two systems. There are policy lessons from these events.

One of the fundamental problems posed by the Asian crisis is whether different financial systems can coexist under global capital market integration. Recently, the global financial architecture has been extensively discussed (see, for example, Eichengreen, 1999; Rogoff, 1999; and Stiglitz and Bhattacharya, 1999). However, these arguments are more fruitful when examined through the lens of a comparative financial system.

The conflict between short-term global money and domestic relationship-based financing is analogous to the maturity mismatch between liabilities and assets of banks, which potentially leads to "bank runs". Thus, to prevent global financial crises, it is desirable to consider the international version of 1) lender of last resort, 2) deposit insurance, 3) supervisory and regulatory institutions. However, these arrangements are insufficient to prevent bank runs, and the establishment of the international versions would involve political problems. On the other hand, some controls on short-term capital flows and outflows, though distrusted by neo-classical macroeconomists, might be a more realistic solution, since they allow relationship-based systems to coexist with a global capitalism that is mainly backed by arm's length systems.

Another important issue is whether Japan and European countries should adopt (or intensify) arm's length financial systems. If these countries wish to create very active venture capital markets in their own countries, the development of stock markets is highly important but it might take a long time to come about. There are thick market externalities in stock markets (Pagano, 1993*b*) and complementarity among several functions of venture capital. There could exist multiple equilibria and a country might be trapped in a poorer equilibrium, where stock markets, institutional investors and venture capital industries are underdeveloped. European countries and Japan which have already committed to European integration and "big bangs" respectively, have no alternative but to introduce more characteristics of an arm's length system. In this case, they need to understand the pros and cons of each system. For example, inter-temporal risk sharing, which is only possible under the relationship-based system, can not be maintained due to growing arbitrage behaviour by markets. Hence, the next step is to consider how these different systems can coexist in a country and seek another chance of a "happy marriage" like the example of the US venture capital markets.

Table 1. Empirical studies of the relationship between internal funds and

Country:	Japan	Germany	United Kingdom (1)	United Kingdom (2)	Canada:	The Netherlands:
Author:	Hoshi *et al* . (1991)	Elston (1998)	Devereux and Schiantarelli (1990)	Bond and Meghir (1994)	Schaller (1993)	Van Ees and Garretsen (1995)
Sample:	145 Japanese firms	Panel data for 150 German firms	Panel data the UK 720 manufacturing firms	626 UK manufacturing firms	Panel data for 212 Canadian firms	76 Dutch firms
Period:	1977-82	1964-72, 1973-84	1969-86	1974-86	1973-86	1984-90
Classification criteria:	Affiliation with industrial groups	Ties with banks (113 independent firms and 26 firms owned directly by banks)	Size, age, and growth	Dividend payouts	Age, concentration of ownership, and association with industrial groups	Ties with banks through exchange of CEOs and board members
Method:	Reduced form estimation controlled by Tobin's Q	Reduced form estimation controlled by Tobin's Q	Reduced form estimation controlled by Tobin's Q	Euler equation tests	Reduced form estimation controlled by Tobin's Q	Reduced form estimation controlled by Tobin's Q
Result:	Independent firms have higher sensitivity to cash flow than affiliated firms	The sensitivity of investment to cash flow is relatively smaller for bank owned firms for both estimation periods	Mixed. By the criteria of size, the sensitivity shows U-shaped pattern, however, when classified by age, cash flow appears to be somewhat more important for newer firms.	The violation of the frictionless model is detected for the whole sample and most prominent for low-dividend-payout firms	Firms with younger maturity or ones owned dispersely exhibit higher sensitivity of their investment to cash flow	The responsiveness of investment to cash flow is greater for independent firms rather than bank-affiliated firms

Table 2. Capital Flows to Five Asian Economies[1]

(billions of dollars)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000 (Forecast)
Current account balance	-16.8	-25.4	-16.1	-13.7	-23.4	-40.6	-54.4	-26.8	69.4	46.3	28.8
External financing, net	31.6	31.3	32.7	54.5	51.6	89.0	103.2	27.5	-12.9	10.8	6.6
Private flows, net	25.0	29.0	25.0	49.5	44.4	86.4	106.4	-0.8	-38.6	5.1	-2.0
Equity investment, net	5.5	4.1	10.9	25.0	14.7	15.3	18.6	4.4	14.2	25.2	22.1
Direct investment, net	2.7	4.5	4.5	4.1	4.7	4.2	4.7	5.9	9.9	11.9	14.8
Portfolio investment, net	0.7	-0.3	6.4	20.9	10.0	11.0	13.9	-1.5	4.3	13.2	7.3
Private creditors, net	19.5	24.8	14.1	24.5	29.7	71.2	87.8	-5.2	-52.7	-20.0	-24.1
Commercial banks, net	19.8	19.2	10.6	8.7	26.0	58.6	59.9	-17.2	-48.3	-18.7	-22.3
Nonbanks, net	-0.3	5.6	3.5	15.8	3.7	12.6	27.8	12.0	-4.4	-1.3	-1.8
Official flows, net	6.6	2.4	7.7	5.1	7.2	2.6	-3.2	28.3	25.6	5.7	8.6
International Financial Institutions	1.1	0.7	0.4	1.0	-0.5	-0.4	-2.0	22.5	19.4	-3.3	3.2
Bilateral creditors	5.5	1.6	7.3	4.0	7.7	3.0	-1.3	5.7	6.3	9.0	5.4
Resident lending/other, net[2]	-8.3	3.9	2.6	-21.0	-23.6	-34.3	-31.9	-31.3	-15.1	-13.5	-9.9
Reserves (- = increase)	-6.5	-9.8	-19.3	-19.9	-4.6	-14.1	-16.9	30.7	-41.3	-43.6	-25.5

1. Indonesia, Malaysia, Philippines, South Korea and Thailand.
2. Including net lending, monetary gold, and errors and omissions.

Source : "Capital flows to Emerging Market Economies", September 25, 1999, Institute of International Finance (IIF).

ANNEX

BANK-BASED AND STOCK MARKET-BASED FINANCIAL SYSTEMS AND ECONOMIC DEVELOPMENT

Demirguc-Kunt and Levine (1999) and LLSV (1997, 1998) provide various indicators of financial systems and related legal aspects for a large number of countries. This annex, using their data, but, focusing especially on OECD member countries and some selected Asian countries (India; Indonesia; Hong Kong, China; Malaysia; the Philippines; Singapore; Thailand), considers how financial systems, legal origin and economic development are interconnected and shows how these countries can be classified into two financial systems, bank based and stock market based systems.

1. Legal origins

The relationships between investors' rights and legal origins in OECD countries are broadly in agreement with the results of LLSV (1998) including non-OECD countries. The quality of shareholder and credit rights are lowest in French-origin OECD countries and that of shareholder rights are highest in English-origin OECD countries (Tables A1 and A2). However, for credit rights, German-origin OECD countries have higher scores than English-origin OECD ones. The quality of shareholder and creditor rights is very much higher in English-origin Asian countries.

On average, legal enforcement (*e.g*. rule of law, risk of contract repudiation) is weaker in French-origin countries among OECD countries, but these indexes seem to be much more related to the level of economic development (GDP per capita) rather than to legal origin (Tables A1 and A2). Scandinavian countries enjoy particularly high scores. Accounting standards are highest in English-origin OECD, some Scandinavian-origin OECD (Finland, Norway and Sweden) and some English-origin Asian countries (Hong Kong, China; Malaysia; and Singapore) (Table A2).

2. Bank-based vs. stock market-based systems

Among OECD countries, the relative size of stock markets (the ratio of market capitalisation to GDP) is highest in English-origin ones (Tables A1 and A3). This result is also consistent with that of LLSV (1997) including a sample of non-OECD countries. The Netherlands, Japan, Switzerland and Sweden have an exceptionally large size of stock market in their own legal group. Within each legal group, the relative size of stock markets appears to be related to economic development, but three English-origin Asian countries (Hong Kong, China; Malaysia; and Singapore) have a significantly large relative size of stock market.

Within the exception of Korea, German-origin OECD countries have the highest relative size of banking system (in terms of domestic assets of deposit money banks) (Tables A1 and A3). The within-group relationship between the relative size of banking sector and economic development is not very strong.

One measure of the importance of stock markets relative to banking system is the ratio of market capitalisation to domestic assets of deposit money banks (Demirguc-Kunt and Levine (1999), Table A3). English-origin countries have the highest level of this ratio. In particular, among English-origin OECD countries, the relative importance of stock markets is strongly correlated with the level of economic development. French, German and Scandinavian-origin countries tend to have the lowest ratios, but with important exceptions: Mexico, the Netherlands, Turkey and the Philippines (French-origin), Japan, Korea, Switzerland (German-origin), Denmark, Sweden (Scandinavian origin).

Thus, the origin of the legal system appears to be related to the relative importance of stock markets among the more advanced OECD countries. However, non-European, less-developed OECD countries and some Asian countries, have a much larger size of stock markets than is predicted by their level of economic development, reflecting financial liberalisation at an earlier stage of their development. In some countries (India, Indonesia, Malaysia, Mexico, Philippines, and Thailand), an abnormally rapid development of their stock markets could be a good predictor of financial crises (Table A3).

Another measure of stock markets is the trading value of stock markets relative to that of banking system [Demirguc-Kunt and Levine (1999), Table A3]. The pattern is very similar to that of the first indicator, but the United States, Korea, and Turkey have significantly high scores in terms of this indicator.

Other important indicators of stock market development are the number of listed companies (stock data, Table A3) and initial public offerings [flow data (Table A3), LLSV (1997)]. On average, English-origin OECD countries and three English-origin Asian countries (Hong Kong, China; Malaysia; and Singapore) enjoy high numbers of listed firms and IPOs. On the other hand, French-origin and German-origin countries have very low levels of these indicators.

3. Classification of OECD and some Asian countries into two financial systems

Based on the above analysis, these countries can be classified into different financial systems. The outcome of a partition is dependent on a classification standard. This annex adopts a more discretionary approach, considering different standards in well-balanced way. In practice, the group of the stock market-based system (the bank-based system) includes only countries that can not be classified into the bank-based system (the stock market system) by any classification standards mentioned above. If a country can be grouped in the stock market or bank based system, depending on classification criteria, it is included in the intermediate system.

1) Stock market-based system

The United States, United Kingdom, Canada, and, Australia (English-origin OECD countries)

Mexico, Turkey (French-origin OECD countries)

Hong Kong, China; Malaysia ;and Singapore (English-origin Asian countries)

2) Bank-based system

Belgium, France, Greece, Italy, Portugal, Spain (French-origin OECD countries)

Austria, Germany (German-origin OECD countries)

Finland, Norway (Scandinavian-origin OECD countries)

India (English-origin Asian countries)

Indonesia (French-origin Asian countries)

3) Intermediate system

The following countries might be classified into bank based or stock market based systems depending on the definition.[25]

Ireland, New Zealand (English-origin OECD countries)

Thailand (English-origin Asian countries)

The Netherlands (French-origin OECD countries)

Japan, Korea, and Switzerland (German-origin OECD countries)

Denmark, Sweden (Scandinavian-origin OECD countries)

Philippines (French-origin Asian countries)

Ireland and New Zealand, which are relatively less developed countries in terms of GDP per capita, are heading for a more fully developed stock market based system. Denmark, Japan, The Netherlands, Sweden Switzerland, have been in a transitional process to moving from a fully developed bank-based system toward a more stock market oriented system. Korea and Thailand are basically classified as having a bank based system, but with rapidly liberalising financial markets.

4. Concluding remarks

Legal origin might be an important factor influencing the importance of stock markets relative to the banking system. However, too great an emphasis on legal origin might be misleading.

Among OECD countries, the French-origin group has the lowest legal quality (shareholder and creditor rights, law enforcement, and accounting standards) on average, in part related to its lower average level of GDP per capita (Tables A1 and A3). English-origin countries have the highest scores on shareholder rights, while German-origin countries have higher quality of creditor rights and Scandinavian-origin countries enjoy particularly high scores on law enforcement and accounting standards.

Historical analysis gives a quite different picture of financial systems in OECD countries before World War I (Rajan and Zingales (1999*b*). In 1913, the United Kingdom (4.29), Japan (2.56), and Germany (1.93) had highest estimated ratio of market capitalisation to GDP. At that time, however, the United States had a relatively low ratio (0.69). The market capitalisation ratio in these OECD countries declined during World War I and II and started increasing after World War II. However, the ratio has not regained the pre-war level except for the United States.[26]

[25] Demirguc-Kunt and Levine (1999) classify these countries into bank based or stock market based systems by using a composite index constructed by two indicators showing the relative importance of stock markets to banking system mentioned above. According to their composite index, Japan, Ireland, New Zealand have "bank-based system", while Denmark, Korea, The Netherlands, Sweden, Switzerland, Philippines and Thailand have a "market based system".

[26] Rajan and Zingales (1999 b) stress the role of political interference in markets during war times (*e.g.* anti-market forces, centralised and co-ordinated decision process for national security) in Civil law countries. They argue that Civil [Law] with the centralisation of legal system is more vulnerable to political pressures than Common Law with the decentralisation of legal system.

BIBLIOGRAPHY

ABEL, A.B. and O.J. BLANCHARD (1986), "*The present value of profits and cyclical movements in investment*", Econometrica, 54(2), 249-73.

ALLEN, F. (1993), "Stock markets and resource allocation", in C. Mayer and X. Vives, eds., *Capital markets and intermediation*, Cambridge University Press.

ALLEN, F. and D. GALE (1997), "Financial markets, intermediaries, and intertemporal smoothing", *Journal of Political Economy*, 105(3), 523-46.

ALLEN, F. and D. GALE (1999), *Comparing financial systems*, MIT Press, forthcoming.

AOKI, M. (1999), *Toward a comparative institutional analysis*, MIT Press, forthcoming.

AOKI, M. and H. PATRICK (1994), eds. *The Japanese main bank system: Its relevance for developing and transforming economies.*. Oxford and New York: Oxford University Press.

BAGEHOT, W. (1873), *Lombard Street*, Homewood, Irwin.

BALIGA, S. and B. POLAK (1995), "Banks versus bonds: A simple theory of comparative financial institutions", *Cowles Foundation Discussion Paper* No. 1100.

BARRY, C. (1994), "New directions in venture capital research", *Journal of Financial Management*, 23, 3-15.

BARRY, C.B., C.J. MUSCARELLA, J.W. PEAVY III and M.R. VETSUYPENS, (1990), "The role of venture capital in the creation of public companies: Evidence from the going public process", *Journal of Financial Economics*, 27, 447-72.

BECK, T., R. LEVINE and N. LOAYZA (1999), "Finance and the sources of growth", World Bank, mimeo.

BENCIVENGA, V.R. and B.D. BRUCE (1991), "Financial intermediation and endogenous growth", *Review of Economic Studies*, 58(2), 195-209.

BERGER, A.N. and G. UDELL, (1995), "Relationship lending and lines of credit in small firm finance", *Journal of Business*, 68, 351-81.

BERGER, P. and E. OFEC (1995), "Diversification's effect on firm value", *Journal of Financial Economics*, 37, 39-65.

BERGLOF, E. (1995), "Corporate Governance in Transition Economies: The Theory and Its Policy Implications", in Aoki-Masahiko, Kim,-Hyung-Ki (1995), eds. *Corporate governance in transitional economies: Insider control and the role of banks*, Washington, D.C., World Bank, 59-95.

BERGLOF, E. and E.L. VON THADDEN (1994), "Short-term versus long-term interests: Capital structure with multiple investors", *Quarterly Journal of Economics*, 109, 1055-84.

BERLIN, M. (1998), "That thing venture capitalists do", *Federal Reserve Bank of Philadelphia Business Review*, January/February.

BHAGAT, S., A. SHLEIFER and R. VISHNY (1990), "Hostile takeovers in the 1980s: The return to corporate specialization", *Brookings Papers on Economic Activities: Microeconomics*, 1-72.

BLACK, B. S. and R.J. GILSON (1998), "Venture capital and the structure of capital markets: Banks versus stock markets", *Journal of Financial Economics*, 47, 243-77.

BOLTON, P. and D.S. SCHARFSTEIN (1996), "Optimal debt structure and the number of creditors", *Journal of Political Economy*, 104(1), 1-25.

BOLTON, P. and D.S. SCHARFSTEIN (1998), "Corporate finance, the theory of the firm and organizations", *Journal of Economic Perspective*, 12(4), 95-114.

BOND, S., J. ELSTON, J. MAIRESSE, and B. MULKAY (1997), "Financial factors and investment in Belgium, France, Germany, and the UK: A comparison using company panel data", *NBER Working Paper* No. 5900.

BOND, D. and C. MEGHIR (1994), "Dynamic investment models and the firm's financial policy", *Review of Economic Studies*, 61(2), 197-222.

BOOT, A. and A. THAKOR (1993), "Self-interested bank regulation", *American Economic Review*, 83, 206-212.

CABALLERO, R.J. (1990), "Consumption puzzles and precautionary savings", *Journal of Monetary Economics*, 25, 113-36.

CALOMIRIS, C.W. and R.G. HUBBARD (1995), "Internal finance and firm-level investment: Evidence from the undistributed profits tax of 1936-37", *Journal of Business*, 68.

COMMENT, R. and G.A. JARRELL (1995), "Corporate focus and stock returns", *Journal of Financial Economics*, 37, 67-87.

CUMMINS, J.G., K.A. HASSETT, and S.D. OLINER (1999), "Investment behavior, observable expectations and internal funds", mimeo.

DEMIRGUC-KUNT, A. and R. LEVINE (1999), "Bank-based and market-based financial systems: Cross-country comparisons", World Bank, mimeo.

DEMIRGUC-KUNT, A. and V. MAKSIMOVIC (1998), "Law, finance and firm growth", *Journal of Finance*, 53(6), 2107-37.

DEVEREUX, M. and F. SCHIANTARELLI (1990), "Investment, financial factors and cash flow: evidence from U.K. panel data", in R. G. Hubbard, ed., *Asymmetric information, corporate finance and investment*, Chicago, University of Chicago Press.

DEVEREUX, M.B. and G.W. SMITH (1994), "International risk sharing and economic growth", *International Economic Review*, 35(4), 535-50.

DEWATRIPONT, M. and E. MASKIN (1995), "Credit and efficiency in centralized and decentralized economies", *Review of Economic Studies*, 62, 541-55.

DIAMOND, D.W. (1984), "Financial intermediation and delegated monitoring", *Review of Economic Studies*, 51, 393-414.

DIAMOND, D.W. (1989), "Reputation acquisition in debt markets", *Journal of Political Economy*, 97(4), 828-861.

DIAMOND, D.W. (1991), "Monitoring and reputation: The choice between bank loans and directly placed debt", *Journal of Political Economy*, 99(4), 689-721.

DIAMOND, D. and P.H. DYBVIG, "Bank runs, deposit insurance and liquidity", *Journal of Political Economy*, 91(3), 401-19.

DIAMOND, D.W. and R. VERECCHIA (1981), "Information aggregation in a noisy rational expectations economy", *Journal of Financial Economics*, 9, 221-35.

EDWARDS, J. and K. FISCHER (1994), *Banks, finance and investment in Germany*, Cambridge University Press.

EICHENGREEN, B. (1999), *Toward a new international financial architecture: A practical post-Asian Agenda*, Washington, The institute for International Economics.

ELSTON, J.A. (1998), "Investment, liquidity constraints and bank relationships: Evidence from German manufacturing firms", in S.W. Black and M. Moersch, eds., *Competition and convergence in financial markets: The German and Anglo-American models*, Amsterdam, Elsevier.

FAUVER, L., J. HOUSTON, and A. NARANJO (1999), "Capital market development, legal systems and the value of corporate diversification: A cross-country analysis", University of Florida, mimeo.

FAZZARI, S.M., R.G. HUBBARD and B.C. PETERSEN (1988), "Financing constraints and corporate investment", *Brookings Papers on Economic Activities*, I , 141-95.

FAZZARI, S.M., R.G. HUBBARD and B.C. PETERSEN (1996), "Financing constraints and corporate investment: Response to Kaplan and Zingales", mimeo.

FAZZARI, S.M., and B.C. PETERSEN (1988), "Working capital and fixed investment: New evidence on financing constrains", *RAND Journal of Economics*, 24(3), 328-42.

FENN, G.W., N. LIANG, and S. PROWSE (1995), "The economics of the private equity market", FRB.

FULGHIERI, P. and R. ROVELLI (1998), "Capital markets, financial intermediaries, and liquidity supply", *Journal of Banking and Finance*, 22, 1157-79.

GERTNER, R., D. SCARFSTEIN, and J. STEIN (1994), "Internal versus external capital markets*", Quarterly Journal of Economics*, 109, 1211-30.

GILCHRIST, S. and C.P. HIMMELBERG (1995), "Evidence on the role of cash flow in reduced-form investment equations", *Journal of Monetary Economics*, 36, 541-72.

GILCHRIST, S. and C.P. HIMMELBERG (1998), "Investment, fundamentals and finance", *NBER Woking Paper* No. 6652.

GOLDSMITH, R. (1969), *Financial structure and development*, New Haven, Yale University Press.

GOMPERS, P.A. (1995), "The rise and fall of venture capital", *Business and Economic History*, 23, 1-26.

GOMPERS, P.A. (1995), "Optimal investment, monitoring and the staging of capital", *Journal of Finance*, 50, 1461-89.

GOMPERS, P.A. (1998), "Resource allocation, incentives and control: The importance of venture capital in financing entrepreneurial firms", in *Entrepreneurship, SMEs, and the Macroeconomy*, Cambridge University Press.

GOMPERS, P.A. and J. LERNER (1999), *The venture capital cycle*, Cambridge, MIT Press.

GREENWOOD, J. and B. JOVANOVIC (1990), "Financial development, growth and the distribution of income", *Journal of Political Economy*, 98(5), 1076-1107.

GROSSMAN, S. (1976), "On the efficiency of competitive stock markets where traders have diverse information", *Journal of Finance*, 31, 573-85.

GROSSMAN, S. and J. STIGLITZ (1980), "On the impossibility of informationally efficient markets", *American Economic Review* 70, 393-408.

HALL, B.H. (1992), "Investment and Research and development at the firm level: Does the source of financing matter?", *NBER Working Paper* No. 4096.

HALL, B.H., J. MAIRESSE, L. BRANSTETTER, and B. CREPON (1998), "Does cash flow cause investment and R&D: An exploration using panel data for French, Japanese, and United States scientific firms", mimeo.

HARRISON, P., O. SUSSMAN and J. ZEIRA (1999), "Finance and growth: Theory and new evidence", mimeo, FRB.

HASLAG, J.H. and J. KOO (1999), "Financial repression, financial development and economic growth", mimeo, FRB of Dallas.

HELLMANN, T. and K. MURDOCK (1998), "Financial Sector Development Policy: The Importance of Reputational Capital and Governance", in R. Sabot and I. Skékely, eds., *Development Strategy and Management of the Market Economy*, 2 vol. 2, Oxford University Press.

HELLMANN, T. and M. PURI (1998), "The interaction between product market and financing strategy: The role of venture capital", mimeo.

HIMMELBERG, C.P. and B.C. PETERSEN, (1994), "R&D and internal finance: A panel study of small firms in high-tech industries", *Review of Economics and Statistics*, 76(1), 38-51.

HOSHI, T., A. KASHYA and D. SHARFSTEIN (1991), "Corporate structure, liquidity and investment: Evidence from Japanese panel data", *Quarterly Journal of Economics*, 106(1), 33-60.

HU, X. and F. SCHIANTARELLI (1998), "Investment and Capital Market Imperfections: A Switching Regression Approach Using U.S. Firm Panel Data", *Review of Economics and Statistics*, 80(3), 466-79.

HUBBARD, R.G., A. KASHYAP and T.M. WHITED, "Internal finance and firm investment", *Journal of Money, Credit and Banking*, 27(3), 683-701.

HUBBARD, R.G. and D. PALIA (1999), "A re-examination of the conglomerates merger wage in the 1960s: An internal capital markets view", *Journal of Finance*, 54, 1131-52.

HUTCHINSON, M. and K. MCDILL (1999), "Are all banking crises alike? The Japanese experience in international comparison", *NBER Working Paper* No. 7253.

JAPPELLI, T. and M. PAGANO (1994), "Saving, growth and liquidity constraints", *Quarterly Journal of Economics*, 109(1), 83-109.

JAYARATNE, J. and P.H. STRAHAN (1996), "The finance-growth nexus: Evidence from bank branch deregulation", *Quarterly Journal of Economics*, 111(3), 639-70.

JENSEN, M.C. (1986), "The agency cost of free cash flow, corporate finance and takeovers", *American Economic Review*, 76, 323-29.

JENSEN, M.C. and W. MECKLING (1976), "Theory of firm: Managerial behavior, agency costs and capital structure", *Journal of Financial Economics*, 3, 305-60.

KAMINSKY, G.L. and C.M. REINHART (1999), "The twin crises: The causes of banking and balance of payments problems", *American Economic Review*, June, 473-500.

KAPLAN, S.N. and L. ZINGALES (1997), "Do investment-cash flow sensitivities provide useful measures of financing constraints?", *Quarterly Journal of Economics*, 112(1), 169-215.

KAPLAN, S.N. and M.S. WEISBACH (1992), "The success of acquisitions: Evidence from divestures", *Journal of Finance*, 47, 107-38.

KHANNA, T. and K.G. PALEPU (1997), "Why focused strategies may be wrong for emerging markets", *Harvard Business Review*, July-August, 41-51.

KHANNA, T. and K.G. PALEPU (1999), "Is group affiliation profitable in emerging markets? An analysis of diversified indian business groups", *Journal of Finance*, forthcoming.

KIMBALL, M.S. (1990), "Precautionary saving in the small and in the large", *Econometrica*, 58, 53-73.

KING, R.G. and R. LEVINE (1993), "Finance and growth: Schmpeter might be right", *Quarterly Journal of Economics*, 108(3), 717-37.

KORTUM, S. and J. LERNER (1998), "Does venture capital spur innovation?", mimeo.

LAMONT, O. (1997), "Cash flow and investment: Evidence from internal capital markets", *Journal of Finance*, 52, 83-109.

LANG, L.and R.M. STULZ (1996), "Tobin's q, corporate diversification and firm performance", *Journal of Political Economy*, 102, 1248-80.

LANG, L., E. OFEK and R.M. STULZ (1996), "Leverage, investment and firm growth", *Journal of Financial Economics*, 40(1), 3-29.

LAPORTA, R., F. LOPEZ-DE-SILANES, A. SHLEIFER and R.W. VISHNY (1997), "Legal determinants of external finance", *Journal of Finance*, 52, 1131-50.

LAPORTA, R., F. LOPEZ-DE-SILANES, A. SHLEIFER and R.W. VISHNY (1998), "Law and finance", *Journal of Political Economy*, 106(6), 1113-55.

LELAND, H.M. (1968), "Saving and uncertainty: The precautionary demand for saving", *Quarterly Journal of Economics*, 82, 465-473.

LERNER, J. (1994), "The syndication of venture capital investments", *Financial Management*, 23, 16-27.

LEVHARI, D. and T.N. SRINIVASAN (1969), "Optimal savings under uncertainty", *Review of Economic Studies*, 36(1), 153-63.

LEVINE, R. (1991), "Stock markets, growth and tax policy", *Journal of Finance*, 46(4), 1445-65.

LEVINE, R. (1997), "Financial development and economic growth: Views and agenda", *Journal of Economic literature*, 35(2), 688-726.

LEVINE, R. (1998), "The legal environment, banks and long-run economic growth*", Journal of Money, Credit and Banking*, 30(3), 596-613.

LEVINE, R. (1999), "Law, finance and economic growth", *Journal of Financial Intermediation*, 8.

LEVINE, R. and S. ZERVOS (1998), "Stock markets, banks and economic growth", *American Economic Review*, 88(3), 537-58.

LICHTENBERG, F.R. and D. SIEGEL (1990), "The effects of leveraged buyouts on productivity and related aspects of firm behavior", *Journal of Financial Economics*, 27, 165-94.

LINS and SERVAES (1999*a*), "International evidence on the value of corporate diversification", *Journal of Finance*, forthcoming.

LINS and SERVAES (1999*b*), "Is corporate diversification beneficial in emerging markets?", mimeo.

MATSUSAKA, J.G. (1993), "Takeover motives during the conglomerate merger wave", *RAND Journal of Economics*, 24, 357-79.

MAYER, C. (1988), "New issues in corporate finance", *European Economic Review*, 32, 1167-89.

MCCONNELL, J.J. and H. SERVAES (1995), "Equity ownership and the two faces of debt", *Journal of Financial Economics*, 39, 131-57.

MCKINNON, R. (1973), *Money and capital in economic development*, Washington DC, Brookings Institution.

MEGGINSON, W.L. and K.A. WEISS (1991), "Venture capitalist certification in initial public offerings", *Journal of Finance*, 46, 879-903.

MILHAUPT, C. (1997), "The market for innovation in the United States and Japan: Venture capital and the comparative corporate governance debate", *Northwestern University Law Review*, 91, 865-98.

MYERS, S. and N.S. MAJLUF (1984), "Corporate financing and investment decisions when firms have information that investors do not have", *Journal of Financial Economics*, 13, 187-221.

NICKELL, S. and D. NICOLITSAS (1995), "How does financial pressure affect firms?", LSE, mimeo.

NICKELL, S. and D. NICOLITSAS (1999), "How does financial pressure affect firms?", *European Economic Review*, 43, 1435-56.

NICKELL, S., D. NICOLITSAS and N. DRYDEN (1998), "What makes firms perform well?", *European Economic Review*, 41, 783-96.

PAGANO, M. (1993*a*), "Financial markets and growth, An overview", *European Economic Review*, 37, 613-622.

PAGANO, M. (1993*b*), "The flotation of companies on the stock market: An coordination failure model", *European Economic Review*, 37, 1101-25.

PERTERSEN, M. and R. RAJAN (1994), "The benefits of lending relationships: Evidence from small business data", *Journal of Finance*, 49, 3-37.

QI, J. (1994), "Bank liquidity and stability in an overlapping-generations model", *Review of Financial Studies*, 7, 389-417.

RAJAN, R., H. SERVAES, and L. ZINGALES (1997), "The cost of diversity: The diversification discount and inefficient investment", mimeo.

RAJAN, R.G. and L. ZINGALES (1998*a*), "Financial dependence and growth", *American Economic Review*, 88(3), 559-86.

RAJAN, R.G. and L. ZINGALES (1998*b*), "Which capitalism? Lessons from the East Asian crisis*", Journal of Applied Corporate Finance*, 11(3).

RAJAN, R.G. and L. ZINGALES (1999*a*), "Financial systems, industrial structure, and growth", mimeo.

RAJAN, R.G. and L. ZINGALES (1999*b*), "The politics of financial development", mimeo.

ROBINSON, J. (1952), "The generalisation of the general theory", in *The rate of interest and ther essays*, London, Macmillan, 67-146.

ROGOFF, K. (1999), "International Institutions for reducing global financial stability", *Journal of Economic Perspective*, 13 (Fall), forthcoming.

ROMER, P (1986), "Increasing returns and long-run growth"*, Journal of Political Economy*, 94(5), 1002-37.

ROUBINI, N. and X. SALA-I-MARTIN (1995), "a growth model of inflation, tax evasion and financial repression", *Journal of Monetary Economics*, 35(2), 275-301.

SAHLMAN, W. (1990), "The structure of governance of venture capital organizations", *Journal of Financial Economics*, 27, 473-522.

SAINT-PAUL, G. (1992), "Technological choice, financial markets and economic development", *European Economic Review*, 36(4), 763-81.

SANDMO, A. (1970), "The effect of uncertainty on saving decisions", *Review of Economic Studies*, 37, 353-60.

SCHALLER, H. (1993), "Asymmetric information, liquidity constraints and Canadian investment", *Canadian Journal of Economics*, 26(3), 552-74.

SCHARFSTEIN, D.S. and J.C. STEIN (1997), "The dark side of internal capital markets: Divisional rent-seeking and inefficient investment", *NBER Working Paper* No. 5969.

SCHARFSTEIN, D.S. and J.C. STEIN (1998), "The dark side of internal capital markets II: Evidence from diversified conglomerates", *NBER Working Paper* No. 6352.

SCHIPPER, K. and R. THOMPSON (1983), "The evidence on the capitalized value of merger activity for merging firms, *Journal of Financial Economics*, 11, 85-119.

SCHUMPETER, J.A. (1912), *Theorie der wirtschaftlichen entwicklung*, Leipzig, Dunker & Humblot

SERVAE, H. (1996), "The value of diversification during the conglomerate merger wave", *Journal of Finance*, 51, 1201-25.

SHAW, E.S. (1973), *Financial deepening in economic development*, New York, Oxford University Press.

SHIN, H. and R.M. STULZ (1998), "Are internal capital markets efficient?", *Quarterly Journal of Economics*, 113, 531-53.

SMITH, A.J. (1990), "Corporate ownership structure and performance: The case of management buyouts", *Journal of Financial Economics*, 27, 143-64.

STEIN, J. (1997), "Internal capital markets and the competition for corporate resources", *Journal of Finance*, 52, 111-34.

STIGLITZ, J.E. and A. BHATTACHARYA (1999), "underpinning for a stable equitable global financial system from old debates to a new paradigm", World Bank, mimeo.

STIGLITZ, J.E. and A. WEISS (1981), "Credit rationing in markets with imperfect information, *America Economic Review*, 71, 393-410.

THAKOR, A.V. (1996), "The design of financial systems: An overview", *Journal of Banking and Finance*, 20, 917-48.

VAN EES, H and H. GARRETSEN (1994), "Liquidity and business investment: Evidence from Dutch panel data", *Journal of Macroeconomics*, 16(4), 613-27.

WHITED, A.M. (1992), "Debt, liquidity constraints and corporate investment: Evidence from panel data", *Journal of Finance*, 47(4), 1425-60.

Table A1. Legal quality, financial system and the level of economic development in OECD and non-OECD countries

	Shareholder rights[1]	Creditor rights[2]	Rule of Law[3] (1982-95)	Accounting standards[4] (1990)	Market capitalisation / GDP (1990-95)	Domestic assets of money deposit banking / GDP (1990-95)	GNP per capita (thousands $, 1994)
English-origin average	4.0	3.1	6.5	70	0.71	0.65	9.4
OECD average[5]	4.5	1.8	9.4	74	0.66	0.76	17.6
Non-OECD average[6]	3.8	3.8	5.0	67	0.73	0.60	5.2
French-origin average	2.3	1.6	6.0	51	0.27	0.51	7.1
OECD average[7]	2.0	1.3	7.8	58	0.29	0.74	13.5
Non-OECD average[8]	2.6	1.8	4.7	33	0.26	0.34	2.3
German-origin average	2.3	2.3	8.7	63	0.43	1.22	22.1
OECD average[9]	2.2	2.4	8.7	62	0.43	1.22	24.4
Non-OECD (Taiwan)	3.0	2.0	8.5	65	n.a.	na	10.4
Scandinavian-origin average[10]	3.0	2.0	10.0	74	0.38	0.63	24.2

1. Shareholder rights: An index aggregating shareholder rights. The index is formed by adding 1 when:
1. the country allows shareholders to mail their proxy vote;
2. shareholders are not required to deposit their shares prior to the General Shareholders' Meeting;
3. cumulative voting is allowed;
4. an oppressed minorities mechanism is in place; or
5. when the minimum percentage of share capital that entitles a shareholder to call for an Extraordinary Shareholders' Meeting Meeting is less than or equal to 10 per cent (the same median). The index ranges from 0 to 5.

2. Creditor rights An index aggregating creditor rights. The index is formed by adding 1 when:
1. the country imposes restrictions, such as creditors' consent or minimum dividends, to file for reorganisation;
2. secured creditors are able to gain possession of their security once the reorganisation petition has been approved (no automatic stay);
3. the debtor does not retain the administration of its property pending the resolution of the reorganisation;
4. secured creditors are ranked first in the distribution of proceeds that result from the disposition of the assets of a bankrupt firm. The index ranges from 0 to 4.

3. Rule of law: Assessment of the law and order tradition in a country (International Country Risk, ICR)
The index ranges from 0 to 10, with higher scores for more tradition for law and order.

4. Accounting standards Index created by examining and rating companies' annual reports (1990) on their inclusion or omission of 90 items.
The index ranges from 0 to 90.

5. English-origin OECD countries: Australia, Canada, Ireland, New Zealand, United Kingdom and United States

6. English-origin non-OECD countries: Hong Kong, India, Israel, Kenya, Malaysia, Nigeria, Pakistan, Singapore, South Africa, Sri Lanka, Thailand, Zimbabwe

7. French-origin OECD countries: Belgium, France, Greece, Italy, Mexico, Netherlands, Portugal, Spain, and Turkey

8. French-origin non-OECD countries: Argentina, Brazil, Chile, Columbia, Ecuador, Egypt, Indonesia, Jordan, Peru, Philippines, Uruguay, and Venezuela

9. German-origin OECD countries: Austria, Germany, Japan, South Korea, and Switzerland

10. Scandinavian-origin countries: Denmark, Finland, Norway, and Sweden

Source : LLSV (1998), Demirguc-Kunt and Levine (1999).

Table A2. Law and finance in OECD and selected Asian countries

	Shareholder rights	Creditor rights	Rule of law (1982 - 1995)	Risk of contract repudiation[1] (1982-95)	Accounting standards (1990)	GDP per capita (thousands $, 1990-95)
1. OECD						
English Origin						
Australia	4	1	10.00	8.71	75	14.3
Canada	4	1	10.00	8.96	74	17.3
Ireland	3	1	7.80	8.96	n.a.	9.0
New Zealand	4	3	10.00	9.29	70	9.5
United Kingdom	4	4	8.57	9.63	78	11.8
United States	5	1	10.00	9.00	71	19.4
Average	**4.0**	**1.8**	**9.40**	**9.09**	**74**	**13.6**
French Origin						
Belgium	0	2	10.00	9.48	61	14.5
France	2	0	8.98	9.19	69	15.2
Greece	1	1	6.18	6.62	55	6.6
Italy	0	2	8.33	9.17	62	11.5
Mexico	0	0	5.35	6.55	60	3.0
Netherlands	2	2	10.00	9.35	64	14.0
Portugal	2	1	8.68	8.57	36	4.8
Spain	2	2	7.80	8.40	64	7.3
Turkey	2	2	5.18	5.95	51	2.3
Average	**1.2**	**1.3**	**7.83**	**8.14**	**58**	**8.8**
German Origin						
Austria	2	3	10.00	9.60	54	13.2
Germany	1	3	9.23	9.77	62	16.6
Japan	3	2	8.98	9.69	65	15.7
Korea	2	3	5.35	8.59	62	3.9
Switzerland	1	1	10.00	9.98	68	19.5
Average	**1.8**	**2.4**	**8.71**	**9.53**	**62**	**13.8**
Scandinavian Origin						
Denmark	3	3	10.00	9.31	62	17.0
Finland	2	1	10.00	9.15	77	15.9
Norway	3	2	10.00	9.71	74	20.1
Sweden	2	2	10.00	9.58	83	19.0
Average	**2.5**	**2.0**	**10.00**	**9.44**	**74**	**18.0**
2. Asia						
English Origin						
India	2	4	4.17	6.11	57	0.4
Hong Kong	4	4	8.22	8.82	69	10.5
Malaysia	3	4	6.78	7.43	76	2.6
Singapore	3	3	8.57	8.86	78	11.2
Thailand	3	3	6.25	7.57	64	1.5
Average	**3.0**	**3.6**	**6.80**	**7.76**	**69**	**5.2**
French Origin						
Indonesia	2	4	3.98	6.09	n.a.	0.6
Phillippines	4	0	2.73	4.80	65	0.7
Average	**3.0**	**2.0**	**3.36**	**5.45**	**65**	**0.7**

1. Repudiation of contracts by government.

ICR's assessment of the risk of a modification in a contract taking the form of a repudiation, postponement, or scaling down. The index ranges from 0 to 10, with higher scores for lower risks.

Source : LLSV (1998).

Table A3. Financial development in OECD and selected Asian countries

	Market capitalization / GDP (= M) (1990-95)	Domestic assets of deposit money banks / GDP (= B) (1990-95)	The importance of stock markets relative to the banking system (= M/B)	Stock market orientation relative to economic development [= (M/B)/(GDP per capita/1000)]	The value of the trades of domestic equities on domestic exchages / Claims of deposit money banks on private sector (1990-95)	Domestic listed firms / Population (millions) (1994)	The number of IPOs / Population (millions) (1995-96)	GDP per capita (thousands $, 1990-95)
1. OECD								
English Origin								
Australia	0.71	0.77	0.93	0.06	0.48	63.6	n.a.	14.3
Canada	0.59	0.66	0.90	0.05	0.52	40.9	4.9	17.3
Ireland	0.26	0.36	0.73	0.08	0.48	20.0	0.8	9.0
New Zealand	0.49	0.85	0.58	0.06	0.18	69.0	0.7	9.5
United Kingdom	1.13	1.16	0.97	0.08	0.48	35.7	2.0	11.8
United States	0.80	0.73	1.09	0.06	0.96	30.1	3.1	19.4
Average	**0.66**	**0.76**	**0.87**	**0.07**	**0.52**	**43.2**	**2.3**	**13.6**
French Origin								
Belgium	0.36	1.18	0.30	0.02	0.09	15.5	0.3	14.5
France	0.33	1.02	0.32	0.02	0.19	8.1	0.2	15.2
Greece	0.15	0.41	0.36	0.05	0.32	21.6	0.3	6.6
Italy	0.17	0.74	0.22	0.02	0.15	3.9	0.3	11.5
Mexico	0.32	0.24	1.32	0.45	0.58	2.3	0.0	3.0
Netherlands	0.69	1.12	0.61	0.04	0.47	21.1	0.7	14.0
Portugal	0.13	0.79	0.17	0.04	0.09	19.5	0.5	4.8
Spain	0.30	0.96	0.31	0.04	0.34	9.7	0.1	7.3
Turkey	0.14	0.19	0.74	0.33	1.18	2.9	0.1	2.3
Average	**0.29**	**0.74**	**0.48**	**0.11**	**0.38**	**11.6**	**0.3**	**8.8**
German Origin								
Austria	0.12	1.26	0.10	0.01	0.08	13.9	0.3	13.2
Germany	0.24	1.21	0.20	0.01	0.29	5.1	0.1	16.6
Japan	0.79	1.31	0.60	0.04	0.24	17.8	0.3	15.7
Korea	0.37	0.55	0.68	0.17	0.82	15.9	0.0	3.9
Switzerland	0.98	1.77	0.55	0.03	0.46	33.9	n.a.	19.5
Average	**0.50**	**1.22**	**0.43**	**0.05**	**0.38**	**17.3**	**0.2**	**13.8**
Scandinavian Origin								
Denmark	0.34	0.48	0.72	0.04	0.42	50.4	1.8	17.0
Finland	0.29	0.80	0.37	0.02	0.15	13.0	0.6	15.9
Norway	0.26	0.69	0.37	0.02	0.25	33.0	4.5	20.1
Sweden	0.62	0.54	1.16	0.06	0.72	12.7	1.7	19.0
Average	**0.38**	**0.63**	**0.66**	**0.04**	**0.39**	**27.3**	**2.1**	**18.0**
2. Asia								
English Origin								
India	0.28	0.34	0.81	2.10	n.a.	7.8	1.2	0.4
Hong Kong	1.96	1.49	1.32	0.13	0.76	88.2	5.2	10.5
Malaysia	2.01	0.82	2.47	0.94	1.52	25.2	2.9	2.6
Singapore	1.37	0.95	1.43	0.13	0.85	80.0	5.7	11.2
Thailand	0.57	0.82	0.69	0.46	0.51	6.7	0.6	1.5
Average	**1.24**	**0.88**	**1.34**	**0.75**	**0.91**	**41.6**	**3.1**	**5.2**
French Origin								
Indonesia	0.18	0.49	0.37	0.61	0.17	1.2	0.1	0.6
Phillippines	0.52	0.37	1.40	1.91	0.54	2.9	0.3	0.7
Average	**0.35**	**0.43**	**0.89**	**1.26**	**0.36**	**2.0**	**0.2**	**0.7**

Source : Demirguc-Kunt and Levine (1999), LLSV (1997).

ECONOMICS DEPARTMENT
WORKING PAPERS

227. *What the yield curves say about inflation: Does it change over time?*
(December 1999) Sebastian T. Schich

226. *Summary Indicators of Product Market Regulation with an Extension to Employment Protection Legislation*
(December 1999) Giuseppe Nicoletti, Stefano Scarpetta and Olivier Boylaud

225. *Some Issues Related to the Equity-Efficiency Trade-Off in the Sweden Tax and Transfer System*
(December 1999) Giuseppe Nicoletti, Stefano Scarpetta and Olivier Boylaud

224. *The Economic Effects of Employment-Conditional Income Support Schemes for the Low-Paid : An Illustration from a CGE Model Applied to Four OECD Countries*
(October 1999) Andrea Bassanini, Jørn Henrik Rasmussen and Stefano Scarpetta

223. *The Use of Financial Market Indicators by Monetary Authorities*
(September 1999) Paul Mylonas and Sebasian Schich

222. *Tax Reform in Switzerland*
(August 1999) David Carey, Kathryn Gordon and Philippe Thalman

221. *Trends in Market Openness*
(August 1999) Jonathan Coppel and Martine Durand

220. *Technology Upgrading with Learning Cost: A Solution for Two "Productivity Puzzles"*
(July 1999) Sanghoon Ahn

219. *Testing for a Common OECD Phillips Curve*
(July 1999) Dave Turner and Elena Seghezza

218. *Sustainable Economic Growth: Natural Resources and the Environment*
(July 1999) Paul van den Noord and Ann Vourc'h

217. *Coping with Population Ageing in Australia*
(July 1999) David Carey

216. *Estimating Prudent Budgetary Margins for 11 EU Countries : A Simulated SVAR Model Approach*
(July 1999) Thomas Dalsgaard and Alain de Serres

215. *The Problems and Prospects Faced by Pay-As-You-Go Pension Systems : A Case Study of Greece*
(June 1999) Paul Mylonas and Christine de la Maisonneuve

214. *Greek Public Enterprises: Challenges for Reform*
(May 1999) Paul Mylonas and Isabelle Joumard

213. *The Levels and Cyclical Behaviour of Mark-Ups Across Countries and Market Structures*
(May 1999) Joaquim Oliveira Martins and Stefano Scarpetta

212. *Poverty Dynamics in Four OECD Countries*
(April 1999) Pablo Antolín, Thai-Thanh Dang and Howard Oxley
Assisted by Ross Finnie and Roger Sceviour

211. *The Recent Experience with Capital Flows to Emerging Market Economies*
(February 1999) Sveinbjörn Blöndal and Hans Christiansen

210. *Foreign Portfolio Investors Before and During a Crisis*
(February 1999) Woochan Kim and Shang-Jin Wei

209. *Towards More Efficient Government: Reforming Federal Fiscal Relations in Germany*
(February 1999) Eckhard Wurzel

208. *Stock Market Fluctuations and Consumption Behaviour: Some Recent Evidence*
(December 1998) Laurence Boone, Claude Giorno and Pete Richardson

207. *Microeconometric analysis of the retirement decision: The Netherlands*
(June 1998) Maarten Lindeboom

206. *Microeconometric analysis of the retirement decision: United Kingdom*
(June 1998) Raffaele Miniaci and Elena Stancanelli

205. *Microeconometric analysis of the retirement decision: Italy*
(June 1998) Raffaele Miniaci

204. *Microeconometric analysis of the retirement decision: Germany*
(June 1998) Pablo Antolin and Stefano Scarpetta

203. *Microeconometric analysis of the retirement decision: United States*
(June 1998) Joseph Quinn, Richard Burkhauser, Kevin Cahill and Robert Weathers

202. *The retirement decision in OECD countries*
(June 1998) Sveinbjörn Blöndal and Stefano Scarpetta

201. *The macroeconomic effects of pension reforms in the context of ageing populations: overlapping generations model simulations for seven OECD countries*
(June 1998) Ketil Hviding and Marcel Mérette

200. *The macroeconomics of ageing, pensions and savings: a survey*
(June 1998) Richard Kohl and Paul O'Brien

199. *Marginal Effective Tax Rates on Physical, Human and R&D Capital*
(May 1998) Kathryn Gordon and Harry Tchilinguirian

198. *The Norwegian Health Care System*
(May 1998) Paul van den Noord, Terje Hagen and Tor Iversen

197. *APEC Trade Liberalisation : Its Implications*
(May 1998) Seunghee Han and Inkyo Cheong

196. *The OECD Jobs Strategy : Progress Report on Implementation of Country Specific Recommendations*
(May 1998)

196 *La Strategie de l'OCDE pour l'emploi : rapport sur l'état d'avancement de la mise en oeuvre des recommandations par pays*
(May 1998)

195. *Trends in OECD Countries' International Competitiveness*
(April 1998) Martine Durand, Christophe Madashi and Flavia Terribile

FINANCIAL DEVELOPMENT AND GROWTH: ARE THE APEC NATIONS UNIQUE?

Mark M. Spiegel[*]
Federal Reserve Bank of San Francisco

ABSTRACT

This paper examines panel evidence concerning the role of financial development in economic growth. I decompose the well-documented relationship between financial development and growth to examine whether financial development affects growth solely through its contribution to growth in factor accumulation rates, or whether it also has a positive impact on total factor productivity, in the manner of Benhabib and Spiegel (2000). I also examine whether the growth performances of a sub-sample of APEC economies are uniquely sensitive to levels of financial development. The results suggest that indicators of financial development are correlated with both total factor productivity growth and investment. However, many of the results are sensitive to the inclusion of country fixed effects, which may indicate that the financial development indicators are proxying for broader economy characteristics. Finally, the APEC sub-sample economies appear to be more sensitive to financial development, both in the determinations of subsequent total factor productivity growth and in rates of factor accumulation, particularly accumulation of physical capital.

Key words: Growth, investment, human capital, financial development

JEL Classification: N10; N30

Corresponding author: Mark M. Spiegel, Economic Research, Stop 1130, Federal Reserve Bank of San Francisco, 101 Market Street, San Francisco, CA, 94105.

[*]This paper was prepared for the APEC Economic Outlook Symposium in Hong Kong, China, June 28-29, 2001. Helpful comments were received from Jack Zhang. Hiroshi Kokame provided excellent research assistance. The views in the paper are those of the author alone and do not necessarily reflect those of the Federal Reserve Bank of San Francisco or the Board of Governors of the Federal Reserve.

1. Introduction

A large literature exists which documents a positive and robust relationship between financial development and economic growth for a cross-section of countries [e.g. King and Levine (1993a,b), Levine and Zervos (1993, 1998), Levine, Loayza and Beck (2000), and Beck, Levine, and Loayza (2000)]. There are a number of theoretical arguments for financial development to have an influence on economic growth rates. The first group of arguments focuses on market imperfections and borrowing constraints. These studies argue that such imperfections can inhibit the accumulation of physical and human capital [e.g. Greenwood and Jovanovic (1990), Bencivenga and Smith (1991), Banerjee and Newman (1991), and King and Levine (1993b)].

It has been also argued that these effects are particularly strong in poor economies or in economies with unequal income distributions [Galor and Zeira (1993), Benabou (1996), and Ljungqvist (1993)]. These studies suggest that financial backwardness may hinder the ability of agents to invest. This would be particularly true for, but not limited to, an agent's own human capital, as liquidity constraints may preclude an agent from investing in his own human capital at optimal levels. These studies also predict that the role of financial development in factor accumulation would be particularly strong for economies with skewed income distributions. The more skewed the distribution of income, the larger would be the share of the population unable to acquire financing for profitable investments in either physical or their own human capital.

The above studies identify reduced rate of physical and human capital investment as the channel through which imperfections in financial markets can hinder economic growth performance. However, it is also plausible that financial development can have a positive impact on economic growth through the enhancement of total factor productivity. For example, developed financial markets can lead to a superior allocation of factors across the economy [e.g. Greenwood and Jovanovic (1990)].

In a recent paper, Benhabib and Spiegel (2000) decompose the well-documented relationship between financial development and growth into these two components. They examine whether financial development affects growth solely through its contribution to growth in "primitives," or factor accumulation rates, or whether it also has a positive impact on total factor productivity growth. Their results suggest that the indicators of financial are correlated with both total factor productivity growth and investment. However, they find that the indicators that are correlated with total factor productivity growth differ from those that encourage investment. In addition, they find that many of the results are sensitive to the inclusion of economy fixed effects, which may indicate that the financial development indicators are proxying for broader economy characteristics. This result conflicts with earlier studies that suggested a robust correlation between financial development and growth.

This paper repeats the Benhabib and Spiegel (2000) study, paying special attention to results concerning a sub-sample of APEC nation countries.[27] A well-known controversy during the recent Asian crisis concerned the role that total factor productivity growth had played in the remarkable growth experience of many Asian nations prior to the crisis. Papers such as Young (1992) argued that the rapid growth of many Asian nations prior to the financial crisis was due to remarkable rates of factor accumulation rather than total factor productivity growth. As such, they argued that a slowdown in the growth rates of these nations was inevitable as human and physical capital deepening reduced the marginal products of these factors to levels found in developed nations.

[27] The APEC sub-sample includes Australia, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, the Philippines, Korea, Chinese Taipei, Thailand, and the United States. The sub-sample includes all APEC economies for which adequate data was available to construct the balanced panel below.

The decomposition exercise in this paper addresses a similar issue. If financial development only influences growth through the encouragement of greater rates of factor accumulation, then the contribution of financial development to economic growth must eventually diminish, as the increase in physical and human capital stocks exhaust the gains from financial development. However, if financial development directly enhances total factor productivity growth, it can increase the steady state rate of factor accumulation and thereby permanently increase economic growth rates.

The question of whether financial development plays a unique role in growth among the APEC countries is interesting precisely because of these questions raised concerning the importance of total factor productivity growth in the growth experience of Asian nations. The consensus that emerged after the Asian economic crisis was that the Asian nations had indeed experienced some degree of total factor productivity growth, but not as much relative to their overall growth experience as other developing nations. As a result, if financial development could be identified as a channel that had particular positive impact on total factor productivity growth in Asia, it would suggest that policies to encourage financial development in Asia could have a more permanent impact on growth performances than other potential growth-enhancing policies.

As in Benhabib and Spiegel (2000), I decompose the impact of financial development on economic growth into its impact on total factor productivity growth in standard growth accounting exercises, and its impact on the rate of growth in national factor stocks, or "primitives." The latter group includes standard factors of production, such as labor and physical capital, as well as human capital. If financial development influences growth primarily through its impact on factor accumulation, we should not expect indicators of financial development to appear in standard growth accounting exercises that already incorporate rates of factor accumulation as explanatory variables.[28]

I first introduce a variety of specifications for "base" growth equations. I then add the indicators of financial development to the base specifications and examine whether they contain any further explanatory power, with and without allowing for economy-specific fixed effects. If financial development directly affects total factor productivity growth, it will enter into the growth accounting equations even after accounting for disparities in factor accumulation rates.

I then directly examine the impact of financial development on the rates of investment in physical and human capital, again with and without accounting for economy fixed effects. To the extent that the financial development facilitates growth by encouraging factor accumulation, their impact will be observable in these direct specifications, even after accounting for economy fixed effects. For example, Clague, et al. (1999) suggest that financial depth will be correlated with the strength of contract enforcement in an economy. As result, movements in indicators of financial depth may actually be proxying for other omitted variables, such as the strength of property rights.

Estimation is conducted through a panel generalized-method-of-moments (GMM) specification that pools cross-economy and time series data to allow for the fixed-effects accounting discussed above. The panel specification also accommodates some response to the issue of simultaneity. As is well known, the potential endogeneity of factor accumulation rates, particularly physical capital accumulation rates, implies that an OLS treatment of the data may yield biased coefficient estimates [for example, see Benhabib and Jovanovic (1991)]. Benhabib and Spiegel (1994) demonstrate that the coefficient estimate bias on physical and human capital accumulation is likely to be positive. This is of particular concern to our study here. If our physical capital coefficient estimate is biased, it is likely that some of the coefficient estimates on the ancillary variables in the growth regressions will also be biased.

[28] Hall and Jones (1999) provide a similar decomposition, analyzing the impact of social infrastructure on levels of output per worker.

To diminish simultaneity bias problems, I follow a number of recent studies by using lagged values of endogenous variables as instruments for all of the right-hand-side variables in the growth regressions below.[29] I use the generalized method of moments (GMM) application because it does not rely on the presence of random individual effects.

The use of a panel sample of indicators of financial development is likely to provide a significant increase in information relative to a simple cross-sectional study. Benhabib and Spiegel (2000) show that there is a lot of variability across time in financial development measures, in addition to the cross-economy variation that would be available in simple cross-sectional studies. As such, a panel specification provides more information than would be available from a simple cross-sectional study. Moreover, a panel specification also allows the consideration of the robustness of the performance of the financial variables to economy-specific fixed effects.

I examine the distinctions in the entire APEC group, rather than a smaller subset, for two reasons: First, using the entire group increases the sample size, which should enhance the quality of estimation. Second, as the APEC group discusses policy issues for the group as a whole, some understanding of any uniqueness of the group would have relevance. Nevertheless, the APEC nations are a very heterogeneous group, and I demonstrate below that in terms of general characteristics they do not appear notably different than the rest of the world.

The results demonstrate that indicators of financial development are correlated with both total factor productivity growth and investment. However, the indicators of financial development that are correlated with total factor productivity growth differ from those that encourage investment. In addition, many of the results are sensitive to the inclusion of economy fixed effects, which may indicate that the financial development indicators are proxying for broader economy characteristics. Finally, there is a strong indication that the APEC nations in the sample are more sensitive to levels of financial development than the rest of the sample in both facilitating increases in total factor productivity and the enhancement of factor accumulation rates.

This paper is divided into five sections. The following section discusses the methodology used in the paper and introduces the "base" growth accounting specifications. Section three discusses the results from the growth accounting exercises. Section four examines the determinants of rates of physical and human capital accumulation. Section five concludes.

2. Methodology

2.1 Data

The data set is grouped into balanced panels of five-year periods from 1965 through 1985. Details concerning the data set are contained in the data appendix. Data for PPP-adjusted income and labor force participation were obtained from the Summers-Heston Data set, version 5.6. Human capital, which is proxied by average years of schooling in the population above 25 years of age, was obtained from the updated version of the Barro-Lee (1993) data set.[30] Constant dollar estimates of physical capital stocks in local currencies based on a 4 percent decay rate were obtained from Dhareshwar and Nehru (1993).

[29] For example, see Barro and Lee (1993), Caselli, et al (1996), Easterly, et al (1997), Benhabib and Spiegel (2000), and Levine, et al (2000).

[30] Other studies [Hall and Jones (1999), Klenow and Rodriguez-Clare (1997)] adjust the years of schooling measure using the Mincer (1974) estimates of the values of various years of schooling in terms of increased wages. We do not follow this procedure, as it is understood that such estimates only capture pecuniary, rather than social, returns to education [see Mankiw (1997)].

However, efforts to convert the local currency capital stock estimates into common currency estimates by deflating with nominal exchange rates yielded implausible results due to deviations from purchasing power parity, particularly during the early 1980's period of US dollar appreciation. Instead, I used the conversion method in Benhabib and Spiegel (2000). This method uses local currency GDP levels, also calculated by Dhareshwar and Nehru, to construct unit-free capital-output ratios. PPP-adjusted estimates of output levels obtained from the Summers-Heston data set are then used to construct "PPP-adjusted" capital stock estimates according to the formula[31]

$$K_{it} = \left(\frac{K_{it}^{DN}}{Y_{it}^{DN}} \right) Y_{it}^{PPP}, \qquad (6)$$

where K_{it}^{DN} and Y_{it}^{DN} represent real capital stocks and real gross domestic product in economy i in period t in constant 1987 dollars from the Dhareshwar and Nehru data set and Y_{it}^{PPP} represents real gross domestic product of economy i in period t, adjusted for purchasing power parity, obtained from Penn World Tables, version 5.6.

Indicators of financial development were obtained from King and Levine [(1993a) and (1993b)]. The first variable is *DEPTH,* a proxy for the overall size of the formal financial intermediary sector, measured as the ratio of liquid liabilities of the financial sector to GDP.[32] The second indicator is *BANK,* the ratio of deposit money bank domestic assets to deposit money bank assets plus central bank domestic assets. King and Levine (1993a,b) introduce this variable to emphasize the risk-sharing and information services stressed in their theory that banks are most likely to provide. The third variable is *PRIV/Y,* the ratio of claims on the non-financial private sector to GDP, which indicates the share of credit funneled through the private sector.

Financial development is likely to be endogenous with respect to current income levels and investment rates [e.g. Greenwood and Jovanovic (1990)]. To address these endogeneity issues, I use beginning-of-period values of the indicators of financial development. Nevertheless, to the extent that financial markets may develop in anticipation of future investment and growth, simultaneity issues may arise in the analysis.

A cursory first-hand look at the data can be accomplished by comparing the proxies for financial development with labor productivity growth over the entire twenty-year sample. Figure 1 compares labor productivity growth from 1965 to 1985 with initial *DEPTH*. It can be seen that there is a positive but weak relationship for the entire sample. A univariate regression slope of 0.061 is drawn in. This estimate is actually insignificant in OLS estimation. Figure 1 also compares the relationship between initial financial depth and labor productivity growth for the 13 APEC economies in the sample. Here, the estimated slope is actually negative, at –0.018, but also very insignificant.

Figure 2 compares the twenty-year growth experience to the BANK variable, the measure of the share of domestic assets in the banking system. The slope coefficients are again very close to zero and highly insignificant for both the full sample and the APEC countries.

Finally, Figure 3 compares the 20-year growth experience to the PRIV/Y indicator of financial development. Here the relationship is more positive, with a coefficient point estimate of 0.086 for the full sample and 0.139 for the APEC economies. Nevertheless, both relationships are

[31] The Penn World Tables provides some direct estimates of PPP-adjusted capital stocks based on PPP-adjusted investment rate estimates. However, these are only available for a small set of relatively developed countries over a short time period.

[32] King and Levine (1993a) use M3 as a proxy for liquid liabilities when available, and M2 when M3 was unavailable. As in Benhabib and Spiegel (2000), I use M2 throughout, which is available for all countries.

insignificant at standard confidence levels.

The raw data therefore fail to demonstrate much of a relationship at all between initial financial development levels and labor productivity growth. This is surprising in light of the extensive evidence in favor of such a relationship cited above. However, a formal model specification is needed for a proper test of the relationship.

2.2 Base Model Specification

I consider two alternative specifications for a base model of economic growth: The first specification would be associated with the standard neoclassical growth model with human capital added as a factor of production, as in Mankiw Romer and Weil (1992). Under this specification, the income of economy *i* in period *t, Y_{it}*, will be a function of labor, L_{it}, physical capital, K_{it}, and human capital, H_{it}.[33] Adopting a Cobb-Douglas technology, $Y_{it} = A_{it} L_{it}^{\alpha} K_{it}^{\beta} H_{it}^{\gamma} \varepsilon_{it}$, where ε_{it} represents in i.i.d. disturbance term, and taking log differences, the specification follows:

$$\Delta y_{it} = \Delta a_{it} + \alpha \Delta l_{it} + \beta \Delta k_{it} + \gamma \Delta h_{it} + e_{it} \qquad (1)$$

where lower-case letters represent logs and $\Delta x_{it} = \log X_{it} - \log X_{it-1}$ and $e_{it} = \log \varepsilon_{it} - \log \varepsilon_{it-1}$.[34]

The second specification I consider is an endogenous growth specification, similar to that considered in Benhabib and Spiegel (1994). In this model, the growth rate of total factor productivity depends upon both the current level of human capital as well as an interactive term with the disparity of technology levels from the "leader economy," i.e. that economy which has the maximum level of initial TFP in the world. This specification allows the possibility of "catch-up," or technology diffusion across countries, as in Nelson and Phelps (1966).

I adopt the Cobb-Douglas technology, $Y_{it} = A_{it} L_{it}^{\alpha} K_{it}^{\beta} v_{it}$, where v_{it} represents an i.i.d. disturbance term and the following structural specification for the rate of TFP growth

$$\Delta a_{it} = c + g h_{it} + m \left[\frac{h_{it} (y_{maxt} - y_{it})}{y_{it}} \right] + \phi t + \theta i \qquad (2)$$

where y_{maxt} represents the total factor productivity of the "leader nation," approximated in our sample by output per worker in the economy with the greatest level of output per worker, and *t* and *i* represent time and economy-specific fixed effects. Under this specification, the level of human capital in a nation, rather than its growth rate, affects the growth of income.

This leads to the following growth specification:

$$\Delta y_{it} = c + (g - m) h_{it} + m \left[\frac{h_{it} y_{maxt}}{y_{it}} \right] + \alpha \Delta l_{it} + \beta \Delta k_{it} + \phi t + \theta i + u_{it} \qquad (3)$$

where $u_{it} = \log v_{it} - \log v_{it-1}$.

The coefficient *m* is predicted to be positive, reflecting the positive interaction between the amount of technology adoption a economy can conduct, which is an increasing function of its degree of relative backwardness, and its capacity to adopt technology, which is an increasing function of its human capital stock. g is also predicted to be positive. It reflects the importance of

[33] This specification would also be consistent with an "AK-type" endogenous growth model if the coefficients on human and physical capital sum to one.

[34] Note that the above specification does not include initial income since it already incorporates capital accumulation rates directly.

human capital as a source of technological innovation [Romer (1990)]. However, the coefficient on h_{it} is of ambiguous sign, depending on the relative magnitudes of *g* and *m*.

I examine the performance of the two "base regressions" with and without economy-specific fixed effects. A number of recent studies [Knight, et al (1993), Islam (1995), Caselli, et al (1996), and Benhabib and Spiegel (2000)] have used such fixed effects to capitalize on the information available through the full panel of cross-economy data by adjusting for economy-specific characteristics which are constant across time. In particular, our fixed effects may be associated with technological differences that go beyond the choice of technique based on the availability of human or capital resources. Alternatively, they may reflect other economy-specific factors that we have not yet properly identified.

Finally, as in Mankiw, Romer and Weil (1992), I also constrain the factor coefficients to levels consistent with constant returns to scale. In the case of the neoclassical model [equation (1)], this corresponds to the restriction $\alpha+\beta+\gamma=1$. In the endogenous growth specification [equations (3)], this corresponds to the restriction $\alpha+\beta=1$. Note that neither specification relies on any steady state assumptions, and therefore both are equally applicable to the case of economies in transition.

I estimate the growth regressions using generalized method of moments (GMM) to account for the endogeneity of physical capital accumulation. This methodology has been used in a number of panel growth regressions, including Caselli, et al (1996) and Easterly, et al (1997), following techniques advanced by Holtz-Eakin, Newey and Rosen (1988) and Arellano and Bond (1991). Essentially, consistency of the estimators under GMM requires the assumption that all factors except physical capital accumulation are strictly exogenous, while physical capital is only weakly exogenous. For example, for equation (1) I require $E(\Delta k_{it} e_{is}) = 0$ for all $s>t$.

Nevertheless, even after accounting for the endogeneity of physical capital accumulation, the assumptions required for the estimation method to be valid are not innocuous. For example, a number of studies have argued that the financial development indicators will be dependent on rates of income growth [Levine (1999)]. I therefore test the validity of the instruments by first testing for serial correlation in the residuals, and then conducting the Sargan test of the over-identifying restrictions suggested by Arellano and Bond (1991).

I then consider whether financial development plays a role in the determination of economic growth rates. Except for the backwardness variable considered in the endogenous growth specifications, the above models place no structure on the determinants of TFP growth. To consider the role of financial development in TFP growth, I add the indicators of financial development discussed above to the base growth specifications.

3. Growth Accounting Results

3.1 Base model specification

Results for the base growth regressions, obtained through generalized methods of moments (GMM) estimation are displayed in Table 2. The results for the neoclassical growth model [equation (1)] and the endogenous growth model [equation (3)] are displayed with and without the inclusion of economy-specific fixed effects.[35] All of the specifications also include time dummies to account for global shocks over time.

Overall, the significance of rates of accumulation of physical capital and labor are very robust, both with and without the inclusion of fixed effects, although the labor coefficient is insignificant

[35] Estimates of the fixed effect coefficients are available upon request.

in the presence of fixed effects. In addition, it appears that the model specification does not have a large impact on the factor share estimates. However, the inclusion of fixed effects does influence the coefficient values. Without fixed effects, the coefficient point estimate for physical capital accumulation is around 0.62, while with the inclusion of fixed effects, the coefficient rises to 0.91 in the neoclassical specification and 0.74 in the endogenous growth specification. Of course, the labor share estimate exhibits an opposite decline.

The neoclassical specification does most poorly in motivating a role for human capital accumulation. Human capital accumulation enters very insignificantly with a point estimate close to zero. The endogenous growth specification results do suggest a role for human capital in facilitating technological catch-up, but even here the coefficient estimates on levels of human capital are mixed depending on the presence or absence of fixed effects. This result is not surprising given the ambiguity about the predicted coefficient sign in the theory above, depending on the relative importance of technological innovation and catch-up.

Table 1 also includes the test results for serial correlation and the Sargan test of the overidentifying restrictions. The Sargan tests determine the validity of the instruments in the absence of first-order serial correlation.[36] In all specifications, I fail to reject the absence of serial correlation, which allows us to use the Sargan test. The results of this test fail to reject the validity of the over-identifying restrictions.

3.2 Financial Variables Added to Growth Specifications

Table 3 reports the results for adding the measures of financial development to the neoclassical base specification without the inclusion of fixed effects. The base growth specification results are quite similar to those without the inclusion of the financial variables. In particular, the Δh_{it} variable is again very insignificant, casting doubt on the importance of human capital in the textbook neoclassical specification.

The financial variable results demonstrate that the *DEPTH* and *PRIV/Y* measures do enter significantly positive, suggesting that these measures of financial development do facilitate economic growth, even after accounting for factor accumulation rates. However, none of the APEC variables are significant, indicating that there is nothing particularly unique about the relationship between financial development and growth among the APEC countries in the sample.

Table 4 reports the results for the neoclassical base growth model with fixed effects added. Here, the coefficient estimates for the factor shares are quite sensitive to the inclusion of the financial development indicators. Nevertheless, the poor performance of the human capital specification continues to be robust.

In terms of the financial variables themselves, none of the variables enters significantly for the entire sample. However, the interactive APEC dummy is positive and significant for the *DEPTH* variable. This suggests that after controlling for economy fixed effects, the relationship between financial depth and growth is particularly strong for the APEC nations in the sample.

Table 5 adds the financial development indicators to the endogenous growth specification without the inclusion of economy fixed effects. The factor accumulation variables are again significant, with an increase in the average estimated labor share for approximately 0.39 to 0.43. The catch-up terms again failed to enter significantly. It can be seen that the *DEPTH* and *PRIV/Y* variables enter positively and significantly at a five-percent confidence level, while the *BANK* variable is

[36] Since Arellano and Bond (1991) difference the data, the validity of their Sargan test requires the absence of second-order serial correlation. However, I do not difference the data to allow comparisons of specifications with and without fixed effects. The reported first-order serial correlation test is therefore valid.

insignificant. As in the case of the neoclassical specification, the APEC interactive variables fail to enter significantly, suggesting no distinct relationship for the APEC sub-sample.

Table 6 adds economy fixed effects to the specification. Interestingly, the *DEPTH* variable no longer enters significantly, but the interactive *DEPTH*APEC* variable does. This provides some indication that the APEC sample does have a distinct reliance on financial depth after accounting for economy fixed effects. The *PRIV/Y* variable again enters significantly, but not with the introduction of the interactive APEC variable.

In summary, the results provide some evidence that a subset of the indicators of financial development have an influence on growth rates even after accounting for differences in rates of factor accumulation. As such, these indicators would be interpreted in the context of the model specifications above as having a positive impact on total factor productivity. The indicators that entered significantly were the *DEPTH* and *PRIV/Y* variables. However, with the inclusion of economy fixed effects, the *DEPTH* variable was not significant on its own in either the neoclassical or endogenous growth specifications.

Nevertheless, the interactive *DEPTH*APEC* variable did enter with fixed effects included in both the neoclassical and endogenous growth specifications. This was the only case in which the data suggested a special role for financial development in total factor productivity growth for the APEC sub-sample. The *PRIV/Y* variable was also not robust to the inclusion of economy fixed effects under the neoclassical specification, and was not robust to the introduction of the fixed effects and the interactive APEC variable in the endogenous growth specification.

4. Impact of financial development on factor accumulation

The mixed results for financial development in the growth accounting regressions may be considered surprising in light of the strong evidence of a positive relationship between financial development and economic growth in the literature. However, rather than facilitating total factor productivity growth, financial development may encourage factor accumulation. In this section, I examine this possibility by regressing factor accumulation rates on the indicators of financial development listed above. As in the growth regressions, I introduce the financial development indicators into the specification one at a time. As the independent variables in this specification are all pre-determined, I use ordinary least squares estimation.

4.1 Physical Capital Accumulation

Table 7 reports the results of regressing ratios of investment in physical capital to income on the fianncial development indicators without the introduction of economy fixed effects. I find a strong positive and robust relationship between all of the indicators of financial development and physical capital investment rates. Moreover, the *DEPTH*APEC* and *PRIV/Y*APEC* interactive variables are positive and significant as well, indicating that the APEC countries in the sample are particularly dependent on financial development for their rates of physical capital accumulation.

Table 8 repeats the exercise with the inclusion of dummies for economy fixed effects. As in the growth regressions above, the performance of the financial indicators deteriorates, suggesting that to some extent indicators of financial development are proxying for a broader set of economy characteristics that are conducive to enhancing economic growth. The *DEPTH* and BANK variables fail to enter significantly, while the *PRIV/Y* variable actually enters significantly with the wrong sign when the interactive APEC variable is introduced. Nevertheless, the interactive *DEPTH*APEC* and *PRIV/Y*APEC* variables are robust to the inclusion of economy fixed effects, indicating again that there is a special dependence on financial development as measured by these variables on rates of physical capital accumulation among the APEC nations in the sample.

4.2 Human capital accumulation rates

I next turn to investment in human capital. I interpret the investment in human capital as the change in the log of average years of schooling in the labor force, Δh_{it}. However, since the potential years of schooling one can attain is censored from above, I include the initial years of schooling in the specification. I expect a negative coefficient on initial years of schooling.

The results for human capital accumulation without the inclusion of economy fixed effects are reported in Table 9. h_{it} enters significantly with its expected negative sign. However, the performance of the financial variables is weaker than in the physical capital regressions. *BANK* enters significantly with the correct sign, but *DEPTH* and *PRIV/Y* are both insignificant. The interactive APEC variables *APEC*DEPTH* and *APEC*BANK* also enter positively and significantly, indicating a special relationship between financial development and human capital accumulation rates among the APEC economies.

Table 10 repeats the exercise with the inclusion of economy fixed effects. The *DEPTH* and *BANK* variables both enter significantly positive. However, none of the interactive APEC variables are significant after accounting for economy fixed effects. The *PRIV/Y* variable is also insignificant.

5. Conclusion

It is commonly believed that financial development plays an important role in facilitating economic growth. However, a simple correlation between initial levels of financial development and subsequent growth performance fails to reveal much of a pattern at all in a large cross-section. Nevertheless, after accounting for other cross-economy differences in a standard formal growth model, one can find evidence that financial development has a positive impact on both total factor productivity growth and rates of factor accumulation.

This paper pursued such a path by repeating the empirical methodology used in Benhabib and Spiegel (2000). Indicators of financial development were first introduced into a growth specification to examine whether financial development facilitated total factor productivity growth, and then directly into regressions of rates of factor accumulation.

The results demonstrate that different types of financial development are important for different channels of economic growth. Without accounting for economy-specific fixed effects, I find that the liquidity measure of the ratio of financial assets of the private sector to GDP, *PRIV/Y,* significantly enhance rates of total factor productivity growth. However, the liquidity measure is not robust to the inclusion of economy-specific fixed effects.

I found much stronger results concerning the importance of financial development for physical capital accumulation rates. Without accounting for economy-specific fixed effects, all of the financial development indicators were shown to significantly increase the rates of physical capital accumulation. However, even here there was some lack of robustness to the inclusion of fixed effects. With economy fixed effects included, only the proxy for the share of domestic assets mediated by the banking sector, BANK, remained robust.

The results for human capital accumulation rates were similar. Only the BANK variable entered as a significant predictor of rates of human capital accumulation, and it was robust to the inclusion of economy-specific fixed effects. The PRIV/Y variable also entered positively into the determination of rates of human capital accumulation after accounting for economy-specific fixed effects.

The lack of robustness of the financial variables to the introduction of economy fixed effects raises the issue that the financial variables may in fact be proxying for a number of other factors

that are correlated with financial development. To some extent, then, the economy fixed effects results cast doubt on a special role for financial development in enhancing economic growth rates.

I also examined whether the relationship between financial development and economic growth was unique for the subset of the nations in the sample that were APEC economies. I did find evidence that the APEC economies were more dependent on financial development than the rest of the sample. The APEC economies were significantly more dependent on the financial depth measure for total factor productivity growth than the rest of the sample after accounting for economy-specific fixed effects in both the neoclassical and the endogenous growth specifications.

These economies were also found to be particularly sensitive to financial development in the determination of rates of physical capital accumulation. Both the measure of financial depth and the ratio of financial sector claims on the private non-financial sector to GDP entered significantly positive and were robust to the inclusion or exclusion of economy-specific fixed effects in the specification.

Finally, the financial DEPTH and BANK variables were both found to be significant predictors of rates of human capital accumulation without accounting for economy-specific fixed effects, although neither of these results were robust to the inclusion of fixed effects.

The relatively positive results for the unique relationship between financial development and growth were somewhat surprising, given the extensive heterogeneity in the set of APEC economies in the sample. These results suggest that while financial development appears to be generally beneficial to economic growth, there should be a particular effort to encourage financial development within the APEC economies. The positive role for financial depth in encouraging total factor productivity growth also suggests that the payoffs from increased financial development may have long-lasting effects on steady-state rates of economic growth, rather than only temporarily increasing rates of physical capital accumulation.

REFERENCES

Arellano, Manuel and Stephen Bond. (1991). "Some Tests of Specification of Panel Data: Monte Carlo Evidence and an Application to Employment Equations," *Review of Economic Studies*, 58, 277-298.

Barro, Robert J. and Jong Wha Lee. (1993). "International Comparisons of Educational Attainment," *Journal of Monetary Economics*, 32, 363-394.

Banerjee, A. and A. Newman. (1991). "Risk Bearing and the Theory of Income Distribution," *Review of Economic Studies*, 58, 211-265.

Beck, Thorsten, Ross Levine and Norman Loayza. (2000). "Finance and the Sources of Growth" *Journal of Financial Economics*, 58, 261-300.

Benabou, Roland. (1996). "Equity and Efficiency in Human Capital Investment: The Local Connection," *Review of Economic Studies*, 63, 237-264.

Bencivenga, Valerie R. and Bruce D. Smith. (1991). "Financial Intermediation and Endogenous Growth," *Review of Economic Studies*, 58, 195-209.

Benhabib, Jess and Boyan Jovanovic. (1991). "Externalities and Growth Accounting," *American Economic Review*, 81, 82-113.

Benhabib, Jess and Mark M. Spiegel. (1994). "The Role of Human Capital in Economic Development: Evidence from Aggregate Cross-Country Data," *Journal of Monetary Economics*, 34, 143-173.

Benhabib, Jess and Mark M. Spiegel. (2000). "The Role of Financial Development in Growth and Investment," *Journal of Economic Growth*, 5, 341-360.

Caselli, Francesco, Gerardo Esquivel, and Fernando Lefort. (1996). "Reopening the Convergence Debate: A New Look at Cross-Country Growth Empirics," *Journal of Economic Growth*, 1, 363-390.

Clague, Christopher, Philip Keefer, Stephen Knack, and Mancur Olson. (1999). "Contract-Intensive Money: Contract Enforcement, Property Rights, and Economic Performance," *Journal of Economic Growth*, 4, 185-212.

Dhareshwar, Ashok and Vikram Nehru. (1993). "A New Database on Physical Capital Stock: Sources, Methodology and Results," *Revista de Analisis Economico*, 8, 37-59.

Easterly, William, Norman Loayza, and Peter Montiel. (1997). "Has Latin America's Post-Reform Growth Been Disappointing?," *Journal of International Economics*, 43, 287-311.

Galor, Oded and Joseph Zeira. (1993). "Income Distribution and Macroeconomics," *Review of Economic Studies*, 60, 35-52.

Greenwood, Jeremy and Boyan Jovanovic. (1990). "Financial Development, Growth, and the Distribution of Income," *Journal of Political Economy*, 98, 1076-1107.

Hall, Robert E. and Charles I. Jones. (1999). "Why Do Some Countries Produce So Much More Output Per Worker Than Others?," *Quarterly Journal of Economics*, 114, 83-116.

Holtz-Eakin, Douglas, Whitney Newey and Harvey S. Rosen (1988). "Estimating Vector

Autoregressions with Panel Data," *Econometrica*, 56, 1371-1395.

Islam, Nazrul. (1995). "Growth Empirics: A Panel Data Approach*," Quarterly Journal of Economics*, 110, 1127-1170.

King, Robert G., and Ross Levine. (1993a). "Finance and Growth: Schumpeter Might Be Right," *Quarterly Journal of Economics*, 108, 717-738.

King, Robert G., and Ross Levine. (1993b). "Finance, Entrepreneurship, and Growth," *Journal of Monetary Economics*, 32, 513-542.

Klenow, Peter J. and Andres Rodriguez-Clare. (1997). "The Neoclassical Revival in Growth Economics: Has it Gone Too Far?," *N.B.E.R. Macroeconomics Annual 1997*, Cambridge: MIT Press.

Knight, Malcolm, Norman Loayza, and Delano Villanueva. (1993). "Testing the Neoclassical Theory of Economic Growth: A Panel Data Approach," *International Monetary Fund Staff Papers*, 40, 512-541.

Levine, Ross. (1999). "Law, Finance, and Economic Growth," *Journal of Financial Intermediation*, 8, 8-35.

Levine, Ross, Norman Loayza and Thorsten Beck (2000) "Financial Intermediary Development and Growth: Causes and Causality," *Journal of Monetary Economics*, 2000, 46(1): 31-77.

Levine, Ross and Sara J. Zervos. (1993). "What Have We Learned About Policy and Growth from Cross-Country Regressions?," *American Economic Review*, 83, 426-430.

Levine, Ross and Sara J. Zervos. (1998). "Stock Markets, Banks, and Economic Growth," *American Economic Review*, 88, 537-558.

Ljungqvist, Lars. (1993). "Economic Underdevelopment: The Case of a Missing Market for Human Capital," *Journal of Development Economics*, 40, 219-239.

Mankiw, N. Gregory. (1997). "Comment on The Neoclassical Growth Revival in Growth Economics," *N.B.E.R. Macroeconomics Annual 1997*, Cambridge: MIT Press

Mankiw, N. Gregory, David Romer, and David N. Weil. (1992). "A Contribution to the Empirics of Economic Growth," *Quarterly Journal of Economics*, 106, 407-437.

Mincer, J. (1974). *Schooling, Experience and Earnings*, New York: Columbia University Press.

Nelson, Richard R. and Edmund S. Phelps. (1966). "Investment in Humans, Technological Diffusion, and Economic Growth," *American Economic Review*, 56, 69-75.

Newey, Whitney, K. and Kenneth D. West. (1987). "Hypothesis testing with efficient method of moments estimation," *International Economic Review*, 28, 777-787.

Young, Alwyn (1992), "A Tale of Two Cities: Factor Accumulation and Technical Change in Hong Kong and Singapore," N.B.E. R. Macroeconomics Annual, 13-54.

Data Appendix:

Data is a balanced panel of five year periods from 1960 through 1985.
For each regression, if any of the observations from the set of independent and dependent
Variables were missing, we excluded the economy
That contained the missing data.
For each regression, the 1960 observation for each economy was deleted.

Depth is average from time *t*-4 to *t* of M2/GDP. Source. IFS, lines 34 + 35/line99b.

Bank is average from time *t*-4 to *t* of deposit money bank domestic assets divided by deposit money bank domestic assets plus central bank domestic assets.
Source: IFS lines 12a-f/(lines 12a-f + lines 22a -f)

PRIV/Y Average from time *t* - 4 to *t* of credit issued to private enterprises divided by GDP. Source: IFS, lines 32d/line 99b.

$\mathbf{h_t - h_{t-1}}$ Log difference in years of schooling per worker

$\mathbf{I/Y_{it}}$ Investment per unit of GDP

$\Delta\ \mathbf{h_{it}}$ Growth of human capital

$\Delta\ \mathbf{k_{it}}$ Growth of physical capital

$\mathbf{h_{it}}$ log level of average years of schooling for adults over 25 years of age in economy *i* and time *t*. Source: Barro-Lee (1993).

$\Delta\ \mathbf{l_{it}}$ Growth of labor

$\mathbf{l_{it}}$ Log of labor force in economy *i* at time *t*. Source: PWT5.6.

$\mathbf{y_{it}}$ is Log of GDP in economy *i* at time *t*. GDP defined as RGDPW*LAB, where LAB refers to the labor force and is defined as RGDPCH/RGDPW*POP, where RCGDPCH is output per person measured by the chain rule, RGDPW is output per worker, and POP is the population Source: PWT 5.6.

$\mathbf{h(Y_{maxt}/Y_{it})}$ is output per worker in "leader" economy for time *t* divided by output per worker for time *t*

Apec is a dummy variable, that is one when the country in the sample is an APEC economy and zero otherwise. APEC economies are Australia, Canada, Chile, Japan, Korea, Malaysia, Mexico, New Zealand, Peru, Philippines, Thailand, USA, Indonesia, Chinese Taipei, and Singapore.
This variable is used with Bank, Priv/Y and Depth to create interactive variables.

Table 1

Summary Statistics

	Non-APEC Sample	**APEC Sample**	**APEC Developing**	**APEC Industrial**
ΔY_{it}	.03558 (.0289)	.04732 (.03137)	.0549 (.03545)	.036633 (.0208)
Δl_{it}	.0188 (.0125)	.0231 (.008)	.0271 (.0058)	.0176 (.0076)
Δk_{it}	.048 (.0285)	.0647 (.0401)	.0758 (.044)	.049 (.027)
H_{it}	1.4892 (.5404)	1.8029 (.4452)	1.4862 (.2803)	2.2462 (.1579)
Δh_{it}	.1055 (.15515)	.09829 (.1032)	.1349 (.1099)	.04698 (.06610)
I/Y_{it}	.2462 (.08023)	.2624 (.0646)	.2668 (.0685)	.2562 (.0594)
DEPTH	.4041 (.2256)	.3777 (.1967)	.2747 (.1018)	.5220 (.2081)
BANK	.7369 (.1914)	.7868 (.1681)	.7048 (.1687)	.9016 (.0752)
PRIV/Y	.3256 (.2267)	.3072 (.23155)	.2132 (.1458)	.4388 (.2659)
# of Observations	190	60	35	25

Table 2

Base Growth Regressions[1]

Dependent Variable : ΔY_{it}

	Without Fixed Effects		Fixed Effects Included	
	Neoclassical	**Endogenous**	**Neoclassical**	**Endogenous**
c	.0070** (.0028)	.0004 (.0079)	-.0043 (.0088)	-.0080 (.0198)
Δl_{it}	.3861** (.069)	.3845** (.0698)	.0934 (.2452)	.2583 (.1592)
Δk_{it}	.6168** (.0694)	.6154** (.0698)	.9111** (.2473)	.7416** (.1592)
Δh_{it}	-.003 (.0078)		-.0045 (.0169)	
h_{it}		.0018 (.0019)		-.0328* (.0182)
$h_t(Y_{maxt}/Y_{it})$		.0008 (.0026)		.0271** (.0130)
Durbin-Watson	1.901	1.9087	2.1189	2.1117
Sargan	12.8796	14.6714	34.9616	20.4263
D-Statistic				
#Observations	305	305	305	305
Degrees of Freedom				

[1] Estimated by generalized method of moments with ΔY_{it-1} and Δk_{it-1} used as instruments. All specifications include time dummies. Dummy coefficients estimates are available upon request. ** indicates statistical significance at the five percent confidence level while * indicates statistical significance at the ten percent confidence level.

Table 3

Neoclassical Specification[1]

Dependent Variable: ΔY_{it}

	1	2	3	4	5	6
c	.0006 (.0038)	.0002 (.0038)	.006 (.0058)	.0053 (.0059)	.0009 (.0035)	.0006 (.0035)
Δl_{it}	.4858** (.0757)	.49** (.0788)	.4553** (.0691)	.4495** (.0703)	.4045** (.0798)	.3926** (.0811)
Δk_{it}	.5127** (.0774)	.5086** (.0806)	.5410** (.0704)	.5471** (.0716)	.5965** (.0808)	.6083** (.0821)
Δh_{it}	.0014 (.0087)	.0013 (.0086)	.0035 (.0079)	.0032 (.008)	-.0010 (.008)	-.0009 (.008)
DEPTH	.014** (.0057)	.01335** (.0057)				
*DEPTH*APEC*		.004 (.0062)				
BANK			.0020 (.0065)	.0027 (.0068)		
*BANK*APEC*				-.0011 (.0034)		
PRIV/Y					.0110* (.0058)	.0096* (.0056)
*PRIV/Y*APEC*						.0031 (.0071)

[1] Estimated by GMM with ΔY_{it-1} and Δk_{it-1} used as instruments. All specifications include time dummies. Dummy coefficients estimates are available upon request. ** indicates statistical significance at the five percent confidence level while * indicates statistical significance at the ten percent confidence level.

Table 4

Neoclassical Specification [1]
(Fixed Effects Added)

Dependent Variable : ΔY_{it}

	1	2	3	4	5	6
c	-.0196* (.0103)	-.0145 (.0111)	-.0236 (.0244)	-.0287 (.026)	-.0137 (.0121)	-.0129 (.0120)
Δl_{it}	.3919 (.2492)	.4545* (.2388)	.9662** (.2936)	.9324** (.2828)	.1818 (.2222)	.1871 (.2355)
Δk_{it}	.6059** (.2508)	.5439** (.2405)	.0251 (.2959)	.0592 (.2851)	.8217** (.2247)	.8169** (.238)
Δh_{it}	.0020 (.0182)	.0015 (.0180)	.0086 (.0127)	.0082 (.0121)	-.0035 (.0171)	-.0004 (.0181)
DEPTH	.0234 (.0246)	.0037 (.0279)				
*DEPTH*APEC*		.0849* (.0435)				
BANK			.0045 (.0249)	.0111 (.0268)		
*BANK*APEC*				-.0496 (.0502)		
PRIV/Y					.0275 (.0302)	.0233 (.0299)
*PRIV/Y*APEC*						.018 (.0524)

[1] Estimated by GMM with ΔY_{it-1} and Δk_{it-1} used as instruments. All specifications include time dummies. Dummy coefficients estimates are available upon request. ** indicates statistical significance at the five percent confidence level while * indicates statistical significance at the ten percent confidence level.

Table 5

Endogenous Growth Specification[1]

Dependent Variable : ΔY_{it}

	1	2	3	4	5	6
c	-.0138 (.0105)	-.0133 (.0106)	-.0010 (.0140)	-.0055 (.0152)	-.0077 (.0089)	-.0068 (.009)
Δl_{it}	.4565** (.0767)	.4478** (.0786)	.436** (.0782)	.4325** (.0788)	.4044** (.0796)	.394** (.0804)
Δk_{it}	.5434** (.0767)	.5521** (.0786)	.5639** (.0782)	.5674** (.0788)	.5955** (.0796)	.6059** (.0804)
h_{it}	.00009 (.0028)	.00008 (.0029)	.0008 (.0027)	.0011 (.0027)	.0011 (.0021)	.0009 (.0021)
$h_t(Y_{maxt}/Y_{it})$	.0047 (.0033)	.0044 (.0033)	.0018 (.0036)	.0027 (.0038)	.0019 (.0028)	.0017 (.0028)
DEPTH	.0144* (.0080)	.0138* (.008)				
*DEPTH*APEC*		.0015 (.0060)				
BANK			.0019 (.0105)	.0043 (.0109)		
*BANK*APEC*				-.0026 (.0035)		
PRIV/Y					.012* (.0062)	.0111* (.0061)
*PRIV/Y*APEC*						.0015 (.0068)

[1] Estimated by GMM with ΔY_{it-1} and Δk_{it-1} used as instruments. All specifications include time dummies. Dummy coefficients estimates are available upon request. ** indicates statistical significance at the five percent confidence level while * indicates statistical significance at the ten percent confidence level.

Table 6

Endogenous Growth Specification [1]
(Fixed Effects Added)

Dependent Variable : ΔY_{it}

	1	2	3	4	5	6
c	-.0203 (.021)	-.0136 (.0209)	-.0299 (.0328)	-.0334 (.0343)	-.0182 (.0194)	-.0189 (.0200)
Δl_{it}	.4822** (.1538)	.5909** (.1502)	.7723** (.1856)	.7528** (.1808)	.3187** (.1455)	.3453** (.1566)
Δk_{it}	.5177** (.1538)	.4090** (.1502)	.2276 (.1856)	.2471 (.1808)	.6812** (.1455)	.6546** (.1566)
h_{it}	-.0338* (.0190)	-.0518** (.019)	-.0331* (.017)	-.0317* (.0171)	-.045** (.0186)	-.0439** (.0186)
$h_t(Y_{maxt}/Y_{it})$	.0272** (.0135)	.0437** (.0137)	.0269** (.0128)	.026** (.0129)	.0365** (.0135)	.0369** (.0135)
DEPTH	.0231 (.0233)	-.0122 (.0253)				
*DEPTH*APEC*		.1496** (.0319)				
BANK			.0162 (.0235)	.0201 (.0254)		
*BANK*APEC*				-.0331 (.0476)		
PRIV/Y					.035** (.0169)	.0246 (.0178)
*PRIV/Y*APEC*						.0351 (.028)

[1] Estimated by GMM with ΔY_{it-1} and Δk_{it-1} used as instruments. All specifications include time dummies. Dummy coefficients estimates are available upon request. ** indicates statistical significance at the five percent confidence level while * indicates statistical significance at the ten percent confidence level.

Table 7

Financial development and investment per unit of GDP

Dependent Variable **I/Y_{it}**

	1	**2**	**3**	**4**	**5**	**6**
C	.1778** (.0133)	.1751** (.0133)	.1342** (.019)	.1359** (.0191)	.1911** (.0128)	.1915** .0128
DEPTH	.0921** (.0182)	.0869** (.0183)				
*DEPTH*APEC*		.0524** (.0243)				
BANK			.1253** (.0226)	.1198** (.0233)		
*BANK*APEC*				.0131 (.0136)		
PRIV/Y					.0753** (.0217)	.061** (.0227)
*PRIV/Y*APEC*						.0619** (.0303)
Number of observations	310	310	305	305	325	325
DF	304	303	299	298	319	318
R-Square	.1402	.1532	.148	.150	.094	.106

Table 8

Financial development and investment per unit of GDP
(Fixed Effects Included)

Dependent Variable I/Y_{it}

	1	**2**	**3**	**4**	**5**	**6**
C	.2256** (.034)	.2357** (.0341)	.1669** (.0482)	.1752** (.0504)	.2471** (.0315)	.2645* (.0312)
DEPTH	.0178 (.0485)	-.0183 (.0510)				
*DEPTH*APEC*		.2194** (.103)				
BANK			.0741* (.044)	.0647 (.0471)		
*BANK*APEC*				.0765 (.1345)		
PRIV/Y					-.0463 (.0507)	-.1301** (.0549)
*PRIV/Y*APEC*						.3119** (.0880)
Number of observations	310	310	305	305	325	325
DF	243	242	239	238	255	254
R-Square	.573	.581	.591	.591	.594	.613

Table 9

Log difference in years of schooling per worker

Dependent Variable: $h_t - h_{t-1}$

	1	2	3	4	5	6
C	.2477** (.0232)	.2516** (.0232)	.1695** (.0298)	.1767** (.0299)	.1990** (.022)	.201** (.0222)
h_{it-1}	-.1121** (.0120)	-.1182** (.0124)	-.1132** (.0128)	-.1184** (.0130)	-.0831** (.0112)	-.0848** (.0114)
DEPTH	.0342 (.0295)	.0336 (.0294)				
*DEPTH*APEC*		.0675* (.0396)				
BANK			.1200** (.039)	.1126** (.0395)		
*BANK*APEC*				.0388* (.0208)		
PRIV/Y					.0218 (.039)	.0153 (.0398)
*PRIV/Y*APEC*						.0418 (.0515)
Number of observations	236	236	232	232	244	244
DF	230	229	226	225	238	237
R-Square	.321	.330	.298	.309	.239	.241

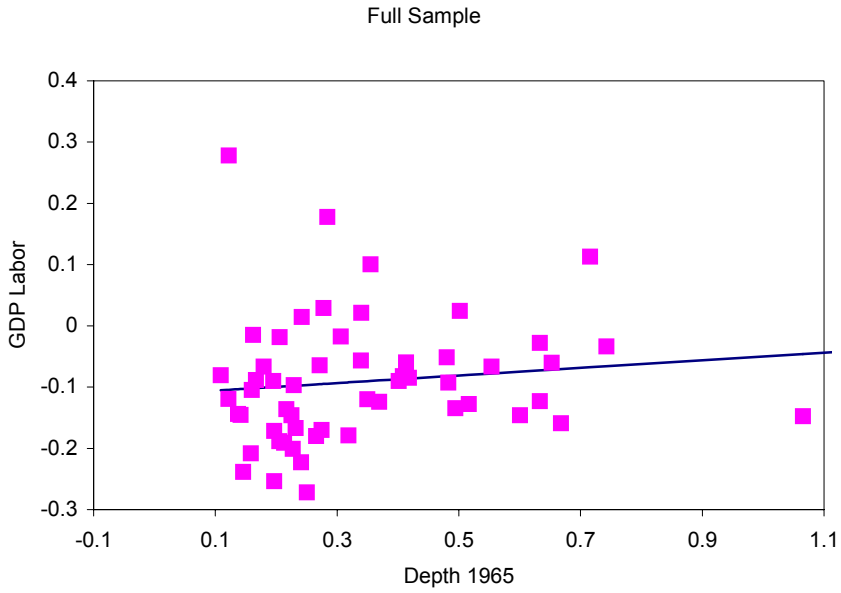
Table 10

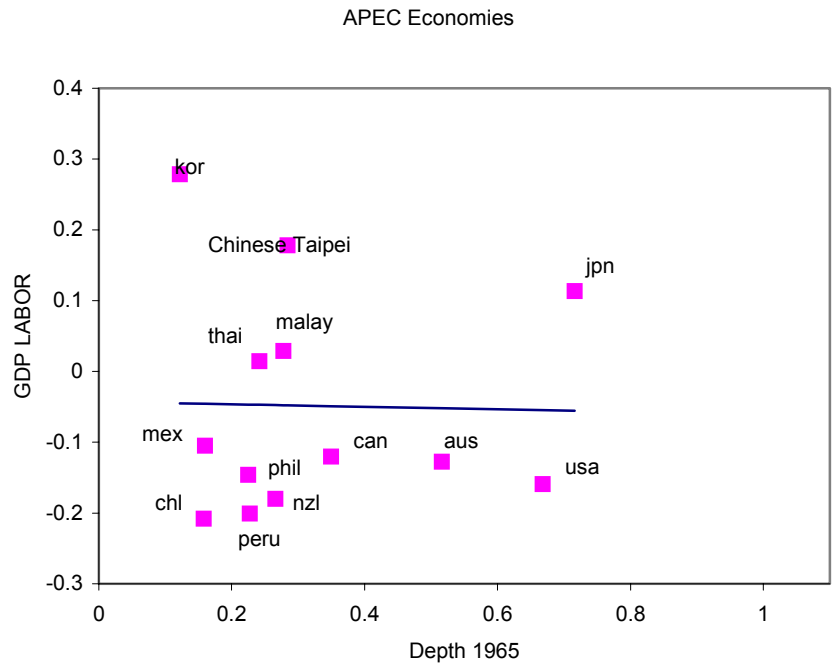
Log difference in years of schooling per worker
(Fixed Effects Included)

Dependent Variable $\mathbf{h_t - h_{t-1}}$

	1	2	3	4	5	6
C	.8527** (.1032)	.853** (.104)	.7516** (.1414)	.7656** (.1483)	.9647** (.109)	.9649** (.1093)
h_{it-1}	-.591** (.068)	-.5909** (.0685)	-.5695** (.0673)	-.5707** (.0676)	-.5882** (.0678)	-.5886** (.0682)
DEPTH	.3507** (.1293)	.3488** (.1403)				
*DEPTH*APEC*		.0089 (.2540)				
BANK			.1971** (.0917)	.1838* (.1008)		
*BANK*APEC*				.0773 (.2416)		
PRIV/Y					-.0168 (.1201)	-.0137 (.1243)
*PRIV/Y*APEC*						-.0271 (.2687)
Number of observations	236	236	232	232	244	244
DF	172	171	169	168	178	177
R-Square	.5604	.5604	.5586	.5589	.5319	.5319

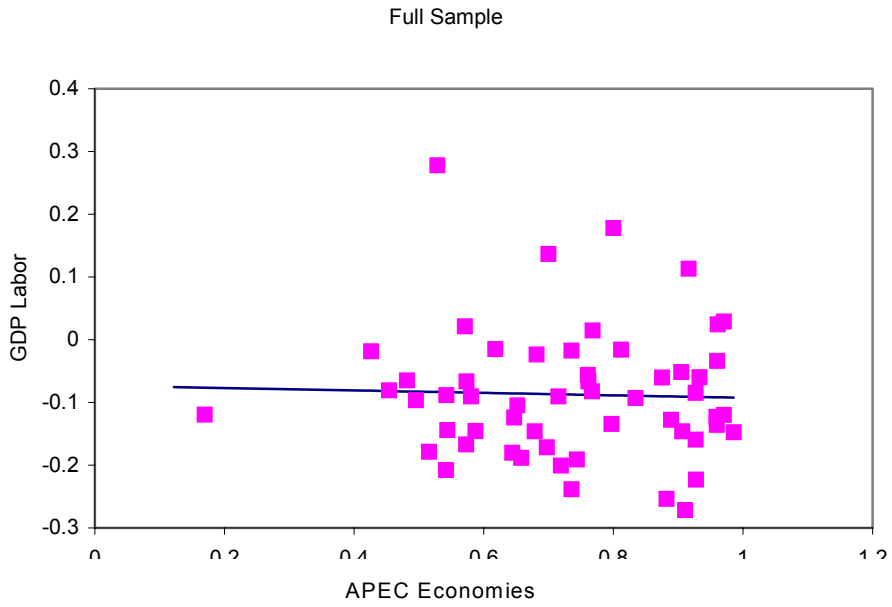
Figure 1: Growth in GDP/ LABOR 1965-1985 and 1965 Financial Depth.[37]

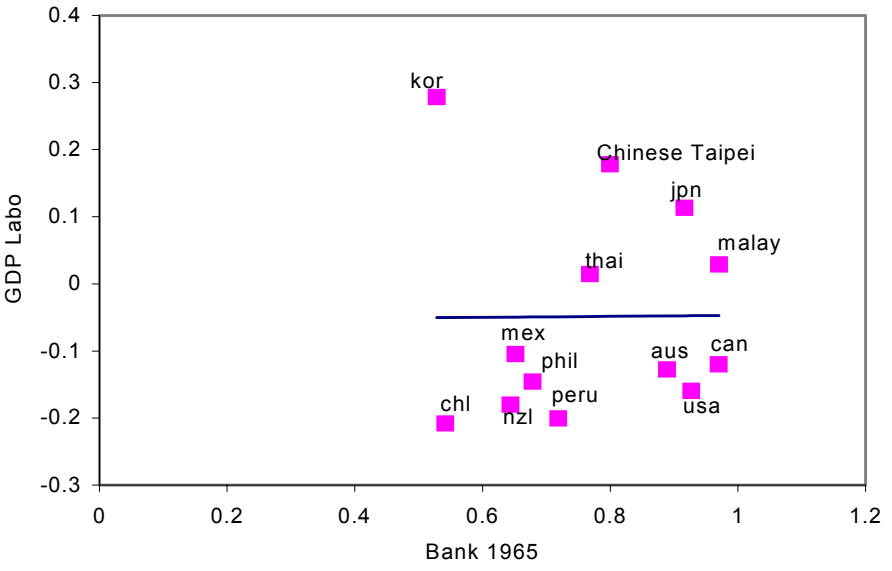




[37] Financial Depth is M2/GDP.

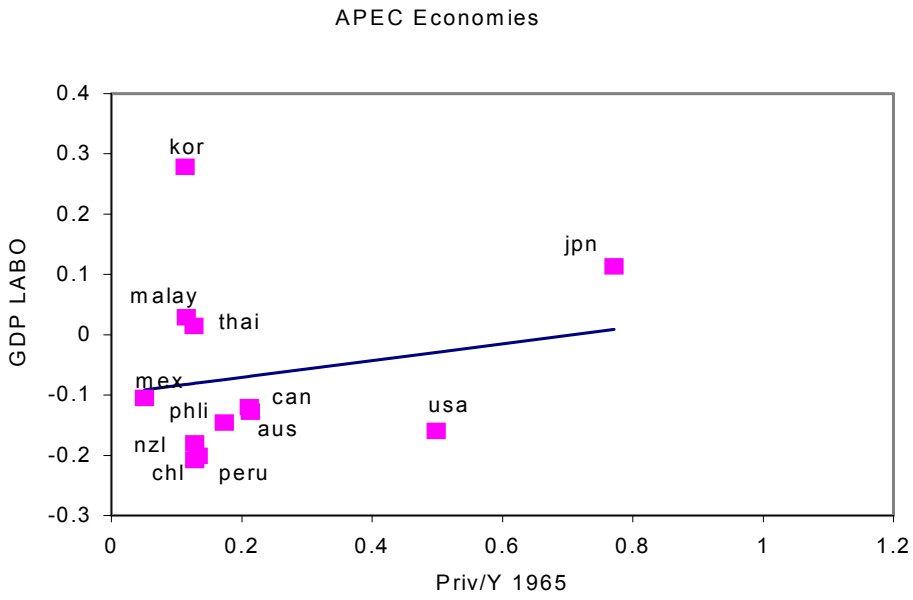
Figure 2: Growth in GDP/LABOR 1965-1985 and 1965 Bank level[38]





[38] Bank is deposit money bank domestic assets divided by deposit money bank domestic asets plus central bank domestic assets. Source: IFS lines 12a-f/(lines 12a-f + lines 22a-f)

Figure 3: Growth GDP/LABOR 1965-1985 and 1965 PRIV/Y level[39]



[39] PRIV/Y is credit issued to private businesses divided by GDP.

FINANCE AND ECONOMIC DEVELOPMENT IN EAST ASIA

Yung-Chul Park,
Korea University

I. Introduction

Financial systems and their evolutionary development have been a fundamental component of the overall development process in East Asia. This process has been driven by real economic growth and the attendant growth and change in demand for various types of financial services, by institutional development within the financial system, and by changes in government policies concerning finance.[1]

East Asia's financial systems, except for those of Singapore and Hong Kong, China, have been quintessentially intermediary or bank-based systems. Before the financial crisis broke out in 1997, these systems had been characterized as "repressive" in the sense that the interest rates on deposits and loans and asset management including loan allocation were sanctioned, often below market clearing rates, by the government. In many East Asian countries, financial repression was predicated on the development strategy in which finance was used as an instrument of industrial policy to achieve a multiple of objectives: to promote exports; to build physical infrastructure; and to supply long-term finance at a low cost to firms in manufacturing.

Beginning in the early 1980s, the East Asian governments moved to relaxing their control over the interest rates and lending policies at banks and other non-bank financial intermediaries, to fostering capital markets, and gradually opening financial markets to foreign competition. The process of financial liberalization had been accelerated as the liberal ideology of the Washington consensus swept through the region before the crisis broke out in 1997. Since then, a large number of studies have come out to lay the blame on the structural weaknesses of the East Asia's financial systems for the crisis. Some of these studies even conclude that the crisis demonstrates that better the market oriented Anglo-American financial system works better than the intermediary based East Asian system (Frankel and Roubini, 2000).

The purpose of this paper to analyze the extent to which the fragility of East Asia's financial systems was responsible for the 1997 crisis and whether the crisis proves that the market-oriented financial system is more efficient in allocating resources and less vulnerable to financial crises than an intermediary based system. The rest of the paper is organized as follows. Section II discusses financial factors in economic development. This is followed by the role of financial intermediaries in section III. Financial sector fragility as a major cause of the crisis is analyzed in section IV. The relative efficiency of the intermediary-based system to the market-based system in emerging market economies in East Asia is analyzed in section V. Concluding remarks are found in a final section.

II. Financial Factors in Economic Development

A financial system is an economic sector that uses productive factors to provide the services of a payment system, financial intermediation, and access to securities markets. It also provides financial instruments that meet the diverse tastes, needs, and circumstances of lenders and borrowers. It has its own industries—commercial banking, investment banking, and insurance—and also a superstructure of regulatory authorities.

[1] See Table I-IV for financial development in East Asia

Historical experience shows that financial development in general proceeds from simple lending and borrowing arrangements to a system dominated by commercial banking and eventually to a broader system complemented by a variety of nonblank financial institutions and well-functioning money and capital markets. Thus, in most developing countries, largely because of problems of information and uncertainty, open capital markets for primary securities such as stocks, bonds, mortgages, and commercial bills are insignificant channels for mobilizing and allocating savings. Therefore, for all practical purposes, the banking system—broadly defined to include a variety of depository institutions—dominates the financial system and is usually the only organized credit market available.

The observed correlation between economic development and financial sophistication suggests financial institutions and markets play important roles in economic growth and development. However, it has been difficult to explain theoretically either the importance or the evolutionary process of financial structure. This difficulty stems largely from the lack of understanding of the mechanism of interactions between the financial system on the one hand and the real sector of the economy on the other. As a result, both the quantitative and the qualitative importance of the efficiency of financial structure remains controversial. Views range from those arguing the irrelevance of finance to those attaching strategic importance to it. This controversy has made it difficult to identify financial policies for developing countries that are consistent with objectives of growth and industrialization.

During the 1950s and 1960s there were two lines of thought in the literature concerning the link between financial factors and real economic growth. Gurley and Shaw (GS) (1955) focused on "financial capacity" as an important determinant of aggregate demand. According to GS, financial intermediaries could extend borrowers' financial capacity as they transformed primary securities issued by firms into the indirect securities desired by savers. This enabled certain classes of borrowers to obtain greater quantities of credit at better terms than they could otherwise obtain from issuing securities. The GS argument was more or less ignored, in part because it was not presented in a "rigorous" manner, and in part because it was outside the period's mainstream of development economics—with its heavy Keynesian influence and dismissal of financial factors.

The dominant position was reinforced by the formulation of the Modigliani Miller (MM) proposition (1958) that real economic decisions are independent of financial structure. Consistent with the neoclassical world of perfect markets, MM's work was felt to provide a rigorous justification for abstracting from financial considerations in microeconomic analysis. This, in turn, provided a basis for Keynesian macroeconomics' devoting attention to the market for money for transaction purposes (the medium of exchange) but ignoring financial factors, including credit markets.

The prevailing view in the 1960s was that interest rates should be kept relatively low to stimulate capital formation. This implicitly means an expansionary monetary policy as a means of promoting economic growth in developing countries. A similar message was carried by the monetary growth models that flourished in the 1960s. In these models, real cash balances were treated as part of wealth and as substitutes for physical assets. Economic agents could therefore satisfy their savings objectives by accumulating either one. Inflation is a tax on holding money, and thus encourages accumulation of physical assets. Given the propensity to save, inflation then increases the GNP growth rate if it speeds up fixed capital formation. Long (1983) argues such models provided a rationale for inflationary policies and the theoretical underpinning for aggressively expansionary fiscal policies that allocated a large share of resources to development expenditures in the 1950s and 1960s.

In the 1960s, while various development strategies and models ignored the financial sector, economic historians examined the experiences of financial development in search of clues that might shed light on how finance affects real economic activity (Cameron 1967, 1972). In a classic contribution, Goldsmith (1969) documented that as real income and wealth increase, in the

aggregate and per capita, the size and complexity of the financial superstructure also grow. He could not, however, determine the direction of causality. He observed that underlying causality is likely to differ among and within countries from stage to stage of industrialization. In short, causality can run in both directions. The growth and diversity of financial instruments, markets and participants can stimulate savings and investment, as well as improve the economy's allocative efficiency. Or financial development can simply be an aspect of economic growth whose main causes are elsewhere.

Gerschenkron (1962) emphasized a major role for banking. Based on his examination of Central Europe, Germany, and Russia, he argued that the banking system could play a key role at certain development stages, because it served as the prime source of both capital and entrepreneurship. A modern interpretation of this thesis is that financing through banks is less costly and more advantageous than financing directly from anonymous, organized markets. This argument, of course, rests on the assumption that banks can reduce the problems of adverse selection and moral hazard stemming from asymmetric information between lenders and borrowers, because the banks can economize on the costs of monitoring and controlling the activities of borrowers. Gerschenkron also contented that firms strongly prefer self-finance, thereby suggesting that the importance of internal finance rises with economic development.

The leading role of financial intermediaries was further elaborated by Patrick (1966), who developed the hypothesis of supply-lending and demand-following finance. Demand-following means that as an economy grows, it generates additional and new demands for financial services, which brings about a supply response in the growth of the financial system. Patrick further suggested that the creation of financial institutions and the supply of their financial assets, liabilities, and services in advance of demand for them can induce growth by generating incentives to savers to increase their savings rate and to entrepreneurs to increase their investment level. Emphasizing the relevance of supply-leading finance in the early stages of development, Patrick advocated realistic interest rate policies and promotion of the efficiency of financial intermediation through private market mechanisms in developing countries.

In many developing countries in the 1960s, inflationary development policies did not promote capital formation or economic growth. Many of them also had inward-looking development strategies, focused on import substitution. Characterized by restricted trade flows and distorted prices, interest rates, and exchange rates, large parts of the developing world suffered slow growth, high inflation, and balance of payments difficulties.

In sharp contrast, those countries that undertook trade liberalization and monetary reform aimed at encouraging holding financial assets paying positive real interest rates displayed sustained rapid growth. The historical case studies of already developed countries including Japan, combined with the experiences of Chinese Taipei and Korea – often cited as the archetypal outward-looking development cases that also benefited from monetary reform – led to a reassessment of the tenets of Keynesian development theory. By the mid-1970s there was general acceptance that finance mattered. Progress in theory, particularly the application of information theory, has made it possible to provide rigorous proofs of the propositions of GS and others (Gertler 1988).

Unfortunately, one of the first applications of the new approach – the economic liberalization that swept Argentina, Chile, and Uruguay (the Southern Cone) – was superimposed on failed populist economic policies (see Sjaastad 1983 and Edwards 1985). In all three, economic liberalization was taken as an alternative economic philosophy, and this generated expectations that economic liberalization would not only improve micro-efficiency but also solve macro-difficulties, and quickly. This misunderstanding was probably the reason for the ready acceptance of liberal economic policies by authoritarian military regimes that had traditionally subscribed to populist ideology.

Nothing in the theory, however, indicates that liberalizing financial and trade regimes by themselves will stabilize an economy, reduce unemployment, or redress current account problems. The 1970s experience of the Southern Cone was bitter, but it cannot be used simply to dismiss liberalization.

The rapid pace of financial deregulation in advanced countries undoubtedly helped sustain the momentum for financial liberalization in developing countries. Although not without negative effects, the process of financial innovation and deregulation in the United States, United Kingdom, Japan and other developed countries appears to have strengthened the position of, and given more confidence to, the supporters of financial liberalization in developing countries.

With the sustained progress in financial market deregulation and opening, there has been a renewed interest in both theoretical and empiracal research on the causal relationship between financial development and economic growth in recent years. One line of research has led to the development of the legal-based view of finance. Finance may be viewed as a set of contracts which are defined and made effective by legal rights and enforcement mechanisms. According to this view, the legal system determines the overall level and quality of financial services. Therefore, it follows that a well functioning legal system facilitate and improves the operations of both financial institutions and markets (Laporta, Lopez-de-Silannes, Shleifer, and Vislney, 1999). In a recent paper, Levine (2000) shows that the legal rights and the effectiveness of contract emforcement is strongly associated with long-run growth: the legal system is a crucial determinant of financial development. In another empirical paper on the legal-based view, Levine, Loayza, and Beck (2000) shows that the legal rights of investors, the efficiency of contract enforcement, and accounting system help account for cross-country differences in the level of financial development.

III. The Role of Financial Intermediaries

The observed importance of financial variables and the phenomenon of financial deregulation in both developed and developing countries beginning in the late 1970s has meant an upsurge in the attention given the role of financial factors in explaining real output growth and fluctuation. This has spawned a vast and often highly technical literature.[2]

From the early 1980s on, most of the studies on the interaction between finance and real economic variables are particularly concerned with informational asymmetries as determinants of the behavior of financial markets and institutions. This application of information theory shows that—in a setting that specifies the behavior of economic agents, informational imperfections and environment and initial endowment—financial contracts and institutions are endogenously and simultaneously determined together with real variables. It shows that the spending decisions of individual consumers and firms are influenced by financial variables such as rationed credit, balance sheet positions and cash flows.

The theory also implies information asymmetries reduce the level of financial market activity and increase the market's sensitivity to exogenous disturbances, thereby making the economy susceptible to finance financial crisis. The greater the degree of moral hazard and adverse selection problems, the greater the reduction in intermediation activity, and hence the lower the level of real investment and output.

Financial intermediaries are regarded as optimal institutional responses to financial market inefficiencies that result from asymmetric information between lenders and borrowers. In seeking to overcome these imperfections, institutions perform two closely related activities: They process information and they assess risk. There are scale economies to information gathering and

[2] See Gertler(1998) and Levine(1997) for a survey of the literature.

processing. More precisely, acting on behalf of many depositors (ultimate lenders), only the intermediary needs to gather and assess a piece of information.

Risk processing relates to qualitative asset transformation. An intermediary is able to transform, at a low transaction cost, large denomination assets, such as loans and investments, into smaller and more liquid ones, such as bank deposits. Because the intermediary holds a large and diversified asset portfolio, it can reduce the overall risk involved in lending. When transforming assets, however, the intermediary's balance sheet becomes "mismatched"—the offset for long-term assets (loans and investments made) are short-term liabilities (deposits received). This poses risks to the intermediary beyond the credit risk of borrower default. Foremost among these are liquidity risk(deposits can be withdrawn faster than loans can be called) and interest rate risk(at least in an unregulated environment). Interest rate "risk" can also be an opportunity—as demonstrated in the early 1990s as banks worldwide cut the rates they paid for deposits much more quickly than they cut loan rates, thereby substantially boosting their margins.

This assessment of financial intermediaries as overcoming frictions from indivisibilities in financial assets and as exploiting of scale economies in transaction technologies that could otherwise limit the degree of risk sharing and diversification go back to Gurley and Shaw (GS).

In seeking further understanding of the role of banks and other financial intermediaries, Jensen and Meckling(1976) and Diamond(1984) developed the view that they served as "delegated monitors." In a world of imperfect information, banks are able to minimize agency problems as they reduce the moral hazard related to asymmetric information in the relation between borrowers and lenders. Financial intermediaries screen and monitor borrowers more efficiently(less expensively) than individual lenders do.

In several advanced countries, however, where there has been substantial financial deregulation, such as the United States, financial intermediaries try to match the maturities of their assets and liabilities, including securitizing their loans and insulating themselves from interest rate risk by floating rates paid and charged in ways that lock in spreads. All this shifts risks to the ultimate lenders and represents an abandonment of any delegated monitor role the intermediaries may have played (see Hellwig 1990).

In contemplating the delegated monitor hypothesis, the intermediaries may use the information they collect to influence of control the activities of their borrowing firms. Indeed, Mayer(1990)suggests that they even went beyond monitoring to actual control. He argues that this control approach provides a basis for understanding a variety of financing patterns observed in eight advanced countries, including the dominant role of retained earnings in corporate finance and the predominance of banks as a source of external finance.

Another approach, built on information theory and Mayer's(1988) observations on the role of banks in Japan and Germany, regards financial intermediation as a device for establishing a long-term relationship between borrowers and lenders (Hellwig 1990). Simple observation and "common sense" are reasons to believe that such long-term relationships are valuable to both parties and to society, but in a competitive environment they may not develop because of the time inconsistency problem. That is, although the long-term relationship may be initially regarded as desirable, after it is established, each party has an incentive to breach. Because both parties recognize this temptation, they may never establish a long-term relationship at all. Mayer and Hellwig both emphasize the difficulty of writing a complete and binding agreement covering all future actions and outcomes over a long period of time.

The channels through which development of financial intermediaries influence economic growth could be many and varied including physical capital accumulation, saving rates, and total factor productivity growth. Of these, Beck, Levine, and Loayza (2000) find that financial intermediaries exert a large positive impact on total factor productivity growth.

IV. Financial Sector Fragility: Financial Repression and Crony Capitalism

For more than three decades preceding the crisis, the East Asian countries had relied on the banking system as an instrument of industrial policy—as the means of mobilizing savings and allocating them to strategic industries and favored projects. This strategy was successful for it had sustained rapid growth and industrialization for almost three decades before the crisis in 1997. According to critics of the East Asian system, such a policy exacted a heavy toll; it resulted in a very weak and inefficient financial system, deficient in many respects which in turn provoked and exacerbated the 1997 crisis (Eichengreen, 1999).

One weakness was that banks became "too big to fail". The moral hazard syndrome associated with this implicit government guarantee led to poor risk management, which in turn caused a massive deterioration in the quality of the assets held by the banks. Another weakness was that direct government control over the management of and credit allocation at banks and other financial institutions left little room and few incentives for the regulatory authorities to develop and improve their capacity for prudential supervision and regulation. It also meant that the management of the banks and other financial institutions themselves did not develop the capacities for risk management. Failure to require banks to follow rigorous auditing and accounting practices made bank balance sheets non-transparent. A lack of transparency and disclosure created a fertile ground for corruption. The cumulative effect of corruption together with inefficient allocation of credit, in part due to government intervention in asset management, eventually manifested in poor economic performance.

A third problem was that the dominant position of banks interfered with and delayed the diversification of financial assets, institutions, and markets. In particular, the bank intermediary dominance impeded the development of capital markets. Developing capital markets requires detailed information on the financial position and legal structures of firms, so as to protect minority stockholders. Financing through capital markets rather than banks, including the greater use of financial derivatives, and liberalizing the capital account all require a reliable disclosure system. Insofar as they were relying on banks for financial intermediation, the East Asian countries were less inclined to improve accounting, auditing and disclosure standards. Finally, the government control of banks created opportunities for collusion between bank owners and managers on the one hand and politicians and large businesses who were favored borrowers at the banks on the other.

During the early period of economic development, Eichengreen argues, when high-return investments were abundant in East Asia, the industrial policy of using banks as instruments of resource allocation did not pose any serious efficiency problems. Once these opportunities were exhausted, sustaining rapid growth required a more efficient allocation of resources which, in turn, dictated the liberalizing and opening of domestic financial markets. The East Asian governments, however, stuck to the old strategy of bank-dominated control. The government directed credit allocation in a way that disregarded market signals. Eventually, non-performing loans began to pile up at banks and brought the solvency of these institutions to risky levels.

Krugman (1994) was the first to point out that East Asia was running into diminishing returns and that rapid growth was only being sustained by a massive infusion of capital, much of which came from abroad in the form of short-term credit. Supporting this line of argument, Eichengreen also claims that the East Asian governments decided to liberalize the capital account to facilitate borrowing from abroad, not to improve the efficiency of the economy. Unfortunately, he argues, they did it backward by deregulating short-term borrowing first.

In what follows, it is argued that the financial weakness was not necessarily one of the main causes of the East Asian crisis, although it exacerbated financial instability and economic

contraction once the East Asian countries came under speculative attack.[3] There is no theory or empirical evidence suggesting that bank-based financial systems are more vulnerable to financial crises than market-based ones. There are no known structural flaws inherent in East Asian financial systems that make them more susceptible to financial crises. It may be true that East Asian policymakers had abused their financial systems as a means of industrial policy before the crisis. The abuse rather than any structure characteristics of East Asian financial systems may therefore have been responsible for the 1997 crisis.

Eichengreen's view is also open to question because there is no clear evidence that by the mid-1990s the East Asian policy regime was crumbling under the inefficiencies of crony capitalism, bringing the period of rapid growth to an end. For example, a recent World Bank (2000) report suggests that the East Asian countries managed to invest their savings productively, so that the return on capital investment remained higher than in most other developing countries, at least until the mid-1990s. Even before capital account transactions were liberalized and increasing volumes of foreign capital began to flow into East Asia, most East Asian countries were already growing at rates much higher than the rest of the world. In fact, it is this success and the potential for future success that had attracted foreign capital into the region. Not only had there been both rapid growth and domestic stability, but the rates of return on capital had been high before the crisis.

In most East Asian countries, the national budget was balanced or generating a surplus. Since the mid-1980s, all of the countries in the region had pursued policies of trade and financial liberalization. Given these sound fundamentals and the region's commitment to liberalization, foreign investors saw enormous opportunities for profit and moved vast sums of money into the region. Because of this massive inflow, investment as a proportion of the GDP in all of these countries was significantly higher than it had been in the 1980s. At the same time, savings rates were stable, resulting in large increases in the current account deficits.

Therefore, it may not be correct to argue that East Asian countries were intent on borrowing heavily from abroad to meet the ever-increasing volume of capital needed to compensate for the losses in efficiency that were slowing economic growth. Certainly, the assertion that these countries began liberalizing the capital account to facilitate capital inflows is at variance with the facts. To the contrary, East Asian countries were very reluctant to liberalize the capital account and trade in the financial services in the early 1990s, although they were committed to doing so in the long run for a number of reasons.

First, none of these countries had enjoyed any comparative advantage in exporting financial services. East Asian economies were understandably concerned that Anglo-American financial institutions could easily dominate their domestic markets for financial services once they were allowed free market access. By the mid-1990s, for instance, American and European financial institutions had already established a dominant position in international investment banking in Asia (Park, 1999).

Second, it was feared that the deregulation of capital account transactions could destabilize domestic financial markets. The shallowness of financial markets together with weak financial institutions was likely to increase the volatility of capital movements and the exchange rate, complicating macroeconomic management.

Third, East Asian countries were cautious in opening money and capital markets, because their regulatory and supervisory systems were hardly comparable to those of advanced countries in terms of standardization and effectiveness. Few of the East Asian countries were able to meet the necessary information and disclosure requirements for capital account liberalization. Despite this

[3] See Furman and Stiglitz (1998) for a detailed analysis on this issue.

weak capacity in prudential supervision and regulation, western governments were increasing pressure to secure their financial firms' rights of access in East Asia (Park, 1996).

Although the same governments knew that accounting practices and disclosure requirements in East Asia did not conform to their standards and that financial supervisory authorities were not capable of enforcing rules and regulations, few western governments demanded the necessary reforms to financial supervision before entering the East Asian financial markets. Instead, they were persistent in their demand for equal access and the outright opening of domestic capital markets. Their justification for the persistence and impatience was that unless financial opening and liberalization were carried out quickly, the inertia would become too great and these countries would never pursue liberalization. As a result, they did not choose to address the possibility that pell-mell liberalization could invite speculative attacks and financial crisis, particularly in East Asian emerging market economies. Western governments did not realize the possibility that once capital accounts were deregulated, small East Asian economies could not deal with large capital inflows because their financial markets were shallow, regardless of whether they had established a well-functioning system of supervision and regulation of financial institutions. An efficient regulatory system would certainly have made the crisis less costly and painful. However, if banks were more cautious in their real estate lending, domestic borrowers could have gone directly to international financial markets as they did in Indonesia.[4]

Prior to the crisis, foreign lenders had access to much of the information needed for their investment decisions, including information that the balance sheets of banks and corporations in East Asia were not reliable. Foreign market participants either ignored or were not able to process the available information. If the lack of transparency and the inadequate disclosure of information made East Asia vulnerable to financial crises, how serious was the problem? Furman and Stiglitz (1998) show that increased transparency in the form of disclosure requirements is not needed, since markets can and do provide optimal incentives for disclosure. They also argue that under certain circumstances, information disclosure could exacerbate fluctuations in the financial markets and precipitate financial crisis (you do not cry fire in a full theater). As far as the flow of information was concerned, many small foreign lenders had limited capability or found it too costly to analyze macroeconomic and financial as well as borrower specific information. If large and reputable banks were lending, then they thought they could also lend safely as well. As a result, they left the East Asian financial markets immediately when they saw their leader banks were making a hurried exit, creating confusion and panic in the financial systems.

The seriousness of crony capitalism, or widespread corruption in East Asia, was also well known among foreign investors, but according to several measures of corruption, the risk of corruption had declined or remained unchanged before the crisis in East Asia (Furman and Stiglitz, 1998).[5] It is also instructive to note that the Nordic like Sweden, Norway, Finland countries, which did not suffer from the non-transparency problem nearly as much as the East Asian countries, could not fend off crisis in the early 1990s (Rodrik, 1999).

Foreign investors knew quite well that East Asian firms, both small and large, relied almost exclusively on banks for financing their investments and their working capital requirements. In such a bank-oriented financial system, it is only natural to expect that the debt-equity ratios of these firms are likely to be much higher than those firms operating in economies where capital markets are well developed. Apparently before the crisis, foreign lenders did not consider that the balance sheet's weaknesses would pose serious default and liquidity risks or that the weaknesses did not seem serious enough to discourage their lending to those highly leveraged firms. Once the

[4] For further discussion on this issue, see Radlet and Sachs (1998), Furman and Stiglitz (1998), and Hellmann, Murdock, and Stiglitz (2000).

[5] A recent measure of corruption in Asia by Political and Economic Risk consultancy, Ltd. (2000) shows that the trend of corruption in all four crisis countries has been rising.

crisis erupted, however, the lending problem was suddenly brought up as one of the major vulnerabilities of the East Asian economies.

V. Reform of the Financial Sector

The East Asian experience also raises the question as to why the countries in the region did not initiate financial reform earlier to loosen the control over financial institutions and markets and also to develop a more balanced financial system where capital markets compliment the banking industry. There were several reasons for their reluctance to follow a liberal reform. One reason was the problem of inertia and complacency bred over a long period of rapid growth before the crisis. As far as the East Asian economies were concerned, the bank-dominated financial system had worked very well for them in sustaining rapid growth and industrialization. There were no compelling reasons for these countries to tinker with the system until they were forced to open their fledgling capital markets to foreign participants.

Another reason had to do with a theoretical justification for both financial restraint and reliance on a bank-dominated financial system in developing countries. Problems with incomplete information, markets and contracts tend to be more severe in the financial sector. In any economy, whether developed or underdeveloped, these deficiencies weaken and sometime break down the functions of the financial system. Failures in the financial systems can be more frequent and serious in developing economies where market incompleteness is, in general, more pronounced. Furthermore, in many developing countries, effective legal and regulatory systems often do not exist. Under these circumstances governments of developing economies often intervene and impose restraints on lending and other bank operations to improve the efficiency of the financial sector.[6]

Stiglitz and Uy (1996) and Stiglitz (1998b) argue that financial restraints, or repressive financial policies in East Asia had their share of problems, but made an important contribution.[7] For example, deposit rate controls increased the franchise values of banks and, hence, discouraged them from taking excessive risks that otherwise might have destabilized the financial system. One might argue then that the economic costs resulting from financial restrictions, however, were more than offset by the gains from greater financial stability and that the removal of financial restraints was one of the causes of crisis in East Asia.

The literature on finance and development suggests that the more pronounced the information asymmetries and the higher the transactions costs are, the more preferable banking arrangements are to direct securities markets. In developing economies, where informational problems are severe because accounting and auditing systems are typically less reliable and shareholder rights are not adequately protected, banks assume a more important role than in advanced economies. In the course of development, institutions specializing in gathering, assessing, and disseminating information appear, as do regulatory agencies that can enforce greater disclosure and legal systems that protect the rights of investors and effectively enforce contracts. This institutional development makes it possible to nurture bond and stock markets. In practice, however, banks have remained the dominant source of external financing even in advanced countries.

In a recent paper, Aoki (2000) argues for the desirability of relying on a bank dominated financial system at an earlier stage of development on the grounds that much of the information that is critical for financial transactions can not be digitalized or disclosed because it is tacit. The role of

[6] On this question, there is the question of government failures. Government intervention can not be justified, if the legal and regulatory systems are not efficient and reliable.

[7] Hellmann, Murdock, and Stiglitz (2000) distinguish financial restraint from financial repression. The former is used to improve the efficiency of financial markets whereas the latter is designed as a mechanism for the government to extract rents from the private sector. In reality, however, such a distinction can not easily be made.

banks, in contrast to that of capital markets, is to process information regarding borrowers and their conducts that is often tacit. In providing finance to enterprises in developing countries, lenders in many cases have to deal with less standardized and unquantifiable information on the quality and reliability of entrepreneurs and managers, which is an important element of the *ex ante* monitoring of borrowers. This *ex ante* monitoring dealing with tacit information can not easily be substituted by introducing capital markets. The reliance on the banking system does not imply that the East Asian emerging market economies could ignore more specialized capital market and monitoring activities such as derivative transactions and securities underwriting and trading. Aoki argues that this line of business should be developed in parallel with the monitoring of tacit information, because they are complementary to each other. To this end, Aoki advocates the development of a universal banking system in which the holding company controls the multiple subsidiaries.

There is also the argument that bank intermediaries are more efficient than open securities markets for supplying long-term financing to industry. One reason for this is that banks could lengthen the investment horizon of firms while they monitor the activities of their client firms. Another is that banks can also enter into repeated transactions and relationship with borrowers in order to mitigate informational distortions by sharing information and building trust. This relationship banking, in turn, can facilitate the provision of long-term (or at least ongoing) credit.[8] The danger of the relationship banking is, of course, that it may turn into mechanisms of collusion whereby the bank and borrowing company managers could extract rents from their respective institutions.

In a number of recent papers, Demirguc-Kunt and Levine (1999) and Levine (2000) show that well developed financial systems exert, independently of whether they are dominated by banks and other financial intermediaries or financial markets, positive influences on economic growth. However, their cross-country study indicates that neither intermediary-centered nor market-centered financial systems are associated with high growth in countries at different stages of economic development. That is, the financial structural characteristics pertaining to dominance, either by financial intermediaries or markets, are immaterial to promoting economic growth.

Instead, they argue that legal environment and development are more critical to financial development than financial structural characteristics. La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1999) suggests that the legal environment for investor protection and contract enforcement is the most critical determinant of the level and quality of financial services, and thus to the development of both financial intermediaries and market. One implication of the legal approach is that protection of investor rights is a basic determinant of the financial structure. A legal system that provides a strong protection of shareholder rights, such as the right to vote on key corporate matters, to select corporate directors or to sue the directors and the firm, encourages the development of equity markets. On the other hand, a legal system that secures creditor rights such as the right to repossess collateral or to reorganize firms, encourage lending. Depending on the structure of these rights, such a legal system could promote bank lending and hence a bank-based financial system.

Given the elaborate institutional requirements for shareholder protection, many developing countries will find that protecting the rights of both banks and their depositors as creditors is relatively more expedient than shareholder rights. The legal approach therefore provides another reason why financial systems in developing countries are dominated by banks and other intermediaries. Another message of the legal approach is that a well functioning legal system could nurture economic development, as it facilitates the operation and improves the efficiency of

[8] Mayer (1988) argues that competition in the financial markets can have time inconsistency costs that result in a decline in long-term financing. Yanelle (1989) shows scale economics and Bertrand oligopolistic competition that imply unfettered competition in financial intermediation are not likely to be realized and that deregulated banking may not lead to an efficient allocation of resources.

both financial institutions and markets. Hence, they argue the debate on the relative merits of the intermediary versus market-centralization of the financial systems either in advanced or developing countries is not analytically meaningful.

While the importance of the legal environment can not be denied, it should be also pointed out that the legal approach does not prove that banking arrangements are less efficient or preferable in mobilizing and allocating savings than direct securities markets are in developing economies. As shown empirically by Demirguc-Kunt and Levine (1999), national financial systems tend to become more market-oriented as countries become richer and develop a well-functioning legal system. In most developing countries, the existing legal systems hardly provide a strong protection of the shareholder and creditor rights and contract enforcement. Accounting practices and disclosure requirements do not meet international standards. Because of these institutional weaknesses, information asymmetries are more serious and transaction costs are higher.

Developing economies may therefore have to rely on bank-based financial systems because these structural problems act as a major constraint for fostering a market-based financial system, at least in the early stage of development. The bank-dominated system is a more realistic way for developing countries to grow, but to be efficient the systems should not be subject to undue state influences. Instead, they should be exposed to more competition and be prudently regulated. East Asian countries might not have met these criteria and failed to adjust as globalization was taking place (World Bank, 1998, P.56). However, emerging market economies may not be able to sustain robust growth as long as they depend on a bank-oriented financial system.

Although East Asian economies are likely to be better off by staying with a bank-oriented financial system until the regulatory and legal infrastructure that could support a well functioning securities market is established, this does not mean that they do not have to reform their financial system. The list of reforms for stable and sound banking system is long and growing. And, the strict separation of banking from commerce tops the list: the separation should be observed so that industrial groups or large enterprises can not own controlling stakes in banks and other financial institutions. There are other reforms that deserve close attention for building a more stable and competitive banking industry. They are:

- There is little disagreement that financial reform should begin with the re-privatization of state-owned banks, non-bank financial institutions, and corporate assets. If ownership and management control of major banks and other financial institutions remains in the hands of the government as it is likely to, the government can not extricate itself from its extensive involvement in the reform process, leaving little room for the market to intervene. After three years of operational restructuring, however, the crisis countries have reached a point where they can no longer postpone the selling of state-owned financial institutions back to the private sector, for re-privatization holds the key to the successful reform of corporate governance in general and large, family-owned groups that dominate many industries in particular. Re-privatization will also help ease the growing government debt burden of restructuring and secure additional public funds needed to implement a second round of restructuring if needed.

  If enforcement of the general principle of the bank-commerce separation is desirable, then a single individual or family owned conglomerate should not be allowed to own a large stake in banks and other financial institution. In this case, the state-owned bank stocks will have to be sold to the general public for their wide dispersion. However, ownership dispersion does not necessarily prevent the large groups from exercising management control of financial institutions, because they can always command a large block of voting stock by putting together a number of small shareholders through a cross ownership arrangement. Knowing this possibility and difficulty of regulating such a collusive behavior, the government may attempt to form its own group of small shareholders (usually other institutions it controls or

owns) to thwart the efforts of the groups, as Korea has in the past. The government's counter action may be justifiable, but it does not serve the purpose of re-privatization.

If a widely dispersed ownership of banks and other financial institutions is not a viable option, then an effort could be made to establish privately-owned investment funds created primarily for the takeover of these financial institutions. Another option is to create financial groups which are not subject to ownership restrictions and are not related to industrial groups or do not own any industrial or commercial entities except for their stocks for financial investment. To encourage the formation of these groups, the government could provide tax and other incentives to the large conglomerates to spin off their financial firms to establish an independent financial group or financial holding company.

- Easing restrictions on foreign entry into the domestic financial services industry

Economic forces driving the globalization of finance have been gathering speed in recent years and will continue to do so. Regardless of their policy and strategic preferences, the East Asian countries will be forced to adjust to this trend by opening their intermediation markets and providing a level playing field to foreign competitors. If the ongoing worldwide financial integration is going to be a natural and unavoidable development, the East Asian authorities should consider taking advantage of their market opening as an opportunity to exert pressure on domestic financial institutions to prepare themselves for foreign competition by improving their balance sheets and operations and also by consolidating among themselves through mergers and acquisitions. Foreign competition will serve as a credible threat to domestic financial institutions in that unless they reform themselves voluntarily, they will not only lose their market shares but also could be driven out of the domestic intermediation market.

- Recapitalization through the stock market

The banking reform will gain more credibility and become more effective if corporations and financial institutions are able to develop a greater access to capital markets for investment financing and recapitalization. Many firms and financial institutions in Korea and Thailand were successful in raising equity capital and issuing debentures in 1999 when the stock markets in the region were booming.

A recent financial statement analysis by the Bank of Korea (2000), for example, shows that at the end of 1999 the average debt-equity ratio of 2,046 sample firms in Korean manufacturing fell by 88.3 percentage points to 214.7 percent from 303 percent a year earlier. 36.6 percentage points of the drop were accounted for by recapitalization through rights issue. A similar figure for a sample of 513 companies listed at the Korea Stock Exchange dropped to 150.6 percent in 1999 from 277.7 percent a year before. During the same period, the net profits of the listed firms as a percentage of their total sales rose to 4.4 percent compared to -7 percent of the corresponding period in 1998 largely due to a decline in market interest rates and economic recovery.

Encouraged by the booming market, a large number of Korea's financial institutions including banks, were making plans for public offerings of both common and preferred stocks in the domestic equity market and also for issuing global depository receipts to foreign investors. The rapid recovery with a recent upward adjustment in Korea's sovereign rating eased the marketing of these instruments a great deal. In Thailand, the private sector was also successful in raising capital through the issuance of new equity and debenture. It raised TB 45 billion (US$1.2 billion) from the stock market and issued TB 120 billion in debentures. In the first four months of 2000, Thai corporations raised TB 4.6 billion through the issuance of new shares and issued TB 52 billion in new debentures.

After a year long surge, the stock markets of all four crisis countries have floundered again in 2000 and are expected to remain depressed, reducing the scope of bank recapitalization and corporate debt workout through the equity market. A vibrant and growing capital market is likely to speed up the transition to a market-oriented reform, and for this reason sustaining the recovery underway will be more critical than otherwise.

VI. Concluding Remarks

That the structural frailties of financial systems increased the susceptibility of the East Asian countries to financial crisis is not disputed. However, it is not altogether clear whether they were the direct causes of the crisis. The crisis does not also provide any evidence suggesting that the Anglo-American market-based system works better than the bank-based system. The East Asian financial frailties were by no means inherent in the intermediary-based financial system; they were consequential to its general lack of transparency and the repressive financial policies which resulted in inefficient allocation of resource and collusion between large businesses on the one hand and politicians and government policymakers on the other. The moral hazard syndrome stemming from the implicit government guarantee that banks would never fail further compounded the balance sheet problems at the financial institutions.

Since the crisis, East Asian countries have introduced and enforce new rules for accounting and auditing that confirm to international standards. Along with this institutional reform, most East Asian countries have made an impressive progress in deregulating and opening financial markets. As a result, financial institutions, markets, and government policies have been evolving to a competitive and market oriented financial system. However, until these economies develop a secure regulatory and legal foundation for protecting investors, they are likely to rely on banks and other financial intermediaries for mobilization and allocation of resources.

References

Aoki, Masahiko (2000), "A Note on the Role of Banking in developing Economies in the Aftermath of the East Asian Crisis," Governance, Equity and Global Markets, The World Bank, Paris, 2000.

Bank of Korea (2000), Financial Statement Analysis for 1999, Seoul, Korea

Beck, Thorsten. (1999), Ross Levine, and Norman Loayza, "Finance and Sources of Growth" *Journal of Financial Economics, forthcoming*.

Demirguc-Kunt, Asli and Ross Levine (1999), "Bank-Based and Market-Based Financial Systems: Cross-Country Comparisons," a paper prepared for the conference on 'Financial Structure and Economic Development,' organized by the World Bank on February 10-11.

Diamond, David W. (1984), "Financial Intermediation and Delegated Monitoring." *Review of Economic Studies 51* pp.393-414, July.

Edwards, Sebastian. (1985), "Stabilization with Liberalization: An Evaluation of Ten Years of Chile's Experiment with Free Market Policies, 1973083." *Economic Development and Cultural Change*, January.

Frankel , Jeffrey and Nouriel Roubini (2000), "The Role of Industrial Country Policies in Emerging Market Crises," a paper prepared for the NBER Conference on Economic and Financial Crises in Emerging Market Economies, NBER, October 19-21.

Furman, Jason and Joseph Stiglitz (1998), " Economic Crises: Evidence and Insights from East Asia," *Brookings Papers on Economic ActivityII.*

Gerschenkron, Alexander. (1962), Economic Backwardness in Historical Perspective. Cambridge, MA: Harvard University Press.

Gertler, M. (1988), "Financial Structure and Aggregate Economic Activity." Journal of Money, Credit and Banking, August.

Gurley, J. G., and E.S.Shaw. (1955), "Financial Aspects of Economic Development." American Economic Review 45p 515-38.

Hellmann, F. Thomas, Kevin C. Murdock, and Joseph E. Stiglitz (2000), "Liberalization, Moral Hazard in Banking, and Prudential Regulation: Are Capital Requirements Enough?," *The American Economic Review*, March, PP. 147-165.

Hellwig, Martin F. (1990), Banking, Financial Intermediation and Corporate Finance. *Financial Integration*. Cambridge, MA: Cambridge University Press.

Jensen, M.C., and W.H.Meckling. (1976), "Theory of the Firm:Managerial Behavior, Agency Cost and Ownership Structure." *Journal of Financial Economics 3.*

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny (1999), "Investor Protection: Origins, Consequences, Reform," *Financial Sector Discussion Paper* No. 1, The World Bank, September.

Levine, Ross. (1997), "Financial Development and Economic Growth : View and Agenda", *Journal of Economic Literature, June*.

Levine, Ross (2000), "Bank-Based or Market-Based Financial Systems: Which is Better?," a paper prepared for the conference on 'Financial Structure and Economic Development,' organized by the World Bank on February 10-11.

Levine, Ross, Norman Loayza, and Thorsten Beck. (2000), "Financial Intermediation and Growth : Causality and Causes" *Journal of Monetary Economics*.

Long, M. (1983). "Review of Financial Sector Work in the World Bank." Processed. World Bank

Mayer, Colin (1988), "New Issues in Corporate Finance," *European Economic Review* 32, pp. 1167-89.

Mayer, Colin. (1990), Financial Systems, Corporate Finance, and Economic Development. Chicago:University of Chicago Press.

Modigliani, Franco and M. Miller. (1958), "The Cost of Capital, Corporate Finance, and the Theory of Investment." American Economic Review v, June.

Patrick, Hugh. (1966), "Financial Development and Economic Growth in Underdeveloped Countries." Economic Development and Cultural Change, January.

Political and Economic Risk Consultancy, Ltd. (2000), " The Trend of Corruption in Asia," March.

Radelet, S. and J. Sachs (1998a), "On the Onset of the East Asian Financial Crisis," *Development Discussion Paper*, Harvard Institute for International Development.

Rodrik, Dani (1995), "Trade and Industrial Policy Reform," in J. Behrman and T.N. Srinivasan eds. Handbook of Development Economics, Volume III, Chapter 45, pp.2925-82.

Rondo, Cameron. (1972), Banking and Economic Development, New York:Oxpord University Press.

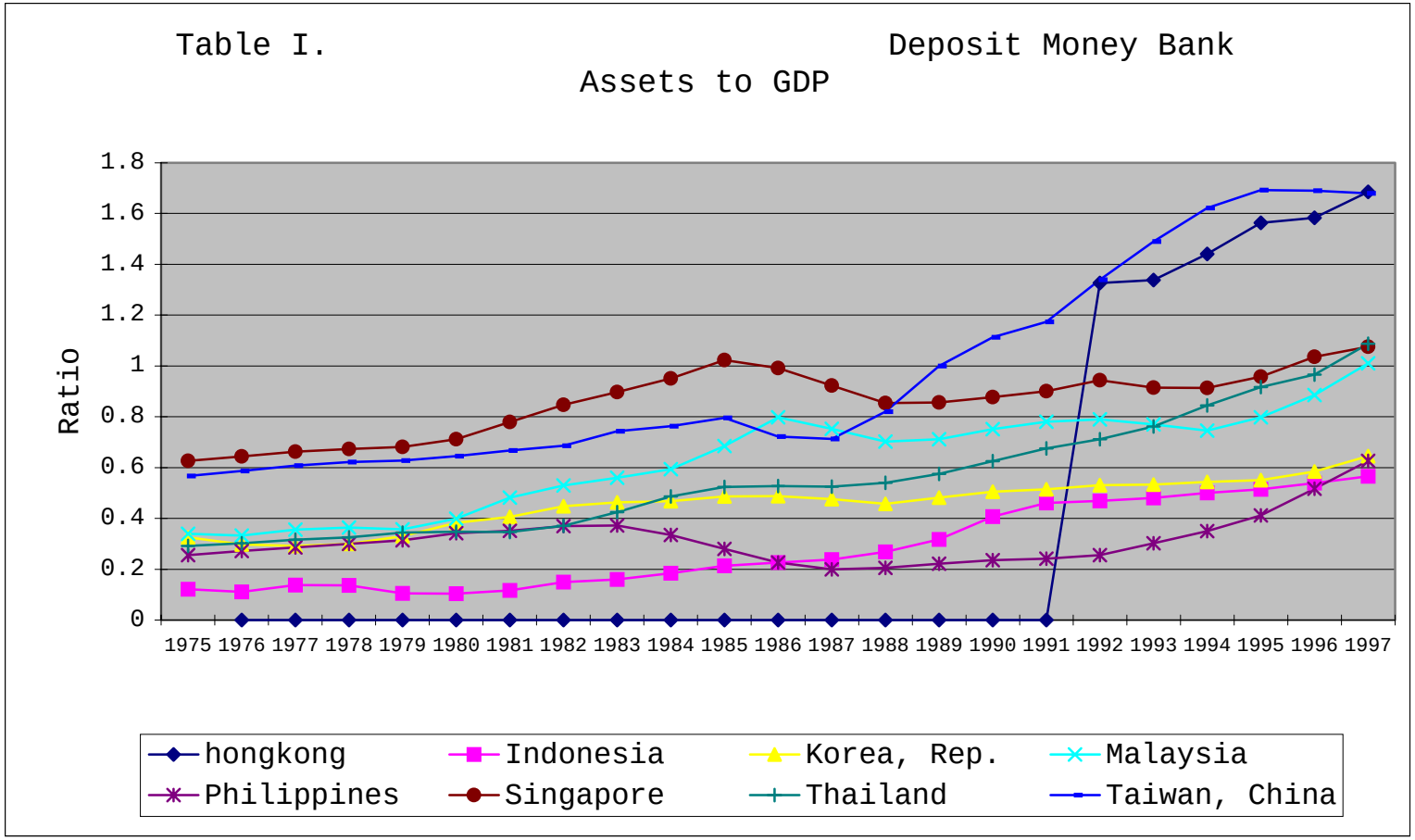
Sjaastad, L.A. (1983), "Failure of Economic Liberalization in the Cone of Latin America." World Trade, March.

Stiglitz, Joseph (1998), "More Instruments and Broader Goals: Moving Toward the Post-Washington Consensus," *WIDER Annual Lectures* 2, UNU/WIDER.

Stiglitz, Joseph and Marilou Uy (1996), "Financial Markets, Public Policy, and the East Asian Miracle," *World Bank Research Observer* 11(2): 249-76.

World Bank (1998), East Asia: The Road to Recovery, Washington, D.C.

Yanelle, M. O. (1989), "The Strategic Analysis of Intermediation," *European Economic Review* 33.



Source : World Bank Data Base

Source : World Bank Data Base

Table II. Stock market capitalization to GDP

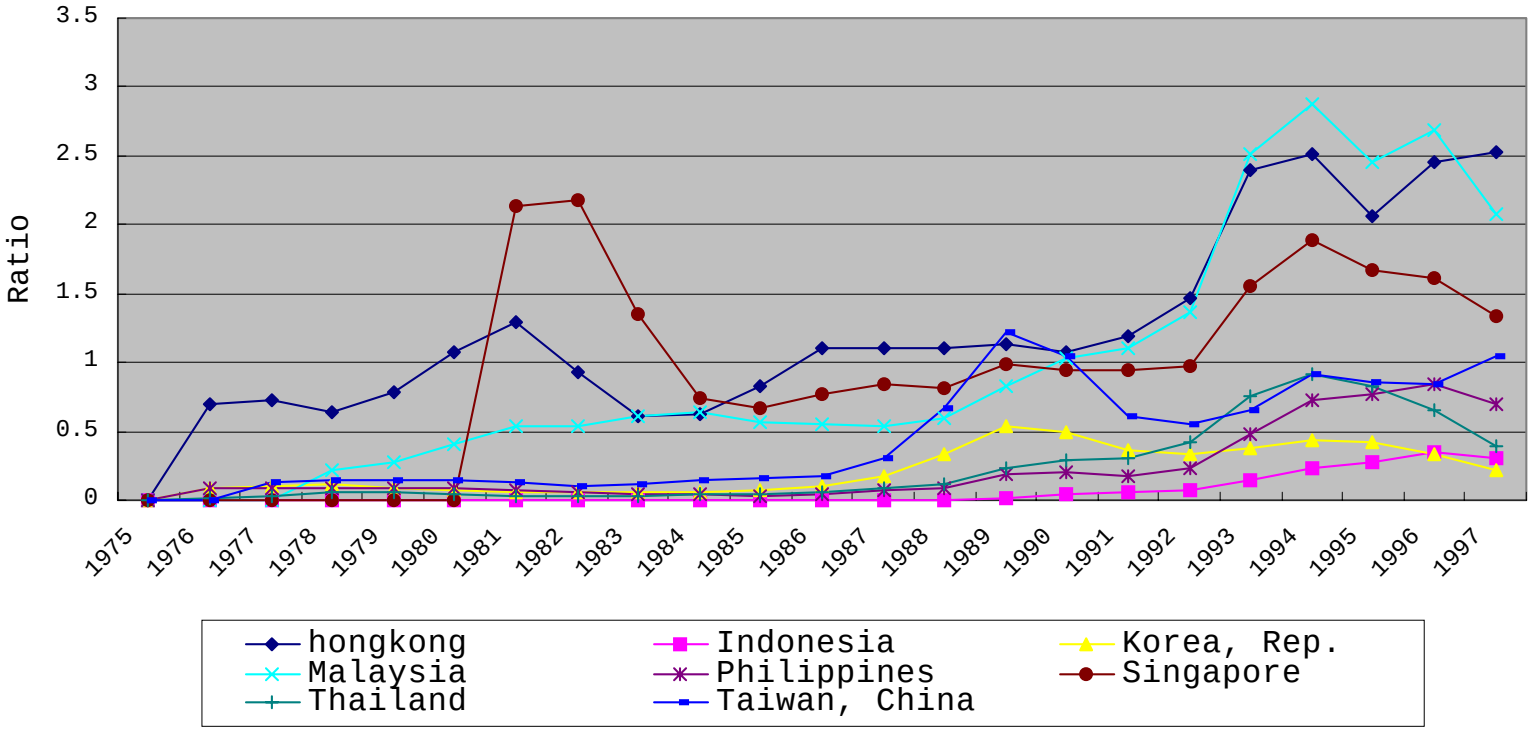
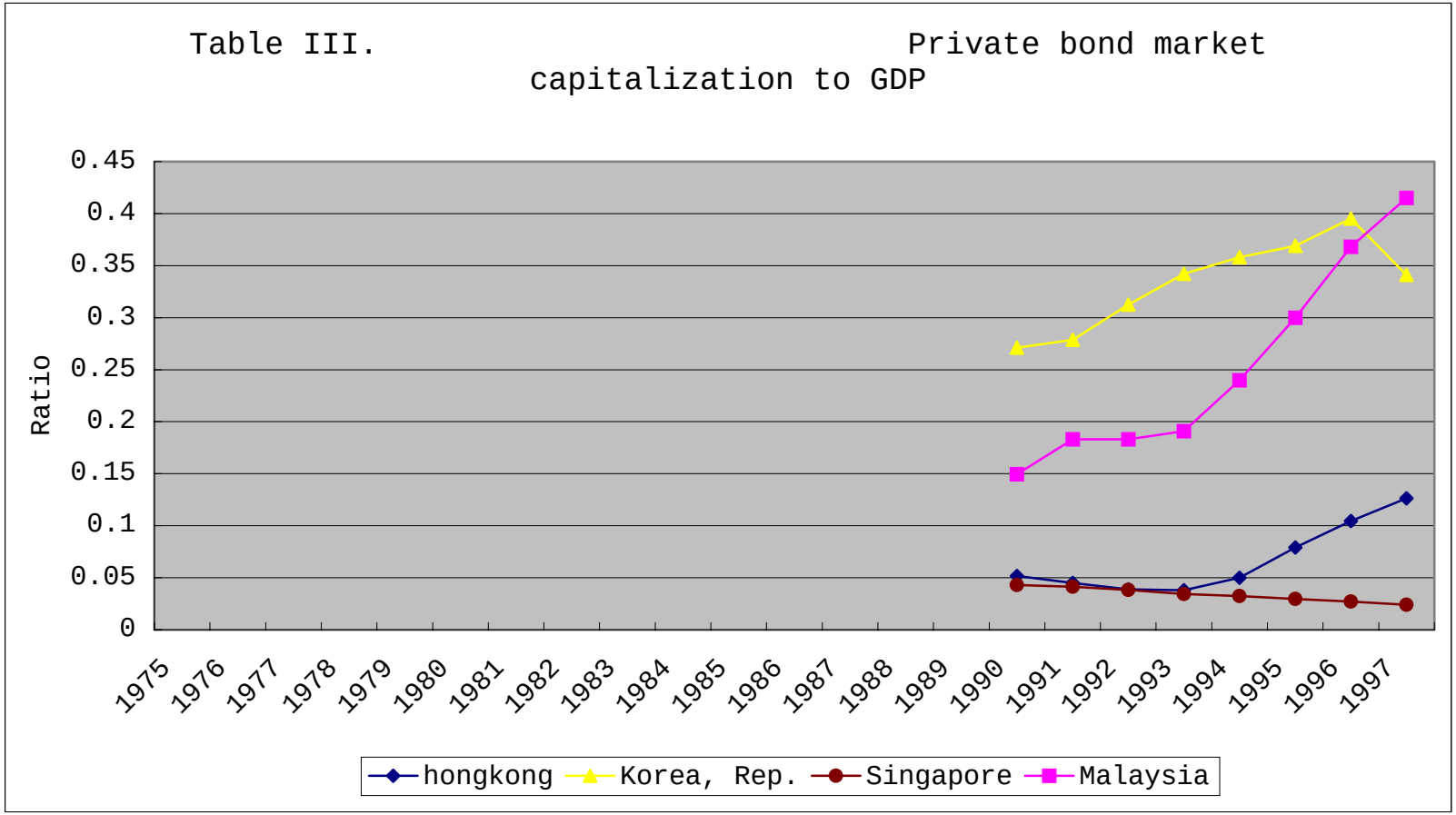
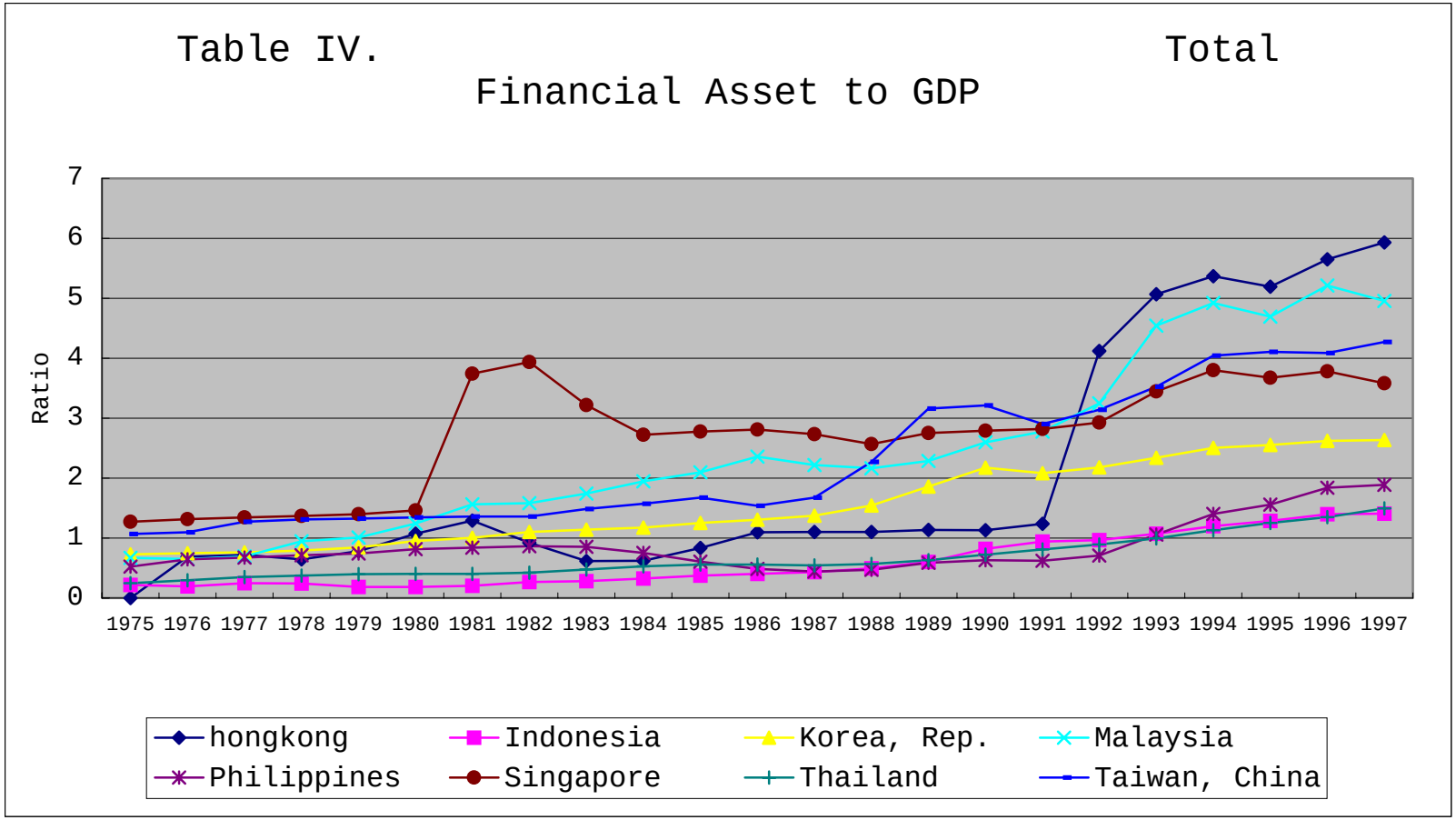


Table III. Private bond market capitalization to GDP



Source : World Bank Data Base



Source : World Bank Data Base

BANK STABILITY AND ECONOMIC GROWTH: LESSONS FROM THE NORTH AMERICAN EXPERIENCE

Jack L. Carr, Professor of Economics,
University of Toronto

I. INTRODUCTION

For long periods of time economists ignored the study of economic growth. Fortunately the last ten to fifteen years have seen a major research effort devoted to growth.[9] Unfortunately at the present time, economics can still not answer the fundamental question of why some countries grow rapidly and why other countries grow slowly. Why has sustained growth occurred in the Western World only in the last 200 years? Why were Spain and Portugal major economic powers in the sixteenth century but relatively underdeveloped economies in the twentieth century? Why did Argentina have per capita income levels comparable to Canada at the end of the 1800's but now has substantially less per capita income than Canada? Why is per capita income in the U.S. between 20 to 40 times the level in India? Why did economic growth take off in both Canada and the U.S. in the period immediately after World War II but slowed down in both countries in the mid-1970's?

Currently we have a number of growth models but none of these models are capable of answering the fundamental growth questions.[10] As is always the case in economics, different models led to different policy prescriptions for government. Section II of this paper will provide a brief review of developments in the growth literature. Section III will examine the casual relationship between banking sector stability (and development) and economic growth. Section IV will review North American experience and examine policies which promote banking sector development and stability. Section V presents a summary and conclusions.

II. REVIEW OF DEVELOPMENTS IN GROWTH THEORY

1. Adam Smith and the Classical Theory of Growth[11]

As with most subjects in economics, serious research in growth theory began with Adam Smith. *An Inquiry into the Nature and Causes of the Wealth of Nations* is a study into the factors leading to high per capita incomes and high per capita growth rates. For the classical economists the question of economic growth was the fundamental question in economics. To Smith the wealth of a nation was unrelated to the amount of money in a nation. Wealth depended upon the level of factor endowments; land, labour and capital and their efficient allocation. Leaving individuals to pursue their own self-interest resulted in the accumulation of capital, the division of labour, and the efficient allocation of resources; all which resulted in increases in output per worker and economic growth. For Adam Smith growth was a natural outcome of letting individuals pursue their own self-interest.

[9] The new interest in growth started with the work of Romer (1986) and Lucas (1988).

[10] The `growth' in new growth models has certainly been matched by a growth in empirical studies. These studies invariably include a large number of regressors. In fact, over 50 variables have been found to be significantly correlated with growth. However, correlation does not imply causation. Levine and Renelt (1992) have found that almost all of the cross-sectional studies are not robust with respect to small changes in the conditioning information set. The fragility of the empirical results questions the reliability of the findings in many of these studies.

[11] For a review of developments in growth theory see Carr (1993).

> The uniform, constant and uninterrupted effort of every man to better his condition, the principle from which public and national, as well as private opulence is originally derived, is frequently powerful enough to maintain the natural progress of things towards improvement, in spite both of the extravagance of government and of the greatest errors of administration. Like the unknown principles of animal life, it frequently restores health and vigour to the constitution, in spite not only of the disease but of the absurd prescriptions of the doctor. (p. 326)

For Smith, economic growth could be robust even in the face of many misdirected government policies. But to Smith 'absurd' government policy could in fact significantly reduce economic growth rates. In considering the situation of China where economic growth seemed to be non-existent[12], Smith argues that:

> A country which neglects or despises foreign commerce and which admits the vessels of foreign nations into one or two of its ports only, cannot transact the same quantity of business which it might do with different laws and institutions. In a country too, where, though the rich or owners of large capital enjoy a good deal of security, the poor or owners of small capital enjoy scarce any, but are liable, under the pretence of justice, to be pillaged and plundered at any time by the inferior mandarins, the quantity of stock employed in all of the different branches of business transacted within it, can never be equal to what the nature and extent of that business might admit". (p. 95)

Smith gives examples of other government policies which will lower economic growth

> A defect in the law may sometimes raise the rate of interest considerably above what the condition of the country, as to wealth or poverty, would require. When the law does not enforce the performance of contracts, it puts all borrowers nearly upon the same footing with bankrupts or people of doubtful credit in better regulated countries. The uncertainty of receiving his money makes the lender exact the same usurious interest which is usually required from bankrupts (p. 95)

> and

> When the law prohibits interest altogether, it does not prevent it. Many people must borrow and nobody will lend without such a consideration for the use of the money as is suitable, not only to what can be made by the use of it, but to the difficulty and danger of eroding the law" (p. 96)

In summary, Adam Smith believed that the operation of free unfettered markets would lead to efficient resource allocation and maximum economic wealth creation. Capital accumulation and growth would take place naturally. The role of government was to ensure peace, define property rights and enforce contracts. Government policies, such as trade restrictions enacted to advance local private interests, had the potential of reducing aggregate economic wealth and reducing growth rates. For Adam Smith what was crucial for the growth process was providing economic agents with the correct incentives. Free and unfettered markets provided these agents with 'correct' incentives. Government policy had the ability to distort incentives, misallocate resources and reduce aggregate wealth and growth. Adam Smith concentrated on the working of markets

[12] Smith looks at the Chinese situation because he asks whether there is a limit to capital accumulation (i.e. whether the long-run equilibrium growth rate is zero). Smith doesn't rule out such a situation from a theoretical point of view, although he claims `perhaps no country has ever yet arrived at this degree of opulence'.

and on the microeconomic issues of facing economic agents with appropriate relative prices. For Smith having economies establish correct relative prices was of fundamental importance for wealth creation and growth.

2. Solow and Denison and the Neoclassical Theory of Growth

The neoclassical theory of growth[13] moved away from the classical microeconomic emphasis of the operation of markets and concentrated instead on the macroeconomic aspects of growth. The neoclassical theory postulated an aggregate production function for the economy as a whole. Aggregate output depended upon the aggregate stock of labour and capital[14] and on the state of technology[15]. In the simplest form of the neoclassical theory, economic agents maximize a utility function which depends on a per capita consumption streams. The rate of growth of per capita output is proportional to the exogenously given rate of technological change. Hence technological change was the key factor in explaining growth. But with exogenous technological change this model could not explain variations in growth.

The neoclassical model changed the emphasis in growth theory from an examination of individual markets and efficient allocation of resources to an examination of aggregate magnitudes such as aggregate capital-output rates, aggregate levels of capital, etc. The neoclassical model stressed the difference between level effects and growth rate effects. For example, an implication of the neo-classical model was that a change in the saving rate would not affect the balanced growth rate. A higher savings rate would be associated with higher output levels along the balanced growth path. The balanced growth rates would be identical in the two economies with different savings rates. Similarly it is argued that government policies that result in inefficient resource allocation affect the level of output and not its rate of growth. Lucas (1988) argues that for example, the imposition of trade barriers 'that reduced output by five percent (an enormous effect) spread out over ten years is simply a one-half of one percent annual growth rate stimulus' (p. 12)[16]

If the elimination of one inefficient government policy raised growth rates of output per capita from 2% to 2.5% for a ten year period, this represents a significant and important affect on growth. 'Simply a one-half of one percent annual growth rate stimulus' is a very significant stimulus. Also, governments enact many different types of laws that interfere with the operation of free markets and misallocate resources. If a government were to enact distorting tax laws, labour laws, pay and employment 'equity' schemes, protective tariffs, laws establishing marketing boards, wage and price controls and numerous other forms of economic regulation this would not only misallocate resources but cause a waste of society's resources through the encouragement of rent-seeking activities[17]. If governments do not protect property rights this also will lead to lower

[13] See Solow (1956) and Denison (1961)

[14] Earlier work in growth theory by Harrod (1948) and Domar (1957) also emphasized the macroeconomic aspects of growth. In fact Solow viewed his work as an extension of the Harrod-Domar model where capital-labour substitution in his model replaced the assumption of fixed proportions of the Harrod-Domar model. In the Harrod-Domar model the natural rate of growth of output equals the savings rate divided by the optimal capital-output ratio.

[15] Technology was assumed exogenous in the neoclassical world.

[16] Lucas (1988) argued that "inefficiencies are important and their removal certainly desirable, but the familiar ones are level effects, not growth effects. This is exactly why it is not paradoxical that centrally planned economies, with allocative inefficiencies of legendary proportions, grow about as fast as market economies." (p. 12) I wonder if Lucas wrote his article now instead of 1988, would he still make the above statement? It seems that growth rates in centrally planned economies were maintained through creative accounting and the running down of the capital stock. It is now evident that correctly measured equilibrium growth rates in the centrally planned economies were substantially less than those in market economies.

[17] Rent seeking activities can reduce economic growth for a number of reasons. For an analysis of the effects of rent-seeking on growth see Murphy, Schleifer and Vishny (1991). Not only does rent seeking activities absorb resources but also results in a tax on the productive sector which reduces the incentive to

levels of output[18]. If there have been a large number of government policies that have been enacted over a number of years and have distorted incentives then these policies are capable of affecting growth rates over long periods of time[19]. The distinction between level and growth effects is an important distinction. However, this distinction should not result solely in an examination of aggregate magnitudes. Economics is about incentives. Policies that continually distort incentives will affect growth rates. The lessons from the neoclassical growth model should not obscure the major result from the classical growth model. Inefficient and distorting government policies can and do have significant effects on both the level and rate of growth of output over sustained periods of time[20].

There is one other development from the neoclassical tradition that should be discussed. The neoclassical model of Solow (1956) and Denison (1961) was used to explain the US growth in the first half of the twentieth century. This model was not designed to explain cross-country growth rates. However from the neoclassical tradition, growth accounting developed to explain cross-country differences. Assuming common technology, cross country growth differences could be explained by either differences in population growth or capital accumulation[21] and differences in growth in output per capita could be explained by differences in growth in capital per capita.

One implication from the growth accounting literature is that the growth process could be speeded up in underdeveloped countries by giving aid to these countries in the form of physical capital; for example, railways, dams and steel plants. These policies were tried and invariably, a significant number of these projects failed[22]. One reason for failure of these projects was that they concentrated on the macroeconomic variable of aggregate capital and ignored the microeconomic issue of whether capital intensive steel plants were optimal in a country with a low price for labour. What is optimal for the developed country is not necessarily optimal for the underdeveloped country. Stressing the accumulation of capital rather than the efficient use of capital will not result in increased economic growth.[23] The evidence from actual development policies underscore the importance of looking at the efficient allocation of resources in attempting to improve economic growth rates.

---

produce and results in the most talented members of society becoming rent seekers rather than productive entrepreneurs.

[18] It should be noted that government bureaucrats may not be interested in well-defined property rights. Ill defined property rights can result in government officials collecting a greater payment from rent seekers.

[19] Fischer (1991) argues that the level/growth distinctions are largely irrelevant for most of the empirical growth literature given the limited time series that exists for a large number of countries.

[20] Barro (1991) finds that a higher share of government consumption expenditure, ill defined property rights (as measured by political instability) and market distortion all have a negative impact on economic growth.

[21] With common technology and preferences and factor mobility the neoclassical model predicts a convergence of all countries in levels of income and rates of growth. The lack of convergence in the cross-country data is an important empirical phenomenon which is inconsistent with the prediction of the neoclassical model. For evidence on convergence see Baumol (1986).

[22] Pranab Bardham (1990) in summarizing the literature on the role of the state and economic development stated that "the literature in development economics has now turned full circle from the unquestioning dirigism of the early 1950's to the gory neoclassical accounts in recent years of failure and disasters of regulatory interventionist states"(p3). Also see Krueger (1990) for a discussion of government failures in development policy.

[23] De Long and Summers (1991) believe in the importance of machinery and equipment capital but nevertheless stress that "a growth strategy based on equipment investment must be market conforming, not market replacing".

III. STABILITY OF BANKS AND ECONOMIC GROWTH

Recent developments in the study of economic growth has brought a return to the classical emphasis on the examination of the operation of individual markets and their effect on economic growth. One market which became the focus of considerable attention for the discovery of engines of growth is the market for financial intermediation services. Economists have devoted considerable attention to the question of financial development, financial stability and economic growth[24] Financial intermediaries ameliorate the economic consequences of informational asymmetries between borrowers and lenders. The result of this intermediation is an improvement in the allocation of resources leading to increased economic activity and increased economic growth. Levine (1997) in his survey article summarizes how financial intermediaries and financial systems influence economic growth. Financial intermediaries "facilitate the trading, hedging, diversifying and pooling of risk, allocate resources, monitor managers and exert corporate control, mobilize savings and facilitate the exchange of goods and services." These functions performed by financial intermediaries influence economic growth in two ways. In the first place these functions performed by financial intermediaries facilitate the mobilization of capital (i.e. allow for capital accumulation) by altering the savings rate or by directing savings to the capital producing technologies. In the second place, financial intermediaries spur technological innovation by directing savings to entrepreneurs with the best chance of developing innovative products and production processes.

Banks, as significant financial intermediaries, are a strategically important institution in reducing informational asymmetries and improving the performance of borrowing and lending. In addition, banks are unique among financial intermediaries in that their deposit liabilities form the major part of the money supply of most nations. A well functioning monetary system facilitates efficient exchange. A poorly performing monetary system impedes efficient exchange and restricts economic activity.

There is considerably empirical evidence on the positive association between financial development and economic growth. The crucial question has always been the direction of causality. There are those who believe that financial development follows growth and as such financial development is not an engine of growth[25]. Lucas (1988) believes that growth is mainly due to technological progress and this leaves little room for financial development to explain growth.

> Recent empirical evidence is clear. Levine (2000) concluded that:
>
> ....the exogenous component of financial intermediary development is positively and robustly linked with economic growth.
>
> .....
>
> ....Economically the impact is large. For example, the estimated coefficients suggest that if Argentine had enjoyed the level of financial intermediary development of the average developing country during the 1960–95 period, it would have experienced about one percentage point faster per capita GDP growth per annum over this period.(pp.1–5).

[24] The current interest can be dated from Goldsmith (1969). For a survey of this literature see Gertler (1988) and Levine (1997).
[25] See Robinson(1952).

Levine also empirically demonstrated that:

> ....the degree to which financial intermediaries can acquire information about firms, write contracts, and have these contracts enforced will fundamentally influence the ability of those intermediaries to identify worthy firms, exert corporate control, manage risk, mobilize savings and ease exchanges.(p.6)

Levine empirically demonstrated the proposition of Adam Smith that it is strategically important for governments to enforce contract performance.

There is also casual empirical evidence to suggest the crucial importance of a well functioning and stable banking system for economic growth. The US Great Depression from 1929–33, probably the most severe depression in US history, demonstrates what can happen when there is a crisis in the banking system.[26] In 1929 the US went into recession. What turned this recession into a major contraction was the three banking crises from 1930–33. In this three year period, about one in every three banks in the US suspended.[27] These bank failures seriously disrupted the lending and borrowing markets and resulted in a major contraction in the money supply of the nation.[28] The banking crisis turned a recession into a major contraction. Clearly an unstable banking system can have disastrous effects on economic growth.[29]

Time series data, cross-section data and casual empiricism all point to the importance of bank stability for maintaining economic growth. Given this empirical evidence, it is important to identify the government policies that are necessary in order to maintain a stable banking system.

IV. GOVERNMENT POLICIES NEEDED TO MAINTAIN BANK STABILITY

I propose to examine North American banking history to see what government policies are most conducive to banking sector stability.

1. Non-Risk Rated Public Provided Deposit Insurance

There is considerable debate in the economics profession as to whether non-risk rated public provided deposit insurance prevents bank runs and leads to bank stability or whether such a deposit insurance scheme has fatal moral hazard flaws resulting in excessive risk taking by banks and leading to increased bank instability.[30]

[26] For a discussion of this period in US history see Friedman and Schwartz (1963).
[27] More than 9,000 banks suspended in the period from 1930 through 1933.
[28] From 1929 to 1933, the broad definition of money in the US declined by 1/3. In Canada, no banks failed from 1929-33 and from 1929-33, the money supply declined by 13%.
[29] From 1929 to 1933, real net national product in the US declined by more than a third.
[30] For a discussion of how deposit insurance results in banking sector instability see Carr, Mathewson and Quigley (1994).

One of the earliest arguments advanced for publicly provided deposit insurance was made by Friedman and Schwartz (1963) who viewed deposit insurance as `the most important structural change in the banking system to result from the 1933 panic and indeed, in our view the structural change most conducive to monetary stability..." (p. 434). Friedman and Schwartz realized that this was intrusive government policy[31] but that deposit insurance was needed to guarantee the stability of the banking system and to prevent bank runs. Because of the 'first come first serve' rule in settling bank claims (prior to bankruptcy) there will be runs on banks that are rumoured to have problems. Because of costly information, if depositors could not differentiate between firm specific and industry wide shocks, there would be a contagion effect from a bank failure and banking panics could result. Hence there were negative externalities in bank failures. The argument is that public provided deposit insurance could eliminate these bank runs by eliminating the threat to depositors' funds. According to this argument, deposit insurance is in the public interest: it prevents bank runs, provides for a stable banking system and allows economic agents to have confidence in the safety of their savings in banks. The 1980's has seen the development of a number of elegant models characterized by imperfect information that led to rational bank runs. The models of Diamond and Dybvig (1983), Jacklin and Bhattacharya (1988), Postlewaite and Vives (1987) and Smith (1983) are all in the Friedman and Schwartz tradition and offer a public interest explanation for government provided deposit insurance. We believe these models are incapable of explaining the actual evolution of deposit insurance schemes in Canada and in the US.

Government provided non-risk rated deposit insurance is a major intervention by government in the operation of the banking system. In a banking system without government interference risky small banks would have a difficult time competing with safe larger banks. Either small banks would be unable to attract deposits or they would have to pay a risk premium. A non-risk rated deposit insurance scheme allows riskier banks to attract deposits on the same terms as safer banks. This scheme protects and subsidizes riskier banks at the expense of safe banks. We contend that deposit insurance was enacted in the private interest of high risk (small) banks. We also argue that such a scheme ultimately destabilizes the banking system; it results in a misallocation of deposit savings to high risk institutions, an inappropriately high level of risky investments and as a consequence a higher level of bankruptcies among financial intermediaries. These effects result in a lower level of income and a lower level of growth. There are additional negative effects of such a scheme on growth. The initial lobbying by the beneficiaries of the scheme (the small banks) and the continual lobbying to maintain the scheme, absorb resources and reduce income. In addition, when increased bankruptcies occur, general taxpayers will be called upon to help finance the scheme and higher taxes imposed on the productive sectors of the economy will reduce the incentive to produce and this too will result in a decrease in income. One additional effect of the rent seeking to maintain this scheme, is that talented people will be attracted to rent seeking activities and away from entrepreneurial activities. This movement of talented people away from productive activities will result in lower income levels and lower rates of growth.[32]

There are two plausible explanations for a major government intervention in the banking sector. If the public interest explanation is correct, deposit insurance will prevent bank runs and provide for a stable banking system which will be of fundamental importance in providing for transformation of savings into capital formation and providing for economic growth. If the private interest explanation is correct, publicly provided non risk rated deposit insurance is a major government intervention in the operation of financial markets to protect the private interest of small risky banks. Such intervention will misallocate savings and destabilize the financial system and retard capital formation and economic growth. It is of crucial importance to differentiate between these two explanations of deposit insurance. I propose to examine the evolution of deposit insurance in Canada and the U.S. in order to test these two hypotheses.

[31] Although Friedman recommended deposit insurance, this was not his first best policy: the first best policy was 100% reserves.
[32] This argument is made by Murphy, Schliefer & Vishny (1991).

A. Deposit Insurance in Canada

Deposit insurance was introduced in Canada in 1967. The history of banking in Canada until 1967 reveals a small number of large national banks (with an extended network of branches) and entry barriers into national banking. Small regional banks existed but they technically were known as trust and loan companies[33]. Small regional banks didn't become important until after World War II. The banking system in Canada prior to 1967 was very stable. The last bank to fail prior to 1967 was the Home Bank in 1923. Canada went through the Great Depression without deposit insurance and without a single bank failure. The Canadian banking system was not subject to bank runs.

In 1966 some local trust and loan companies were experiencing difficulties. With increased financial volatility (primarily in interest rates) beginning in the mid-1960's, local trust and loan companies (i.e. small banks) with their undiversified regional portfolios were the institutions at risk. Depositors withdrew money from the small banks and placed them with the large national banks. This was not a bank run in any meaningful sense of the word. No disintermediation took place. Depositors were simply switching deposits from what they perceived to be risky institutions to safer institutions. This transfer did not take place because of imperfect information. In fact it was because of relatively accurate information on the increased riskiness of small banks, that depositors switched from small to large banks.

The small trust companies lobbied government for protection of their deposit base. In 1967 the Federal government enacted non-risk rated deposit insurance. I believe that the facts of the introduction of deposit insurance in Canada do not fit the public interest theory.

(i) Deposit insurance in Canada was enacted when the banking system was stable

(ii) The Canadian banking system had been stable for a long time. No Canadian bank failed during the Great Depression. This should dispel the myth that deposit insurance is necessary to maintain bank stability.

(iii) The large national banks opposed the introduction of deposit insurance. If deposit insurance was in the public interest all banks should have welcomed its introduction. A more stable financial system would be beneficial to all banks.

(iv) When deposit insurance was introduced it was made compulsory for the large national banks and made optional for the smaller provincially incorporated trust and loan companies. The public interest argument should dictate that all banks should be compelled to join. This provision is consistent with the private interest theory that deposit insurance subsidized the small risky banks and taxed the large safer banks. The large safer banks would have to be compelled to join. No bank would freely volunteer to be taxed. It should be noted that all provincially incorporated trust and loan companies voluntarily joined the Deposit Insurance Scheme. This is further evidence that these small banks were the main beneficiaries of the deposit insurance scheme.

[33] In 1966 the average size of Ontario and Federal trust and loan companies was $59.6 million compared to an average size of national banks of $3.4 billion (in assets).

The data from the post-Deposit Insurance area in Canada is also supportive of the private interest theory. If deposit insurance subsidized small banks it should encourage the entry of new small banks. From 1949 to 1966, 37 new trust and loan companies entered the industry[34] resulting in a net entry of 12 new firms in the period prior to deposit insurance. From 1968 to 1985, 62 new trust and loan companies entered the industry resulted in a net entry of 31 companies[35]. Of the 91 loan and trust companies that existed in 1985, 62 entered since 1968.

This evidence on entry is re-enforced by looking at a standard index of concentration, the Herfindahl index. From 1949 to 1967 the Herfindahl index declined by 0.4% annually and after 1967 declined by a significantly larger downward trend of 1.3% annually.

The private interest theory claims that deposit insurance subsidizes small risky banks and taxes large safer banks and hence results in an inefficiently high level of risk in the portfolio of banks. This higher level of risk taking should lead to an increase in bank failures. From 1949 to 1966 there were no failures among national banks or trust and loan companies. From 1968 to 1987, 14 Ontario or federal trust and loan companies failed of which 11 were incorporated after 1967 and three national bank failed all of which were incorporated after 1967.

Trust and loan company failures were uncommon prior to 1967 and were common place after the introduction of deposit insurance. Bank failures which were unheard of prior to 1967, occurred for the first time in the post deposit insurance area. Deposit insurance in Canada has clearly weakened the stability of the banking system. Deposit insurance resulted in the inefficient allocation of savings to high risk activities. Inappropriate levels of risk were assumed by financial intermediaries. Financial institutions became insolvent with the resulting loss of resources due to `bankruptcy costs'. Deposit insurance has been very costly for Canada.

The Canadian evidence strongly supports a private interest rather than public interest explanation of deposit insurance. The Canadian evidence points to large deadweight costs of this government intervention in the financial system.

B. Deposit Insurance in the United States.

Early forms of deposit insurance in the United States go back to 1829. In that year a deposit guaranty law was passed in the state of New York. With a Bank Guaranty Law, the State collects non-risk rated premiums from the banks and uses this fund to guarantee deposits. If the fund itself is inadequate to meet the claims of insolvent banks, the member banks themselves are liable for any deficiency. In 1837 the New York Guaranty fund became insolvent and the law was abolished in 1842. A few other eastern states had similar experiences to New York.

[34] Our sample is Ontario trust and loan companies and all federally incorporated trust and loan companies.
[35] The explanation for this increased entry does not lie with an economy that is growing faster. From 1949 to 1966 GNP grew in Canada by 5.2% per annum and from 1968 to 1985 grew at 4.0% per annum.

From 1907 to 1917, 8 state governments enacted Bank Guaranty Laws[36] [37]. All these states had a relatively large number of country banks. All these state schemes failed. Consider, for example, the situation in South Dakota. Prior to the enactment of the state scheme, on average, about 13 banks a year failed (there were about 500 state banks in South Dakota). After the introduction of the Guaranty Laws, failure rate increased dramatically and by 1926, 50% of state banks in South Dakota had become insolvent. The state schemes failed for two primary reasons. In the first place, non-risk rated compulsory insurance subsidized risky activity and as a result encouraged risky behaviour on the part of the banks. Secondly, large state banks opposed the scheme. They opposed being taxed (via flat insurance premiums) to subsidize their smaller riskier competitors. These large banks could leave the State Guaranty System if they became national banks. This is exactly what happened. Large banks left the system, resulting in primarily, the small risky banks being the only banks in the system.

With the failure of the state schemes, and with the banking crises of 1930–33 resulting in the failure of the unit banking rule in protecting small country banks, we contend that small banks throughout the country pressured Congress to enact deposit insurance. A national scheme would not allow the better risks to opt out. By 1932, 13 bills were introduced in the House of Representatives and 3 in the Senate to enact deposit insurance. In 1933, a National Bank Guaranty Fund was set up and in 1935 this was turned into a true system of deposit insurance.

The 1935 bill compelled all member banks of the Federal Reserve System to have deposit insurance. This provision compelled the good risks to stay in the system. Non-member banks had the option of obtaining deposit insurance. The 1935 law expressly stated that there be no discrimination between member and non-member banks or large and small banks and there was none. It would seem that this provision dictated flat rate premiums where small and large banks were levied the same premium per dollar of deposit. This provision is consistent with our private interest theory.

It should be noted that when the State Guaranty funds were set-up from 1907 to 1917, restrictions were placed on the rate of interest that could be paid on insured deposits. Similarly, usury restrictions were adopted when national deposit insurance was enacted in the Bank Act of 1933. The same Bank Act of 1933 which enacted deposit insurance prohibited interest payments on demand deposits in Federal Reserve member banks and empowered the Board of Governors of the Federal Reserve system to impose maximum rates that could be paid by member banks on time deposits. The Bank Act of 1935 also prohibited interest on demand deposits in other insured banks and allowed interest rate ceilings on time deposits to be set by the FDIC on insured non-member banks.

The general interpretation of these usury restrictions, advanced by Friedman and Schwartz (1963), was that these restrictions were a government enforced price-fixing agreement. The interpretation we advance is that governments understood the moral hazard problems inherent in any deposit insurance scheme[38]. These usury restrictions were placed to limit these moral hazard problems. With deposit insurance, risky institutions have an incentive to obtain large amounts of deposit by paying a premium over the going rate of interest on deposits. These deposits are then invested in risky assets. Insured depositors have an incentive to place their deposits in those institutions paying the highest rate on deposits, regardless of the riskiness of the investing institution's portfolio. Restrictions on interest paid on insured deposits, limits the ability of risky institutions to attract new funds. The strongest evidence that supports our moral hazard interpretation of these

[36] The states that enacted these laws were Oklahoma (1908), Kansas (1909), Texas (1909), Nebraska (1909), Mississippi (1914), South Dakota (1915), North Dakota (1917), Washington (1917).
[37] For a discussion of this period see White (1983) and Calomiris (1990).
[38] The government had this knowledge because of the experience with the earlier state deposit insurance schemes. In addition, the large banks stressed these adverse moral hazard effects as one of the prime reasons not to adopt deposit insurance.

interest rate regulations is that these regulations were enacted as part of a comprehensive system of deposit insurance. In addition, these restrictions applied to all banks that had deposit insurance. Given the existence of deposit insurance, these interest rate regulations, by limiting the effects of moral hazard, were in all likelihood welfare improving. I will return to this point shortly.

An examination of the timing of the enactment of deposit insurance schemes in the US can shed light on the private versus public interest debate. In fact the whole North American experience provides a useful test of our two hypotheses. When Congress created the National Banking System in 1863, it intended to phase out state banks. It never realized this intention. From 1891-1920 state chartered banks increased from 3100 to 22,000 (while national banks increased from 3600 to 8000)[39]. With the increasing numbers of state banks, state banks increased their political strength and from 1907 to 1917 were able to obtain State Guarantee Systems in 8 rural states. These State Guarantee Systems enabled the small state banks to compete more effectively with the large (national) banks. When the state schemes failed because the better risks left the system, the small state banks lobbied for a National System (where the better risks would be compelled to remain in the system). Such a national scheme was enacted in 1933 and 1935.

In Canada between 1901 and 1923, 9 banks failed[40]. These failures caused the Government to explicitly consider deposit insurance during the revisions of the Bank Act in 1914 and 1923, with the U.S. State schemes as the model. Canada rejected deposit insurance. We contend that this was because in Canada, there were only a few small and risky banks. After World War II there was a substantial growth in regional trust and loan companies. It was only with this growth in small local banks, did there develop a significant political lobby to pressure the Government to enact deposit insurance in 1967.

This diversity of Canadian and the US experience is capable of being explained by the private interest theory. It is only with the growth of small local banks that a private interest group becomes viable to lobby for deposit insurance. The public interest theory is incapable of explaining the diversity of experience. If deposit insurance was beneficial to the US in the 1920's and 1930's, it was also beneficial to Canada. Why didn't Canada enact deposit insurance at that time?

Let us now consider the Post-National Deposit Insurance area in the US. The private interest theory would predict increased entry of risky banks and as a consequence an increase in bank failures. This did occur in the U.S. but with an implausibly long-time lag. "From 1921 to 1933, each year requires at least three digits to record the number of banks that suspended; from 1934 on two digits suffice and from 1943 through 1960, one digit for both insured and noninsured banks" (Friedman and Schwartz, 1963, p. 437). This low failure rate continued until the beginning of the 1980's. By the middle of the 1980's the failure rate of banks was substantial and once again required three digits to record the number of suspended banks. Why this long time lag?

The answer lies in an argument made by Keeley (1990). Keeley's explanation is that banks were protected, by a number of arrangements, from competition. "In the 1950's and even early 1960's banks partially were protected from competition by a variety of regulatory barriers. For example, chartering was very restrictive until the mid 1960's .....Moreover, some banks were protected by various state laws that limited or prohibited branching, multibank holding company, and interstate bank expansion" (p. 1185). These entry barriers made bank charters valuable and the valuable bank charters constituted a bond whose value disappeared in bankruptcy. This bond substantially eliminated any moral hazard problem. With the elimination of these entry barriers in the 1970's and 1980's[41], competition increased, the value of the bond disappeared and the expected moral hazard problem became operative.

[39] See Barnett (1911).
[40] See Beckhart (1929) pp. 334-337.
[41] Keeley also claimed technological change increased the competition that banks faced from non-bank

The moral hazard problem worsened in the 1980's for another reason. Interest rate controls on deposits were eliminated. This deposit interest rate deregulation allowed risky institutions to obtain a greater share of deposit funds, resulting in increased growth of these risky institutions. This growth in risky institutions contributed to the high rate of bank failures in the 1980's.

This episode illustrates that deregulation, with continued deposit insurance can have harmful effects. Deposit insurance, with its attendant moral hazard problems, require substantial government regulation to make the system manageable. Deregulation of financial markets in the 1980's, and increased moral hazard from deposit insurance imposed substantial costs on the US economy. The solution is not the abandonment of deregulation but the abandonment of deposit insurance. Half-measures, in this case, may be worse than no measures. The lessons of the 1980's indicate that deregulation cannot be considered complete until there is elimination of the compulsory deposit insurance system. This may seem extreme but reform of the deposit insurance system may not be able to correct its fundamental deficiency. Deposit insurance has existed for so long that it is generally assumed that the banking system can not operate efficiently in its absence. The Canadian example prior to 1967 shows that a stable banking system can be operated in the absence of government run deposit insurance.

The Canadian and the US evidence provides strong support for the private interest theory of deposit insurance. The North American experience on deposit insurance indicates that for banking sector stability there should be no public provided deposit insurance scheme or that if it is deemed political necessary to have such a scheme, at the very minimum it should be a voluntary scheme and it should be a risk rated scheme.

2. Banking Sector Competition

North American experience indicates that government polices that promote competition in the banking sector increases banking sector stability and polices that reduce competition increases banking sector instability. Consider the US unit banking rule. A large number of US states adopted the unit banking rule. In some states, banks were allowed to have only one branch within the state.[42] The unit bank rule essentially prohibited banks from competing geographically with one another. The unit banking rule also prevented banks from efficiently diversifying geographically and from taking advantage of economies of scale.

Canada did not have a unit banking rule. In 1929, there were tens of thousands of banks in the US. Many of these banks were inefficiently small with asset portfolios that were not geographically diversified. In Canada, in 1929, there were 11 relatively large banks with branches across the country. From 1929–33, over 9,000 US banks failed and not a single Canadian bank failed. The unit banking rule contributed to banking sector instability in the US.[43] Governments show allow banks to compete in all parts of the country. This is especially important today. With the vast improvements in information technology, banks should be allowed to fully take advantage of economies of scale. In general, governments should look favourably on banking sector mergers. Where mergers may result in too few domestic banks, governments should allow foreign competition.[44] Both domestic and foreign competition is crucial in improving banking sector efficiency and in accelerating long-run economic growth. Government policy should encourage banking sector competition.

---

financial firms such as investment companies, brokerage firms and insurance companies. Such changes also decreased the value of bank charters.

[42] Some States allowed branching within a city but not outside the city.

[43] Jayarante and Strahan (1996) show that when individual states of the US relaxed interstate banking restrictions, the quality of bank loans rose and per captia GDP growth accelerated.

[44] Governments in general should allow foreign competition.

3. Interest Rate Regulations

Prior to the 1980's there existed significant interest rate restrictions on US banks. Banks were not allowed to pay interest on demand deposits and Regulation Q provided for maximum interest rates to be set on time deposits. Like all regulation, there is the question of the extent the banks found ways to get around these regulations. Initially these regulations prevented competition for deposits among the banks. However with the growth of non-bank financial intermediaries and the growth of substitute instruments (e.g. Money Market Mutual Funds and Negotiable Order of Withdrawl Accounts), interest rate restrictions primarily prevented banks from being able to fully compete with non-bank financial intermediaries. In time of high interest rates, these interest rate restrictions were particularly onerous on banks and as such contributed to the banking sector instability. Interest rate restrictions are clearly undesirable because they contribute to instability in the banking sector.[45] Banks need flexibility to compete with new institutions and new instruments.

4. Banks as Instruments for Social Policy

In both Canada and the United States, governments have used banks as a way to redistribute income. For example, both countries have policies which encourage banks to make low interest loans to small businesses. If governments desire to subsidize small businesses they should do so in an open and transparent way; they should give direct subsidies to small businesses. Using banks to finance such a subsidy impedes the ability of banks from achieving their economically optimal portfolio. In addition, such a policy impedes the ability of banks from competing with non-bank financial intermediaries, and leads to banking sector instabilities. Apart from issues of prudential regulation, government should have no role to play in the credit allocation decision of banks. Government interference in credit allocation decisions are often done for political purposes. To maintain bank sector stability governments should refrain from considering banks as a tool for financing social transfers.

5. Credit Contract Enforcement

There is an important function for governments to play in ensuring banking sector stability. Levine, Loayza and Beck (1999) found that:

> .....the degree to which financial intermediaries can acquire information about firms, write contracts and have these contracts enforced will fundamentally influence the ability of these intermediaries to identify with firms, exact corporate control, manage risk and mobilize savings and ease exchange.

Governments have a responsibility to enforce loan contracts and encourage the publication of comprehensive and accurate corporate financial statements. Such policy is of fundamental importance in maintaining banking sector stability.

[45] The only exception is the case already mentioned where interest rate restrictions reduce the moral hazard problems inherent in a non-risk rated public deposit insurance scheme.

6. Stable Monetary Policy

An important role for government or a government institution like a central bank is to provide for a stable monetary policy. It is often overlooked that deposit liabilities of banks form the most significant part of a nations money supply. A well-function money supply is necessary for two important reasons. Money is a medium of exchange. If money growth is high and variable, the inflation rate will be high and variable, making stable exchange difficult. Also high inflation rates tend to be negatively correlated with economic growth. In addition, high and variable money growth rates result in high and variable interest rates which increase instability in the banking system. High and volatile interest rates in the 1980's in Canada was a factor resulting in the failure of a number of financial intermediaries. It is of the utmost importance for a stable banking system to have a stable monetary policy.

V. CONCLUSIONS

There is substantial empirical evidence to indicate that banking development and banking stability are important for maintaining economic growth. Governments have an important role to play in promoting banking sector stability. Governments should not enact non-risk rated insurance schemes; government should not hinder banking sector competition by imposing a unit banking rule or by restricting foreign competition; governments should not regulate interest rates or use banks as a means of achieving social transfers. Government should enforce credit contracts, encourage the publication of accurate and comprehensive corporate financial statements and provide for maximum bank flexibility so that banks can optimally perform their financial intermediary services.

References

Bardham, Pranah, “Symposium on the State and Economic Development” Journal of Economic Perspectives IV (Summer, 1990) 3-7.

Barro, Robert J., “Economic Growth in a Cross Section of Countries” Q.J.E. (May, 1991) 106: 407-443

Baumol, William J., “Productivity Growth, Convergence and Welfare: What the Long-Run Data Show”, A.E.R. (December 1986), 76:1072-85.

Becker, Gary S., Murphy, Kevin M., and Tamura, Robert, “Human Capital, Fertility and Economic Growth”, J.P.E. (October 1990) 9: 12-37.

Beckhart, B.H., “The Banking System of Canada” in H.P. Willis and B.H. Beckhart (eds) Foreign Banking Systems, (New York, 1929).

Calomiris, C.W., “Is Deposit Insurance Necessary? A Historical Perspective,” Journal of Economic History, vol. L. no. 2 (June, 1990), pp. 283-295.

Carr, Jack, “Deposit Insurance, Savings and Economic Growth’ in Economic Policy, Financial Markets and Economic Growth. Westview Press, 1993.

Carr, Jack, Mathewson, Frank, and Quigley, Neil , Ensuring Failure, (Toronto, 1994).

De Long, J. Bradford, "Did J.P. Morgan's Men Add Value? An Economists' Prospective on Financial Capitalism", NBER, Working Paper No. 3426, August 1990.

De Long, Bradford, J. and Summers, L.H., "Equipment Investment and Economic Growth". Q.J.E. (May, 1991) 106: 445-502.

Denison, Edward F., The Sources of Economic Growth in the United States, Washington Comm. Econ. Development, 1961.

Diamond, D. and Dybvig, P., "Bank Runs, Deposit Insurance and Liquidity", J.P.E. (June, 1983) 91:401-19.

Domar, E., Essays in the Theory of Economic Growth, Oxford University Press, 1957.

Fischer, Stanley, "Growth, Macroeconomics and Development" in NBER Macroeconomics Annual Vol 6. MIT Press, 1991

Friedman, Milton and Schwartz, Anna, A Monetary History of the United States, 1867-1960, Princeton: Princeton University Press, 1963.

Gertler, M., “Financial Structure and Aggregate Economic Activity: An Overview” in Journal of Money, Credit, and Banking ,1988, 559-88.

Goldsmith, R. W., Financial Structure and Development, Yale university press, 1969.

Harrod, Roy F., Towards A Dynamic Economics, London: Macmillan, 1948.

Jacklin, C. and Bhattacharya, S., "Distinguishing Panics and Information-Based Bank Runs", J.P.E. (June, 1988) 96:569-92.

Jayaratne, J. And Strahan, P., “The Finance- Growth Nexus: Evidence from Bank Branch Deregulation,” in QJE, 1996, 639-670.

Keeley, M., "Deposit Insurance, Risk and Market Power", A.E.R. (December, 1990) 80(5): 1183-1200.

Krueger, Anne O. "Government Failures in Development" Journal of Economic Perspectives IV (Summer, 1990) 9-24.

Levine, Ross and Renelt, David, "A Sensitivity Analysis of Cross-Country Growth Regressions", A.E.R. (Sept. 1992) 82: 942-963

Levine, Ross, “Financial Development and Economic Growth: Views and Agenda” in JEL, June 1997, 688-726.

Levine, Ross, Loayza, Norman, and Beck, Thomas, “Financial Intermediation and Growth: Causality and Causes” in Journal of Monetary Economics, August 2000, 31-77.

Lucas, Robert E., Jr., “Why Doesn't Capital Flow from Rich to Poor Countries,” A.E.R. (May 1990) 80: 92-96.

_____, “On the Mechanics of Economic Development,” Journal of Monetary Economics, (July 1988) 22:3-42

Murphy, Kevin, Shleifer, Andrei and Vishny, Robert W., “The Allocation of Talent: Implications for Growth”. Q.J.E. (May, 1991) 106: 501-530.

Postlewaite, A. and Vives, X., “Bank Runs as an Equilibrium Phenomena,” J.P.E. (June, 1987), 95: 485-491.

Robinson, Joan, “The Generalization of the General Theory” in The Rate of Interest and Other Essays, London, 1952.

Romer, Paul M., “Increasing Returns and Long-Run Growth”, J.P.E. (October 1986) 94: 1002-37.

Romer, Paul M., "Endogenous Technological Change", J.P.E. (October 1990), 98:71-102.

Romer, T. and Weingast, B.R., “Political Foundations of the Thrift Debacle”, Hoover Institution, Working Paper E 90 22, 1990.

Schultz, Theodore W., "Investment in Human Capital", A.E.R. (March 1961) 51:1-17.

Smith, Adam, An Inquiry into the Nature and Causes of the Wealth of Nations, 1st ed., 1776, New York: Modern Library, 1937.

Smith, Bruce, “Bank Panics, Suspensions and Geography: Some Notes on the Contagion of Fear in Banking”, Rochester Center for Economic Growth, 1988.

Solow, Robert M. “A Contribution to the Theory of Economic Growth”, Q.J.E. (February 1956) 70: 65-94.

White, E.N., The Regulation and Reform of the American Banking System, 1900-1929, (Princeton UP, 1983).

SESSION II: THE ROLE OF FINANCIAL INTERMEDIARIES

(A) Part a (Speakers: Prof James Barth and Mr Robert McCauley; Discussant: Dr Frank Song; and Moderator: Dr Mark Spiegel)

Prof Barth in his presentation wished to address two basic questions: did economies with better developed financial systems enjoy greater and more stable economic growth, and if so, what legal environments, regulations, supervisory practices and other policy actions would contribute to better financial systems. There was ample evidence of a positive and significant correlation between the size of financial systems and real GDP per capita. The developed economies tended to have bigger financial systems and vice versa. Citing from the study of King and Levine, both financial depth and stock market liquidity were associated in a significant and positive way with economic growth. Their effects were transmitted through total factor productivity growth instead of capital accumulation. He also shared the view of Levine and Zervos and their study findings that banks and stock markets were complements. They function jointly together to promote economic growth. Besides, there was also ample evidence that the legal environment did matter. Investors would only be willing to invest if they were confident that their rights would be well enforced. There was a positive relationship between intermediary private credit and economic growth and total factor productivity. There were also positive linkage between creditor rights and intermediary development, and contract enforcement and intermediary development, contract enforcement and stock market liquidity. On the contrary, restrictions on banks could impose adverse effect on financial development and there was significant negative correlation between financial market concentration and real GDP growth. Though the share of foreign assets did not matter, the freedom for foreign banks to enter the market was relevant. Also ownership mattered. The greater the government ownership of the banking system, the lower would be bank development and the higher the non-performing loans and net interest margin. Finally, it was pointed out that there was no single regulatory supervisory framework universally applicable to all economies at all times.

Mr McCauley reviewed the Minsky-Kindleberger model, with special emphasis on financial instability. Since financial instability could recur and balance sheet rebuilding could hurt growth, effective measures should be adopted to handle the problem. While it was a common belief that monetary policy should be used to fight asset price inflation before the crash or to ward off asset price deflation after the crash, Mr McCauley suggested using credit policies to deal with the situation. The four different approaches for adopting credit policies included publicising concentrations of credit exposed to inflated assets, regulating terms of credit, increasing capital requirements, and imposing reserve requirements against credit growth.

Discussion

Commenting on Prof Bath's paper, **Dr Song** shared the main thrust of arguments in Prof Barth's presentation, but he took exceptions on some details. He expected financial development would also raise growth by increasing physical capital accumulation apart from raising productivity. Besides, he believed that finance did matter even if income and substitution effect, risk diversification and precautionary savings effect existed. This was in contrast to the concern raised by Prof Barth in his paper. Dr Song also noted that the methodology used in most studies was cross-sectional. He suggested that future studies could adopt time-series approach on individual economy. Also, he proposed to look into the impact of financial distortions.

In respect of Mr McCauley's paper, Dr Song reckoned that financial instabilities could be inherent in an economy and that it would be very difficult to judge whether there were bubbles, asset inflation, or other kinds of instability. So, adopting policies to tackle the problem could be

premature. He believed that credit policies and information policies should target for long term goals rather than for addressing short-term instability issues.

In response to a floor question on details such as how financial development should be measured and through which channels finance raised growth, Dr Barth noted that there were disagreements on these two respects, but stressed that there was no dispute that finance did matter. He also mentioned that data availability would be one of the limitations that future studies on this topic would have to face.

Prof Barth, in concluding his presentation, addressed again the issue of how finance promoted growth. He cited that there were more evidence showing that finance raised productivity than increasing capital accumulation or saving rate. Regarding Dr Song's another query, Prof Barth elaborated on the risk diversification and precautionary saving effect. With less risk, individuals would save less to guard against unexpected events, leading to lower saving rate and imposing negative effect on economic growth. Apart from these, Prof Barth agreed with Dr Song on the importance of time-series studies in future research.

In Mr McCauley's concluding remark, he emphasised again that if private credit grew at a higher rate than nominal GDP for an extended period of time, most of the excess credit growth would end up as non-performing loans. Though he agreed with Dr Song who doubted the ability of monetary policies and credit policies in arresting asset inflation, he found it important to put central credit institutions at some distance away from inflated asset prices. So, when the assets prices fell, it would not take down all the major banks. He cited the experiences of Hong Kong and Japan as references.

(B) Part b (Speakers: Prof John Chant and Prof Michael Skully; Discussant: Dr Hugh Thomas; and Moderator: Dr Mark Spiegel)

Prof Chant discussed the interrelationship between the development of financial institutions and economic growth with emphasis on the role and functions of financial institutions. He then identified six functions of a financial system and elaborated two of them. Firstly, increasingly banking was recognised as an information industry. Financial institutions were portrayed as "delegated monitors" supervising portfolios of loans on behalf of depositors. Lending was carried out collectively on behalf of many ultimate suppliers of credit. The collective use of financial institutions had helped pool resources and avoid duplication. Then, he derived three criteria for facilitating such function. These included a framework that encouraged financial institutions to forego non-arm's length lending and to lend to productive enterprises, complimented by ready access to reliable information, and enforceable contracts. Secondly, he looked into the payment system function and concluded that this must be a system by which banks could settle with one another and collateral arrangements were necessary. Finally, evidence showed that financial development contributed to growth, and measures that would support financial development would support growth.

Prof Skully described how bank lending changed over time. He then discussed the importance of evergreen overdraft that was replaced by fixed-term advances and other types of financing, and the rate of increase in the ratio of bank lending to deposits. Prof Skully summarised six types of government policies that would have adverse effects on the banking sector. These included interest rate ceilings, reserve requirements, government-directed lending, government-owned banks, restriction on entries of foreign banks, and restriction on international capital flow. Although a lot of reforms had taken place after the Asian financial crisis, Prof Skully still saw further reforms needed, especially in respect of government-directed lending.

Discussion

In contrast to Dr Chant's point of view, **Dr Thomas** said that market enphoria from time to time would create the conditions of excess liquidity. The financial market would eventually correct itself when the irrational exuberance was recognised. But condition would be chronic for financial institutions with guaranteed deposits. In the absence of a convenient, liquid, safe, and transparent market for other investments, he saw the retail financial institutions' deposit the only place where money could be kept. In fact, he regarded the payment system function as a function central to traditional banking. The information revolution, however, enabled non-bank organisations to carry out the same function. So, instead of liberalisation, Dr Thomas, following the conclusion of Rajan, expected regulatory privilege and suppression of public information about firms necessary to provide banks with some rents for survival.

In concluding his presentation, Prof Chant supported the argument that bank might disappear, but just for some economies and not for all.

Commenting on Prof Skully's paper, Dr Thomas reckoned that the six repressive measures summarised by Prof Skully were attempts by regulators to prevent financial institutions from committing moral hazards. Yet, these led to the temptation of imposing political pressure on financial institutions' asset allocation and thus excess liquidity for the privileged firms. Besides, he considered that the loans to deposit ratios should be measure of bank liquidity rather than aggressiveness of bank lending. To handle the problem of excess liquidity, he found the ending of government guarantees on deposits a desirable and feasible solution.

In response to a question from the floor on how to stop government-directed lending but at the same time achieving policy objective such as helping small enterprises to grow, Prof Skully suggested to look into the reasons why these businesses failed to acquire credits. It could be due

to the education level of the entrepreneurs, or the inability in providing accounts. The government should address the problems associated with small businesses and take a long-term view in solving these problems.

Picking up from the discussion on whether banks would disappear, Prof Skully expected that they would disappear in the sense that they would expand to other areas such as trust management. Also, he agreed that non-bank organisations were taking up an increasing and significant role in the payment system. Finally, he raised the attention that repressive measures could implicitly exist in many forms as illustrated in the cases of Malaysia and China.

FINANCE AND GROWTH: AN OVERVIEW

Professor James R. Barth[*] *and Ross Levin*[**]

Introduction

- There has been a tremendous resurgence in interest in the relationship between finance and growth. The central issues are whether financial development causes growth and, if so, what can be done to promote such development.

- As regards the first issue, Nobel Laureate Merton Miller (1998) once said, "That financial markets contribute to economic growth is a proposition almost too obvious for serious discussion at a forum this sophisticated."

- There has been spectacular growth in the overall size of world financial markets relative to world GDP.

- World equity market capitalization is nearly 120 percent of world GDP, up from only 40 percent in 1990.

- World bond market capitalization is about 100 percent of world GDP, up from about 60 percent in 1990.

- World bank assets as a percent of world GDP have remained relatively flat over the past decade at about 100 to 120 percent of world GDP.

- In today's world, mature economies do not need the size of banking systems established in their earlier growth years, so consolidation and integration is understandable.

- The structure of world bank assets has undergone substantial change. World bank assets fell fairly dramatically as a share of bond and equity market capitalization, from about 100 percent in 1990 to about 50 percent at yearend 1999.

- Wealth increasingly flows into bonds and stocks, not bank deposits. And the major source of credit comes from capital markets, not banks.

- Even in such bank-centered countries as Germany and Japan, the dominance of banks is declining relative to the bond and stock markets.

- Yet, the distribution of world financial assets is unequally distributed among countries around the world. Over 90 percent of total financial assets are accounted for by countries with less than 20 percent of the total population.

Basic Questions and Disagreements

- Do countries with better developed financial systems enjoy greater and more stable economic growth?

---

[*] James R. Barth is Lowder Eminent Scholar in Finance at Auburn University and Senior Finance Fellow at the Milken Institute.
[**] Ross Levine is Carlson Chair in Finance at the University of Minnesota.

- If so, what legal environments, regulations, supervisory practices, and other policy actions contribute to better financial systems?

- Not everyone agrees on the impact of financial systems on economic performance. There are five basic views:
    1. finance promotes growth,
    2. finance follows growth,
    3. finance doesn't matter,
    4. finance hurts growth, and
    5. finance matters for crises.

- The role of financial intermediaries and markets is to mobilize savings better, allocate savings and monitor firms better, and augment liquidity and facilitate risk management better.

- Yet, finance may not accelerate growth due to income and substitution effects as well as due to risk diversification and precautionary savings effects.

- Furthermore, some third factor may drive both finance and growth so that the latter does not matter.

- Or, there may be a simultaneity problem so that a close statistical relationship may not imply causality from finance to growth.

Empirical Evidence

- There are big cross-country differences in bank assets, stocks and bonds as a percentage of GDP. The percentage ranges from less than 100 percent to well over 400 percent.

- There is a significantly positive correlation between the size of a country's financial system and its real GDP per capita.

- There also are big cross-country differences in the three components (bank assets, bonds, stocks) as a percentage of GDP, with each one significantly and positively correlated with real GDP per capita.

- Rigorous empirical evidence convincingly demonstrates that financial depth predicts future productivity growth so well as overall economic growth.

- Rigorous empirical evidence also convincingly demonstrates that stock market liquidity has the same effects.

- Thus, the overwhelming evidence demonstrates that finance promotes growth.

Issues about the Evidence

- Some are concerned that important factors affecting growth might be omitted, the measures of the financial system might be inadequate to capture its benefits, individual country-specific traits might be ignored, endogeneity might not be appropriately taken into account, and/or that the sources of the growth-enhancing effects due to the financial system are unclear.

- But others have addressed these concerns by including a variety of plausible conditioning or

control variables, using alternative measures of the financial system, employing panel methods to allow for unobservable country-specific heterogeneity, using plausible instrumental variables, employing firm-and industry-level data, using time-series data and methods, performing case studies, and assessing different sources of the growth-enhancing effects.

- Thus, it is found that the impact of finance on growth is not due to reverse causality, robust to many other factors affecting growth, robust when allowance is made for parameter variation across countries and over time, and economically significant.

- Moreover, the impact of finance on growth runs primarily through total factor productivity, and not through the saving rate or physical capital formation.

Are Market-or Bank-Based Financial Systems Better?

- There are big cross-country differences in bank assets as a percentage of stock and bond capitalization. Germany has a ratio of 168 percent, whereas the US has a ratio of only 18 percent. As a result, Germany is considered to have a bank-based financial system, while the US is considered to have a capital market-based financial system.

- There is no significant correlation between bank assets as a percentage of stock and bond capitalization and real GDP per capita.

- Rigorous empirical evidence convincingly demonstrates that both markets and banks matter for growth. They are complements not substitutes with respect to growth.

- Thus, governments should not take policy actions to tip the playing field in favor of banks or markets.

What About the Legal Environment: Does It Matter for Finance?

- Rafel La Porta, Florencio Lopez-de Silanes, Andre Shleifer, and Robert W. Vishny (2000) argue that "When investor rights…are extensive and well enforced…investors are willing to finance firms. In contrast, when the legal system does not protect investors, corporate governance and finance do not work well."

- Rigorous empirical evidence convincingly demonstrates that both creditor rights and shareholder rights have a significantly positive effect on bank and stock market development.

- Furthermore, contract enforcement has a significantly positive effect on bank and stock development.

What About the Regulatory and Supervisory Framework: Does It Matter for Bank Development and Performance?

- There are big cross-country differences in restrictions on bank activities and mixing of banking and commerce.

- Rigorous empirical evidence finds that there is a significantly negative correlation between real GDP per capita and the degree of overall restrictions on bank activities.

- Furthermore, rigorous empirical evidence finds that restrictions on bank activities have a negative relationship with bank development and are positively associated with bank

fragility.

- Also, rigorous empirical evidence finds that more generous deposit insurance schemes are associated with banking crises.

- Rigorous empirical evidence finds that greater diversification guidelines, moreover, seem to lower bank fragility.

- Rigorous empirical evidence finds that private monitoring also yields benefits for bank development and performance.

- However, no single regulatory and supervisory framework has been found to be universally applicable.

What About Government Ownership of Banks: Does It Matter?

- There are big cross-country differences in the percent of bank assets that are government owned. India, for example, has 80 percent ownership.

- There is significantly negative correlation between real GDP per capita and the percent of bank assets that are government owned.

- Rigorous empirical evidence finds that the percent of government-owned banks is associated with poor bank development and performance. Government ownership is also positively linked with bank fragility.

What About Foreign Ownership of Banks: Does It Matter?

- There are big cross-country differences in the percent of bank assets that are foreign owned. New Zealand, for example, has outsourced its entire banking system.

- Rigorous empirical evidence finds that foreign bank entry reduces the likelihood of banking crises.

- Rigorous empirical evidence also finds foreign bank entry improves bank efficiency.

- However, foreign bank entry-not the share of foreign bank assets in total assets-tends to spur competition and render national banking markets more efficient.

What About Opening Domestic Markets to Foreign Capital: Does It Matter?

- Rigorous empirical evidence finds that capital control liberalization temporarily raises stock market volatility, but this doesn't hurt long-run growth. It also raises liquidity, which accelerates long-run growth.

What About Bank and Stock Market Concentration: Does It Matter?

- There are big cross-country differences in the percent of deposits accounted for by the five largest banks. The percentages range from about 10 percent to 100 percent.

- There is a significantly negative correlation between real GDP per capita and the percent of deposits accounted for by the five largest banks.

- In a rigorous study, Nicola Cetorelli and Michele Gambera (2001) "find that concentration in the banking sector determines a general deadweight loss that depresses growth. However, we also find evidence that bank concentration promotes the growth of those industries that are more in need of external finance by facilitating credit access to firms, especially younger ones."

- There are also big cross-country differences in the percent of stock market capitalization of the ten largest companies. The percentages, for example, are 19 percent in the U.S. and 55 percent in Germany.

What About the Structure of the Bond Market: Does It Matter?

- There are big cross-country differences in government vs. non-government bonds outstanding.

- There is significantly negative correlation between real GDP per capita and the ratio of government bonds to total bond market capitalization.

Some Open Issues

- How will e-finance and globalization affect financial systems and who should regulate and supervise efficiently and effectively in this changing world?

- How can private-sector forces supplement and complement government-sector intervention so as to promote and assure better financial systems?

- Can more empirical evidence be mustered to assess the role of bond and derivatives markets in economic growth?

- Can more be done to assess the importance of off-balance sheet activities of banks in the growth process?

- What can be said about the role of venture capital markets in encouraging innovation and thus economic growth?

- What specific and detailed policy actions can be taken in individual countries to improve the performance of financial systems and thereby promote economic growth?

- What services provided by financial systems should be provided domestically versus outsourced to financial firms in other countries?

- What are the impacts of financial systems on the distribution of increased growth?

Looking Ahead

- As Gerard Caprio and Patrick Honohan (2001) state in their new and comprehensive book entitled *Finance an d Growth*: "The financial systems of most developing countries are very small when compared with the global financial market. E-finance will make national frontiers even more porous than before. Foolish indeed is the government that does not make itself aware of these market realities and learn to work with them."

References

Allen, Franklin, and Douglas Gale. *Comparing Financial Systems*. Cambridge, MA: MIT Press, 2000.

Andres, Javier, and Ignacio Hernando. "Does Inflation Harm Economic Growth? Evidence for the OECD." *NBER Working Paper*, no. 6062, June 1997.

Arestis, Philip, Panicos Demetriades, and Kul Luintel. "Financial Development and Economic Growth: The Role of the Stock Markets," *Journal of Money, Credit and Banking*, February 2001, pp.16-41.

Barth, James R., Gerard Caprio, Jr., and Ross Levine. "The Regulation and Supervision of Bank Around the World: A New Database." In Robert E. Litan and Richard Herring, Editors, *Integrating Emerging Market Countries into the Global Financial System*, Brookings-Wharton Papers on Financial Services, Brookings Institution Press, 2001.
http://www.worldbank.org/research/projects/bank_regulation.htm

Barth, James R., Gerard Caprio, Jr., and Ross Levine. "The Regulation and Supevision: What Works Best?" *World Bank Working Paper*, 2000.
http://www.worldbank.org/research/projects/bank_regulation.htm

Bassanini, Andrea, Stefano Scarpetta, and Philip Hemmings. "Economic Growth: The Role of Policies and Institutions. Panel Data Evidence from OECD Countries," *OECD Economics Department Working Papers*, 283, 2001.

Bebczuk, Ricardo N. "Corporate Finance, Financial Development, and Growth," Mimeo.

Beck, Thorsten, and Ross Levine. "Industry Growth and Capital Allocation: Does Having a Market- or Bank-based System Matter," Mimeo, March 2001.

Beck, Thosten, Asli Demirguc-Kunt, and Ross Levine. "Law, Politics, and Finance," Mimeo, February 2001.

Beck, Thorsten, Ross Levine, and Norman Loayza. "Finance and the Sources of Growth," *Journal of Financial Economics*, 58, 2000, pp.261-300.

Bekaert, Geert, Campbell R. Harvey, and Christian Lundblad. "Does Financial Liberalization Spur Growth?" *NBER* Working paper 8245, April 2001.

Bekaert, Geert, Campbell R. Harvey, and Christian Lundblad. "Emerging Equity Markets and Economic Development," *NBER* Working paper 7763, June 2000.

Bencivenga, Valerie R., Bruce D. Smith, and Ross M. Starr. "Transactions Costs, Technological Choice, and Endogenous Growth." *Journal of Economic Theory*, October 1995, 67(1), pp.53-177.

Booth, Laurence, et al. "Capital Structures in Developing Countries," *The Journal of Finance*, February 2001, pp.87-130.

Carlin, Wendy, and Colin Mayer. "International Evidence on Corporate Governance: Lessons for Developing Countries," *ABANTE*, 2, 2000, pp.133-60.

Caprio, Gerard, and Patrick Honohan. *Finance for Growth*. New York: Oxford University Press, 2001.

Cetorelli, Nicola, and Michele Gambera. "Banking Market Structure, Financial Dependence and Growth: International Evidence from Industry Data," *The Journal of Finance*, April 2001, pp.617-48.

Dermirguç-Kunt, Asli, Ross Levine, and Hong G. Min. "Opening to Foreign Banks: Issues of Stability, Efficiency and Growth." in *The Implications of Globalization of World Financial Markets*, edited by Seongtae Lee, Seoul, Korea: The Bank of Korea, 1998.

Dermirguç-Kunt, Asli, and Vojislav Maksimovic. "Law, Finance, and Firm Growth," *The Journal of Finance*, December 1998, pp.2107-37.

Dermirguç-Kunt, Asli, and Ross Levine. "Bank-Based and Market-Based Financial Systems: Cross Country Comparisons." *World Bank Working Paper*, 1999.

Djankov, Simeon, et al. "The Regulation of Entry," Mimeo, August 2000.

Dutz, Mark, and Aydin Hayri. "Does More Intense Competition Lead to Higher Growth?" Mimeo, June 1999.

Ergungor, Ozgur Emre. "Market-vs. Bank-Based Financial System: Do Investor Rights Really Matter?" *Federal Reserve Bank of Cleveland*, 01, 2001.

Filer, Randall K., Jan Hanousek, and Nauro Campos. "Do Stock Markets Promote Economic Growth?" Mimeo, September 1999.

Forbes, Kristin J. "A Reassessment of the Relationship Between Inequality and Growth," *The American Economic Review*, September 2000, pp.869-87.

Gallup, John Luke, Jeffrey D. Sachs, and Andrew D. Mellinger. "Geography and Economic Development," *NBER* Working paper 6849, December 1998.

Goncalves, Marcos Fernandes, Fernando Garcia, and Andrea Camara Bandeira. "How does Corruption Hurt Growth? Evidences about the Effects of Corruption on Factors Productivity and Per Capita Income," Mimeo.

Graff, Michael. "Causal Links Between Financial Activity and Economic Growth: Evidence from Two-Wave Model Estimate," Mimeo, Dresden University of Technology, 1999.

Graff, Michael. "Financial Development and Economic Growth – A New Empirical Analysis," *Dresden Discussion Papers in Economics*, 5, 1999.

Graff, Michael, and Alexander Karmann. "Does Financial Activity Cause Economic Growth?" *Dresden Working Papers in Economics*, 2001.

Hakansson, Nils H. "The Role of a Corporate Bond Market in an Economy – and in Avoiding Crises," Mimeo, June 1999.

Hammond, Bray. *Banks and Politics in America: from the Revolution to the Civil War*. Princeton: Princeton University Press, 1957.

Hansson, Pontus, and Lars Junung. "Finance and Economic Growth. The Case of Sweden 1834-1991," *Stockholm School of Economics Working Paper Series*, 176, 1997.

Harrison, Paul, Oren Sussman, and Joseph Zeira. "Finance and Growth: Theory and New Evidence," Mimeo, May 2000.

Haslag, Joseph H., and Jahyeong Koo. "Financial Repression, Financial Development and Economic Growth," Mimeo.

Henry, Peter Blair. "Do Stock Market Liberalizations Cause Investment Booms?" *Journal of Financial Economics*, forthcoming.

Herring, Richard J., and Nathporn Chatusripitak. "The Case of the Missing Market: The Bond Market and Why it Matters for Financial Development," *The Wharton School Financial Institutions Center*, 08, 2001.

International Monetary Fund. *International Capital Markets: Developments, Prospects, and Key Policy Issues*, by a Staff Team led by Donald J. Mathieson and Garry J. Schinasi, September 2000.

Kane, Edward J. "Financial Safety Nets: Reconstructing and Modeling A Policymaking Metaphor," *NBER* Working paper 8224, April 2001.

Khan, Mohsin S., and Abdelhak Senhadji. "Financial Development and Economic Growth: An Overview," *IMF Working Paper*, December 2000.

King, Robert G., and Ross Levine. "Finance, Entrepreneurship, and Growth," *Journal of Monetary Economics*, 32, 1993, pp.513-42.

King, Robert G., and Ross Levine. "Finance and Growth: Schumpeter Might Be Right." *The Quarterly Journal of Economics*, August 1993, pp717-37.

Klein, Michael, and Giovanni Olivei. "Capital Account Liberalization, Financial Depth, and Economic Growth," *NBER* Working paper 7384, October 1999.

La Porta, Rafael, Florencio Lopez-de-Silanes, and Andrei Shleifer. "Corporate Ownership Around the World," *The Journal of Finance*, April 1999.

La Porta, Rafael, Florencio Lopez-de-Silanes, and Andrei Shleifer. "Government Ownership of Banks," *NBER* Working paper 7620, March 2000.

La Porta, Rafael, et al. "Investor Protection and Corporate Governance," *Journal of Financial Economics*, 2000.

La Porta, et al. "Law and Finance," *Journal of Political Economy*, 106, 1998, pp.1113-55.

La Porta, et al. "Legal Determinants of External Finance," *The Journal of Finance*, July 1997, pp.1131-50.

Leahy, Michael, et al. "Contributions of Financial Systems to Growth in OECD Countries," *OECD Economics Department Working Paper*, 280, March 2001.

Laeven, Luc. “Financial Liberalization and Financing Constraints: Evidence from Panel Data on Emerging Economies,” *World Bank Working Paper*, 2000.

Levine, Ross. “Bank-based or Market-based Financial Systems: Which is Better?” *World Bank Working Paper*, December 2000.

Levine, Ross. “Financial Development and Economic Growth: Views and Agenda,” *Journal of Economic Literature*, June 1997, pp.688-726.

Levine, Ross. “International Financial Liberalization and Economic Growth,” *Review of International Economics*, August 2000.

Levine, Ross, Norman Loayza, and Thorsten Beck. “Financial Intermediation and Growth: Causality and Causes,” *Journal of Monetary Economics*, 2000.

Levine, Ross, and David Renelt. “A Sensitivity Analysis of Cross-Country Growth Regressions,” *The American Economic Review*, September 1992, pp.942-63.

Levine, Ross, and Sara Zervos. “Capital Control Liberalization and Stock Market Development,” *World Development*, 26, 1169-83.

Levine, Ross, and Sara Zervos. “Stock Markets, Banks, and Economic Growth,” *The American Economic Review*, June 1998, pp.537-58.

Lucas, Jr., Robert E. “On the Mechanics of Economic Development,” *Journal of Monetary Economics*, 22, 1988, pp.3-42.

Miller, Merton. “Financial Markets and Economic Growth,” *Journal of Applied Corporate Finance*, Fall 1998, pp.8-15.

Organization for Economic Cooperation and Development. “Links Between Policy and Growth: Cross-Country Evidence,” *OECD Economic Outlook*, December 2000, pp.133-54.

Paolera, Gerardo della, and Allan M. Taylor. “Finance and Development in an Emerging Market: Argentina in the Interwar Period,” *NBER* Working paper 6062, June 1997.

Rabelo, Flavio Marcilio, and Luciano Coutinho. “Corporate Governance in Brazil,” Mimeo, April 2001.

Rajan, Raghuram G., and Luigi Zingales. “Financial Dependence and Growth,” *The American Economic Review*, June 1998, pp.559-86.

Rajan, Raghuram G., and Luigi Zingales. “The Great Reversals: The Politics of Financial Development in the 20th Century,” *NBER* Working paper 8178, March 2001.

Ram, Rati. “Financial Development and Economic Growth: Additional Evidence,” *The Journal of Development Studies*, April 1999, pp.164-74.

Rousseau, Peter L., and Paul Wachtel. “Financial Intermediation and Economic Performance: Historical Evidence from Five Industrialized Countries,” *Journal of Money, Credit and Banking*, November 1998, pp.657-78.

Sachs, Jeffrey D., and Andrew M. Warner. "Natural Resource Abundance and Economic Growth," *NBER* Working paper 5398, December 1995.

Stiglitz, Joseph. "Back to Basics: Policies and Strategies for Enhanced Growth and Equity in Post-Crisis East Asia," Mimeo, 1999.

Stulz, Rene M., and Rohan Williamson. "Culture, Openness, and Finance," *NBER* Working paper 8222, April 2001.

Suto, Isao, and John A. James. "Savings and Early Economic Growth in the United States and Japan," *Japan and the World Economy*, 11, 1999, pp.161-83.

Wurgler, Jeffrey. "Financial Markets and the Allocation of Capital," *Journal of Financial Economics*, 58, 2000, 187-214.

Xu, Shenhui. "Financial Development, Investment, and Economic Growth," *Economic Inquiry*, April 2000, pp.331-44.

Select Studies on Finance and Growth

Study	Authors	Time Period	Number of Countries	Conclusions
Financial Determinants of Growth				
"Does Financial Liberalization Spur Growth?," *NBER* Working paper 8245, April 2001.	Geert Bekaert, Campbell R. Harvey, and Christian Lundblad		95	"We show that equity market liberalizations, on average, lead to a one percent increase in annual real economic growth over a five-year period" (Abstract).
"Financial Safety Nets: Reconstructing and Modeling A Policymaking Metaphor," *NBER* Working paper 8224, April 2001.	Edward J. Kane	1990-1995	73	"…differences in the design of financial safety nets correlate significantly with differences in the informational and contracting environments of individual countries and that a country's GDP per capita is correlated with proxies for a country's level of: (1) informational transparency, (2) contract enforcement and deterrent rights, and (3) accountability for safety net officials" (Abstract).
"Banking Market Structure, Financial Dependence and Growth: International Evidence from Industry Data," *The Journal of Finance*, April 2001, pp.617-48.	Nicola Cetorelli and Michele Gambera	1980-1990	41	"This paper provides evidence that bank concentration promotes the growth of those industrial sectors that are more in need of external finance by facilitating credit access to younger firms. However, we also find evidence of a general depressing effect on growth associated with a concentrated banking industry, which impacts all sectors and all firms indiscriminately" (Abstract).
"Financial Development and Economic Growth: The Role of the Stock Markets," *Journal of Money, Credit and Banking*, February 2001, pp.16-41.	Philip Arestis, Panicos Demetriades, and Kul Luintel	1968-1998	5	"Our results support the view that, although both banks and stock markets may be able to promote economic growth, the effects of the former are more powerful. They also suggest that the contribution of stock markets on economic growth may have been exaggerated by studies that utilize cross-country growth regressions" (p.20).
"Capital Structures in Developing Countries," *The Journal of Finance*, February 2001, pp.87-130.	Laurence Booth, Varouj Aivazian, Asli Demirguc-Kunt, and Vojislav Maksimovic	1980-1990	17	"We find that the variables that are relevant for explaining capital structures in the United States and European countries are also relevant in developing countries, despite the profound differences in institutional factors across these developing countries" (p.117).
"Does Financial Activity Cause Economic Growth?," *Dresden Working Papers in Economics*, 2001.	Michael Graff and Alexander Karmann	1980-1990	93	"Empirically…it is shown that during the 1980s finance was predominantly a supply-leading determinant of economic growth. Our analysis suggests, however, that this general finding cannot be confirmed for the less developed countries…" (Abstract).

Select Studies on Finance and Growth

Study	Authors	Time Period	Number of Countries	Conclusions
"The Case of the Missing Market: The Bond Market and Why It Matters for Financial Development," *The Wharton School Financial Institutions Center*, 08, 2001.	Richard J. Herring, and Nathporn Chatusripitak	1996-1997	12	"Our analysis leads us to conclude that the absence of a bond market may render an economy less efficient and significantly more vulnerable to financial crisis" (Abstract).
"Market- vs. Bank-Based Financial Systems: Do Investor Rights Really Matter?," *Federal Reserve Bank of Cleveland*, 01, 2001.	Ozgur Emre Ergungor	1976-1994	49	"This paper makes one important point: legal tradition and prevailing economic conditions jointly determine whether a country is bank- or market-dominated…The data confirm the first two predictions [i.e., Common-law countries provide better investor protection; and creditor protection is of little value in civil-law countries where banks can resolve conflicts without court intervention] but they do not support the claim that shareholder rights play an important role in market development in common-law countries" (pp.43-44).
"Financial Development and Economic Growth: An Overview," *IMF Working Paper*, December 2000.	Mohsin S. Khan and Abdelhak Senhadji	1960-1999	159	"The results in this paper confirm the strong positive and statistically significant relationship between financial depth and growth in the cross-sectional analysis" (p.13).
"Bank-Based or Market-Based Financial Systems: Which is Better?," *World Bank Working Paper*, December 2000.	Ross Levine	1980-1995	48	"The cross-country data strongly support the financial services and law and finance views of financial structure and growth. The data provide no evidence for the bank-based or market based views. Distinguishing countries by financial structure does not help in explaining cross-country differences in long-run economic performance. Distinguishing countries by their overall level of financial development, however, does help in explaining cross-country difference in economic growth. Countries with greater degrees of financial development...enjoy substantially greater economic growth rates" (p.34).
"International Financial Liberalization and Economic Growth," *Review of International Economics*, August 2000.	Ross Levine	1976-1993	47	"Liberalizing restrictions on international portfolio flows tends to enhance stock market liquidity. In turn, improvements in stock market liquidity accelerate economic growth primarily by boosting productivity growth…[Furthermore], allowing greater foreign bank presence tends to enhance the efficiency of the domestic banking system. In turn, better banks spur economic growth primarily by accelerating productivity growth" (Abstract).

Select Studies on Finance and Growth

Study	Authors	Time Period	Number of Countries	Conclusions
"Emerging Equity Markets and Economic Development," *NBER* Working paper 7763, June 2000.	Geert Bekaert, Campbell R. Harvey, and Christian Lundblad	1980-1997	30	"We find across a number of different specifications that financial liberalizations are associated with significant increases in real economic growth" (Abstract).
"Finance and Growth: Theory and New Evidence," Mimeo, May 2000.	Paul Harrison, Oren Sussman, and Joseph Zeira	1982-1994	1	"We find that, indeed, economic growth tends to *decrease* the cost of financial intermediation" (Abstract).
"Financial Development, Investment, and Economic Growth," *Economic Inquiry*, April 2000, pp.331-44.	Shenhui Xu	1960-1993	41	"The results reject the hypothesis that financial development simply follows economic growth and has very little effect on it. Instead, there is strong evidence that financial development is important to growth and that investment is an important channel through which financial development affects growth" (Abstract).
"Government Ownership of Banks," *NBER* Working paper 7620, March 2000.	Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer	1970-1995	92	"First, government ownership of banks is large and pervasive around the world. Second, such ownership is greater in countries with low levels of per capita income, backward financial systems, interventionist and inefficient governments, and poor protection of property rights. Third, higher government ownership of banks in 1970 is associated with slower subsequent financial development. Finally, higher government ownership of banks in 1970 is associated with lower subsequent growth of per capita income, and in particular with lower growth of productivity rather than slower factor accumulation" (Abstract).
"Industry Growth and Capital Allocation: Does Having a Market- or Bank-Based System Matter," Mimeo, March 2001.	Thorsten Beck and Ross Levine	1980-1995	39	"In sum, the results are broadly consistent with the view that distinguishing countries by overall financial development and legal system efficiency is more useful than distinguishing countries by whether they are relatively bank-based or market-based" (p.29).
"Financial Intermediation and Growth: Causality and Causes," *Journal of Monetary Economics*, 2000.	Ross Levine, Norman Loayza, and Thorsten Beck	1960-1995	74	"Using both traditional cross-section, instrumental variable procedures and recent dynamic panel techniques, we find that the exogenous component of financial intermediary development is positively associated with economic growth. Also, the data show that cross-country differences in legal and accounting systems help account for differences in financial development" (Abstract).

Select Studies on Finance and Growth

Study	Authors	Time Period	Number of Countries	Conclusions
"Capital Account Liberalization, Financial Depth, and Economic Growth," *NBER* Working paper 7384, October 1999.	Michael Klein and Giovanni Olivei	1986-1995	93	"Countries with open capital accounts over some or all of this period [1986-1995] had a significantly greater increase in financial depth than countries with continuing capital account restrictions, and they also enjoyed greater economic growth" (Abstract).
"Do Stock Markets Promote Economic Growth?," Mimeo, September 1999.	Randall K. Filer, Jan Hanousek, and Nauro Campos	1985-1997	64	"This paper [uses] Granger-causality tests to provide evidence of a positive and significant causal relationship going from stock market development to economic growth, particularly for less developed countries" (Abstract).
"Financial Development and Economic Growth: Additional Evidence," *The Journal of Development Studies*, April 1999, pp.164-74.	Rati Ram	1960-1989	95	"The estimates reveal a dramatic structural heterogeneity across the subsamples and support the individual-country scenario of there being no significant association between financial development and economic growth in most cases."
"Financial Development and Economic Growth – A New Empirical Analysis," *Dresden Discussion Papers in Economics*, 5, 1999.	Michael Graff	1970-1990	93	"Finance obviously matters for growth…[and] it matters more in less developed countries. Causation runs mainly from financial to real development with only little evidence for mutual causation and no evidence at all for reverse causation. A further conclusion is that finance matters more in countries with higher adult literacy" (p.14).
"Causal Links Between Financial Activity and Economic Growth: Evidence from Two-Wave Model Estimate," Mimeo, Dresden University of Technology, 1999.	Michael Graff	1970-1990	93	"The empirical results presented here indicate that from about 1970-1990 finance obviously mattered for growth…[however], the estimations indicate that the finance-growth nexus is far from being a stable relationship. Specifically, during the second half of the 1970s...financial activity seems to have been detrimental to economic growth" (p.218).
"Savings and Early Economic Growth in the United States and Japan," *Japan and the World Economy*, 11, 1999, pp.161-83.	Isao Suto and John A. James	1800s-1900s	2	"This paper decomposes the observed changes in saving/investment rates [in U.S. and Japan] and shows that substantial components…were due to unexplained shifts in the saving function. In turn we argue that an important factor behind the exogenous shift in savings and hence behind the rise in the net investment rate was the increased degree of financial intermediation in each country" (Abstract).

Select Studies on Finance and Growth

Study	Authors	Time Period	Number of Countries	Conclusions
"Financial Intermediation and Economic Performance: Historical Evidence from Five Industrialized Countries," *Journal of Money, Credit and Banking*, November 1998, pp.657-78.	Peter L. Rousseau and Paul Wachtel	1870-1929	5	"Overall, the study…suggests that real sector activity was a less important determinant of intermediary development during the phase of rapid growth considered here. In particular, the application of recent time series techniques…indicate clearly that financial development was driving, causal force behind the rapid industrial transformations experienced by five leading economies prior to the Great Depression" (p.672).
"Financial Markets and Economic Growth," *Journal of Applied Corporate Finance*, Fall 1998, pp.8-15.	Merton Miller			"Having a wide spectrum of financial markets available keeps a country from having to put all its development eggs in one basket…in particular, from relying too heavily on commercial banking…[which] is a disaster-prone strategy requiring enormous amounts of direct government supervision to reduce the frequency of explosions (and subsequent implosions)" (p.14).
"Stock Markets, Banks, and Economic Growth," *The American Economic Review*, June 1998, pp.537-58.	Ross Levine and Sara Zervos	1976-1993	47	"This paper shows that stock market liquidity and banking development both positively predict growth, capital accumulation, and productivity improvements when entered together in regressions, even after controlling for economic and political factors…This paper also finds that stock market size, volatility, and international integration are not robustly linked with growth, and that none of the financial indicators is closely associated with private savings rates" (Abstract).
"Financial Dependence and Growth," *The American Economic Review*, June 1998, pp.559-86.	Raghuram G. Rajan and Luigi Zingales	1980-1990	43	"Specifically, we ask whether industrial sectors that are relatively more in need of external finance develop disproportionately faster in countries with more developed financial markets. We find this to be true in a large sample of countries over the 1980s. We show this result is unlikely to be driven by omitted variables, outliers, or reverse causality" (Abstract).
"Finance and Development in an Emerging Market: Argentina in the Interwar Period," *NBER* Working paper 6236, October 1997.	Gerardo della Paolera and Alan M. Taylor	1900-1939	7	"Marshaling new evidence both for Argentina in time series, and relative to other countries in cross-section, we have shown the weakness of the financial system between the wars. According to this new view, we have reason to suspect the financial system as one cause of Argentina's relative retardation after 1914" (p.17).
"Does Inflation Harm Economic Growth? Evidence for the OECD," *NBER* Working paper 6062, June 1997.	Javier Andres and Ignacio Hernando	1960-1992	30	"The main findings are the following: 1) the negative correlation among growth and inflation is not explained by the experience of high-inflation economies; 2) the estimated costs of inflation are still significant once country-specific effects are allowed for in the empirical model; and 3) the observed correlation cannot be dismissed on the grounds of reverse causation (from GDP to inflation)" (Abstract).

Select Studies on Finance and Growth

Study	Authors	Time Period	Number of Countries	Conclusions
"Finance and Economic Growth. The Case of Sweden 1834-1991," *Stockholm School of Economics Working Paper Series*, 176, 1997.	Pontus Hansson and Lars Jonung	1834-1991	1	"The financial system appears to have had the largest impact on GDP in the period 1890-1939. These findings are consistent with studies indicating that the role of the financial system in promoting growth was significant during the early stages of economic development, but not among OECD countries during the last 30 years. We do not, however, find any stable relationship between finance and growth for the whole period studied. Our estimates suggest an interaction among the variables studied, rather than any one-way causal relation" (p. 17).
"Finance and Growth: Schumpeter Might be Right," *The Quarterly Journal of Economics*, August 1993, pp.717-37.	Robert G. King and Ross Levine	1960-1989	80	"Various measures of the level of financial development are strongly associated with real per capita GDP growth, the rate of physical capital accumulation, and improvements in the efficiency with which economies employ physical capital. Further, the predetermined component of financial development is robustly correlated with future rate of economic growth, physical capital accumulation, and economic efficiency improvements" (Abstract).
"Finance, Entrepreneurship, and Growth," *Journal of Monetary Economics*, 32, 1993, pp.513-42.	Robert G. King and Ross Levine	1960-1989	80	"Better financial systems improve the probability of successful innovation and thereby accelerate economic growth. Similarly, financial sector distortions reduce the rate of economic growth by reducing the rate of innovation" (Abstract).
"Do Stock Market Liberalizations Cause Investment Booms?," *Journal of Financial Economics*, forthcoming.	Peter Blair Henry	1977-1994	11	"Stock market liberalizations lead private investment booms. In a sample of 11 developing countries that liberalized, 9 experience growth rates of private investment above their non-liberalization median in the first year after liberalizing. In the second and third years after liberalization this number is 10 of 11 and 8 of 11 respectively. The mean growth rate of private investment in the three years immediately following stock market liberalization exceeds the sample mean by 22 percentage points" (Abstract).
"Corporate Finance, Financial Development, and Growth," Mimeo.	Ricardo N. Bebczuk	1965-1994	59	"This paper has examined the relevance of informational asymmetries in the transmission process from financial development to growth. A simple growth model has highlighted the hypothesis that firms with valuable investment opportunities but insufficient internal funds may grow faster should their access to external sources be enhanced...One testable implication of the model was that the proportion of investment financed by new debt is positively related to growth" (p.29).

Select Studies on Finance and Growth

Study	Authors	Time Period	Number of Countries	Conclusions
"Financial Repression, Financial Development and Economic Growth," Mimeo.	Joseph H. Haslag, and Jahyeong Koo	1960-1989	119	"One of the new findings presented here is that we examine the relationship between these financial repression measures and growth, taking into account the state of financial development. We find that inflation is not systematically related to growth. The reserve ratio is systematically related to growth, but not robustly. More precisely, high reserve ratio countries, on average grow more slowly, in the sense of output growth and capital growth, than do low-reserve-ratio countries" (pp.14-15).
Other Related Studies				
"Culture, Openness, and Finance," *NBER* Working paper 8222, April 2001.	Rene M. Stulz and Rohan Williamson		49	"We find that the origin of a country's legal system is more important than its religion and language in explaining shareholder rights. However, a country's principal religion helps predict the cross-sectional variation in creditor rights better than a country's openness to international trade, its language, its income per capita, or the origin of its legal system...[Also] a country's openness to international trade mitigates the influence of religion on creditor rights" (Abstract).
"The Great Reversals: The Politics of Financial Development in the 20th Century," *NBER* Working paper 8178, March 2001.	Raghuram G. Rajan and Luigi Zingales	1913-1999	24	"We show that the development of the financial sector does not change monotonically over time. In particular, we find that by most measures, countries were more financially developed in 1913 than in 1980 and only recently have they surpassed their 1913 levels...We propose an 'interest group' theory of financial development. Incumbents oppose financial development because it breeds competition. The theory predicts that incumbents' opposition will be weaker when an economy allows both cross-border trade and capital flows" (Abstract).
"Corporate Governance in Brazil," Mimeo, April 2001.	Flavio Marcilio Rabelo and Luciano Coutinho	1980s and 1990s	1	"This paper provides clear evidence that there is considerable scope for the expropriation of minority shareholders in Brazil's system of corporate governance. As a result, investors may be less willing to provide equity finance to corporations. It is therefore to be hoped that the improvement of the legal and institutional framework that regulates the relationships of minority shareholders and lenders with controlling shareholders of corporations will foster the development of local capital markets" (pp.3-4).

Select Studies on Finance and Growth

Study	Authors	Time Period	Number of Countries	Conclusions
"Law, Politics, and Finance," Mimeo, February 2001.	Thorsten Beck, Asli Demirguc-Kunt, and Ross Levine	1975-1995	49	"…countries with a British common law tradition tend to protect private property more rigorously, enforce contracts more efficiently, and have better developed financial intermediaries than French civil law countries…The political structure indicators never entered any of the financial development regressions significantly...Thus, the data suggest that differences in legal heritage are important in explaining cross-country differences in the development of financial institutions" (pp.37-38).
"Economic Growth: The Role of Policies and Institutions. Panel Data Evidence from OECD Countries," *OECD Economics Department Working Papers*, 283, 2001.	Andrea Bassanini, Stefano Scarpetta, and Philip Hemmings	1971-1998	21	"…the results confirm the importance fro growth of R&D activity, the macroeconomic environment, trade openness and well developed financial markets. The paper also reports some bivariate correlations between OECD indicators of product regulation and growth. They provide some supporting evidence that the negative impact of stringent regulations and administrative burden on the efficiency of product markets also results in a negative impact on overall economic growth" (Abstract).
"Links Between Policy and Growth: Cross-Country Evidence," *Organization for Economic Cooperation and Development. OECD Economic Outlook*, December 2000, pp.133-54.	OECD	1971-1998	21	"The accumulation of physical capital and human capital is important for growth, and differences across countries in this respect contribute significantly to explain the observed differences in growth patterns. Macroeconomic policy geared toward stable, low inflation and sound public finances contributes to better growth performance" (p.133).
"A Reassessment of the Relationship Between Inequality and Growth," *The American Economic Review*, September 2000, pp.869-87.	Kristin J. Forbes	1966-1995	45	"This paper challenges the current belief that income inequality has a negative relationship with economic growth…Results suggest that in the short and medium term, an increase in a country's level of income inequality has a significant positive relationship with subsequent economic growth. This relationship is highly robust across samples, variable definitions, and model specifications" (Abstract).
"The Regulation of Entry," Mimeo, August 2000.	Simeon Djankov, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer		75	"Countries with heavier regulation of entry have higher corruption and larger unofficial economies, but not better quality of public or private goods. Countries with more democratic and limited governments have fewer entry regulations. The evidence…supports the (grabbing hand) view that entry regulation benefits politicians and bureaucrats" (Abstract).

Select Studies on Finance and Growth

Study	Authors	Time Period	Number of Countries	Conclusions
"Investor Protection and Corporate Governance," *Journal of Financial Economics*, 2000.	Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny			"We describe the differences in laws and the effectiveness of their enforcement across countries, summarize the consequences of these differences, and suggest potential strategies of reform of corporate governance. We argue that the legal approach is a more fruitful way to understand corporate governance and its reform than the conventional distinction between bank-centered and market-centered financial systems" (Abstract).
"Does More Intense Competition Lead to Higher Growth?," Mimeo, June 1999.	Mark Dutz and Aydin Hayri	1986-1995	100+	"Our results indicate that there is a strong correlation between the effectiveness of competition policy and growth…Our analysis suggests that the effect of competition on growth goes beyond that of trade liberalization, institutional quality, and a generally favorable policy environment. However, this link appears to be more tenuous for Far Eastern economies." (pp. 18-19.)
"Corporate Ownership Around the World," *The Journal of Finance*, April 1999.	Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer	1993	27	"We present data on ownership structures of large corporations in 27 wealthy economies, making an effort to identify ultimate controlling shareholders of these firms. We find that, except in economies with very good shareholder protection, relatively few of these firms are widely-held...Rather, these firms are typically controlled by families or the state...The results suggest that the principal agency problem in large corporations around the world is that of restricting expropriation of minority shareholders by the controlling shareholders, rather than that of restricting empire building by professional managers unaccountable to shareholders" (Abstract).
"Law, Finance, and Firm Growth," *The Journal of Finance*, December 1998, pp.2107-37.	Asli Dermirguc-Kunt and Vojislav Maksimovic	1980-1991	30	"We show that in countries whose legal systems score high on an efficiency index, a greater proportion of firms use long-term external financing. An active, though not necessarily large, stock market and a large banking sector are also associated with externally financed firm growth" (Abstract).
"Geography and Economic Development," *NBER* Working paper 6849, December 1998.	John Luke Gallup, Jeffrey D. Sachs, and Andrew D. Mellinger	1950-1995		"We find that location and climate have large effects on income leveles and income growth, through their effects on transport costs, disease burdens, and agricultural productivity, among other channels. Furthermore, geography seems to be a factor in the choice of economic policy itself. When we identify geographical regions that are not conducive to modern economic growth, we find that many of these regions have high population density and rapid population increase" (Abstract).

Select Studies on Finance and Growth

Study	Authors	Time Period	Number of Countries	Conclusions
"Law and Finance," *Journal of Political Economy*, 106, 1998, pp.1113-55.	Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny		49	"The results show that common law countries generally have the best, and French civil law countries the worst, legal protections of investors, with German and Scandinavian civil law countries located in the middle. We also find that concentration of ownership of shares in the largest public companies is negatively related to investor protections, consistent with the hypothesis that small, diversified shareholders are unlikely to be important in countries that fail to protect their rights" (Abstract).
"Legal Determinants of External Finance," *The Journal of Finance*, July 1997, pp. 1131-50.	Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny	1994	49	"Using a sample of 49 countries, we show that countries with poorer investor protections, measured by both the character of legal rules and the quality of law enforcement, have smaller and narrower capital markets. These findings apply to both equity and debt markets" (Abstract).
"Natural Resource Abundance and Economic Growth," *NBER* Working paper 5398, December 1995.	Jeffrey D. Sachs and Andrew M. Warner	1970-1989	97	"In this paper we show that economies with a high ratio of natural resource exports to GDP in 1971 (the base year) tended to have low growth rates during the subsequent period 1971-89. This negative relationship holds true even after controlling for variables found to be important for economic growth, such as initial per capita income, trade policy, government efficiency, investment rates, and other variables" (Abstract).
"A Sensitivity Analysis of Cross-Country Growth Regressions," *The American Economic Review*, September 1992, pp.942-63.	Ross Levine and David Renelt	1960-1989	119	"This paper examines whether the conclusions from existing studies are robust or fragile to small changes in the conditioning information set. We find that almost all results are fragile. We do, however, identify a positive, robust correlation between growth and the share of investment in GDP and between the investment share and the ratio of international trade to GDP" (Abstract).
"How does Corruption Hurt Growth? Evidences About the Effects of Corruption on Factors Productivity and Per Capita Income," Mimeo.	Marcos Fernandes Goncalves, Fernando Garcia, and Andrea Camara Bandeira	1998	81	"The chief conclusion is that corruption negatively affects the wealth of a nation by reducing capital productivity, or its effectiveness" (Abstract).

Finance and Growth: Select Variables in Empirical Studies

Growth rate of real GDP
Level of real GDP
Population growth
Median age
Geographic location
Prevalence of disease
Openness to trade
Eco-political doctrine: capitalism v. socialism
Education
Urban v. rural population density
War-torn
Public v. private ownership
Shareholder rights
Creditor reights
Legal origin: British, French, etc.
Accounting standards
Political corruption
Income distribution inequality
Technological growth
Regulation of entry into market
Tax policies
Religious and culture
Rule of law
Level of trade
Gender: female v. male schooling / labour force
Government size
Competition
Revolutions and Coups
Assassinations
Political stability
Ethnic fractionalization
Bureaucratic efficiency
Government v. private ownership of banks
Insurance availability and accessibility
Stock market capitalization
Long-term private debt to GDP
Total private debt to GDP
Saving rate
Inflation rate
Stock market liquidity
Bank assets
Bank credit
Capital stock growth
Market volatility
Interest rate
Access to entrepreneurial financing
Liquid liabilities
Property rights
Private credit
Productivity growth
Bankruptcy law

FINANCIAL INSTABILITY AND POLICY*

Mr Robert McCauley, Bank for International Settlements

In the world of finance more is not necessarily better. It concerns me that the central thrust to the finance and growth research project just described to you is that more intermediation (or greater financial depth) is unambiguously a good thing in terms of productivity and growth, the things that we economists hold dear.

There is another way of looking at episodes at least of credit growth in economies, however, that owes to Minsky and Kindleberger. One of the key insights to be gained from them is how people do things that in retrospect seem very unwise.

So today I shall highlight the Minsky-Kindleberger view of the world, and of financial instability in particular. Then I am going to talk about some national policies that can address financial instability. These are policies that are s above and beyond the Basel Rules and similar efforts. Then I try to draw some conclusions for you.

We can start off with a quiz. What is your image of where financial instability comes from? Is it a macro phenomenon of inflationary expectations? Is it a matter of asymmetric information, moral hazard, government bail-outs (information economics)? Is it mishandled financial liberalisation? Or should it be understood as part of the internal dynamics of modern financial markets? All these are true in their measure but I submit that the fourth answer is the most profound.

Minsky taught us that credit can go through three cycles. It starts with hedge-financing in which debt obligations are lined up against cash flows that are reasonably secure. As time goes by, risks recede from view and borrowers begin to engage in speculative financing. In speculative financing, access to credit markets is necessary to roll over maturing debt. That is to say, obligations have been made to pay cash that underlying operating cash flows cannot provide and so refinancing is necessary (but not always possible). And then the last stage is Ponzi financing and in that marvellous world cash flows are not sufficient even to meet interest payments. One has to borrow to meet at least some portion of interest payments. So this is a progression from financial stability to instability that Minsky tells us to look for in credit cycles.

Like Milton Friedman, Hyman Minsky believed that deposit insurance and the lender of last resort had seriously mitigated the dangers of financial instability. He also believed that 'Big Government', that is a government that spends 30%–50% of GDP, plays an important role in stabilizing economies, keeping the wheels of commerce spinning even in the face of problems in the private sector.

Now let's turn to to Charles Kindleberger who stood on Minsky's shoulders and saw a 5-stage mania. He tells us to look out for the features that are common in five phases ranging from displacement through euphoria to a moment of distress, some moments of panic and then the crash itself.

Displacement is some deal, some event, that somehow brings to mind a new way of making money. The classic examples are war and a good harvest. But more recently, in the more financial world, the prominent transaction seems to be often the displacement. For the leveraging mania in

* Transcript of speech delivered by Mr Robert McCauley, Deputy Chief Representative, Representative Office for Asia and the Pacific, Bank for International Settlements, at the 2001 APEC Economic Outlook Symposium, held in Hong Kong, China on 28 June 2001. He is solely responsible for the views presented.

the US corporate sector in the late 1980s, it was the Gibson LBO (leveraged buy-out) in the early 1980s that really galvanized financial market participants into seeing that there is a new way of making some very fast money. And in the last cycle in the United States, it was probably the Netscape IPO (initial public offering) in 1995 that was defining transaction that would keep venture capitalists up late at night and many starting new enterprises.

Euphoria then can set in. Its defining feature is that credit expands faster than output. In one long-term view, this is credit deepening, which is a good thing, suggesting increasing financial sophistication. But in a more episodic way this expansion of credit can be a little more dangerous than useful. And typically, assets will then be purchased for resale and not for income. At first, many investors may be skeptical about whether the favoured assets are really worth their market price. Kindleberger reminds us that a mania is a very social process, and that nothing so disturbs the judgment as the sight of a friend getting rich overnight. The participants in the market will find it convenient and profitable in the euphoria stage to leverage themselves up more and more. The process of spending on the basis of these credit flows will typically pump up investment and consumption to varying extents in different episodes. There are typically market interconnections that operate as accelerators that are both domestic, from one financial market to another, and international. Finally, it is a characteristic of a euphoria phase, especially towards its end, that swindles and scandals are revealed.

By way of a brief look at the evidence, if one takes GDP or profits as the underlying income and looks then at the equity prices in the United States, Canada, UK and France, it can be seen that equity prices grew, in part because the profits went up but very largely because the capitalization of any given profit stream went up in the course of the late 1990s. The ratios of private credit to GDP rose across different economies—Australia, Japan, Norway, Sweden the UK and the US—in different times, indicating that the private sector was leveraging up. The period of relatively high ratios signal an episode of pretty serious financial distress. What is financial deepening from one perspective is a precursor to a crisis in another perspective. (My colleagues Claudio Borio and Philip Lowe have done some very interesting work on these warning signals.)

And an important insight in the world of inflation targeting and central banks with credibility is that inflation and its defeat - low inflation or falling inflation- are not necessarily working against euphoria. In fact it can be just the reverse. For one thing, market participants can suffer from money illusion in which the nominal interest rates that are used to discount expected cash flows are reduced with lower inflation, but, at the same time, projections of operating profits do not factor in lower inflation. So you are getting an extra kick in the pricing from a lower discount rate without a parallel dampening of expected earnings growth.

In addition, there is the related but fairly subtle effect of lower interest payments in a world of lower inflation. As inflation falls, the Fisher effect means that corporate interest payments decline and that means that income shifts from the holders of bonds to the recipients of profits. That is, profits increase just from lower interest payments. But those lower interest payments do not reflect lower real interest rates, rather just lower inflation (the so-called Modigliani-Cohn effect). Lower inflation thereby gives a spurious lift to profits growth. And market participants do not distinguish spurious profit growth from underlying profit growth. So there are a number of ways in which lower inflation can actually feed an euphoria rather than keep it from happening in the first instance.

Now, at some point arrives the moment of distress, in which prices may continue to rise but liquidity declines. At the stage of panic, at which point the crowd runs for the door and people try to sell. Assets that had previously been in high demand suddenly experience serious price declines. And in the crash, the structure of credit that supported the higher prices of the favoured assets begins to collapse and bankruptcy starts at the edges of the financial system and moves in a threatening way towards the centre.

The fifth stage is crash. Consider the technology indices in various stock markets. An eighty percent decline is a pretty remarkable crash by historical standards. We have already talked about the implications for Asia with its super exposure to the technology business. Asian hi-tech exports fall slightly after US electronic orders fall. Asia is having the hardest time in the electronics business since 1985 and the worse news is that Asia is a lot more deeply involved in that business now than it was 15–16 years ago.

At the point that the asset prices have collapsed, the run-down in flow of savings that boosted consumption, and also the run down of the flow of corporate savings that was associated with high investment, suddenly begin to look untenable. That is to say, consumers and businesses begin to look at their balance sheets with their asset prices reduced, concluding that these balance sheets need some serious repair work. Net private savings fell in a number of economies, falling to negative in Japan in the later stages of the 1980s, in the UK, in Australia and so on during their respective booms. Then at some point as asset prices fall, the saving rates can jump and as seen in Sweden, they can jump very dramatically. So suddenly the leveraging, the debt that seemed like a good idea as asset prices rose, begins to look hard to sustain and there is a reaction, either on the corporate side, the consumer side, or both.

So, what can be done in the face of this florid phenomenon of manias, panics and crashes? There is a school of thought that says use monetary policy - that is the interest rate weapon - to fight the asset price inflation in the first place or to ward off the deflation in the second instance. I am going to suggest rather that one should look to credit policies, including prudential policies, as a way to deal with this financial excess.

There are schools within this argument on monetary policy and asset inflation. Some suggest ignoring asset prices, except insofar as they boost business spending and consumer spending and thereby affect aggregate demand. So in short, stick with your Taylor rule, and ignore those asset prices except insofar as they work their way into the variables on which that decision rule depends, namely the output gap or inflation. There is a more eclectic school that says sometimes you might have to take your eye off the inflation ball. Maybe you have a little room in your inflation target range that allows you to do that and to tweak interest rates, where it is really hard to argue you the interest rate move is intended to do anything other than stabilize asset prices. One of the problems with the conventional view that asset prices should be ignored except insofar as they affect inflation and the output gap is is that they may imply no reaction to asset prices on their way up. But then it is going to be hard on the way down not to react as consumers and businesses retrench and spending falls. It is going to be hard not to look like you are reacting to asset prices on the way down as you cut interest rates in order to try to stave off a recession. So then it can appear, at least, that the monetary authority is more sensitive to asset price declines than asset price rises and this perception can be dangerous.

I would propose instead that there are various things one might do in the way of credit policies. For one thing, a fairly easy approach is to try to publicize concentrations of credit to the inflated assets. Another approach is to regulate the terms of credit. A third approach is to change capital requirements. The Basel Accord sets only minima, not maxima. So one could raise capital requirements overall or raise them against specific assets. One could even imagine, and it has been done, that you could impose that old- fashioned reserve requirement against credit growth.

Disclosure, is a policy based on the view that ‘sunshine is the best disinfectant’. Disclosure allows people in the market to see concentrations. So for instance if you find that your banks are suddenly engaging in venture capital operations and making a lot of money on that, you might well ensure that your accounting requirements force the banks to disclose fully how much of their profits are coming from that source. So that if there are market participants who do not think that venture capital earnings are a stable source of earnings for a bank or a technology firm, they can

amend their view of the quality of earnings appropriately and discount the share price and thereby signal to management that maybe that is not the best way to go.

Sometimes though the definition of the assets can be tricky. For instance in standard banking supervision, loans are categorized by industry, say the oil industry or the airline industry. But in this case, a common risk arises from the *process* of venture capital (or in the 1980s the *process* of leveraged buyouts), without respect to whether the venture capital is in software or hardware or vapourware (or whether the underlying assets being leveraged are supermarkets or airlines). So disclosure is one approach.

Another approach is to regulate the terms of credit. Classic examples are more demanding margin requirements in stock lending, longer security "haircuts" in the repo market, lower maximum loan-to-value ratios in real estate, and higher minimum down payments for a new car. All of these terms have been moved around by policy in the past. Those are all "stock" policies. There are also "flow" policies. For instance, mortgage payments can be limited to no more than X percent of household income and X can be changed in view of house price developments and associated risk..

Are such measures effective? Won't credit only flow through some other channel? I submit for your consideration the case of Hong Kong, China—without any independent interest rate policy here, perhaps the authorities have been more inventive with respect to credit policies. The prices of expensive residences, that is ones of over 100 square metres in Hong Kong, China, and the Hang Seng Index were quite closely correlated over the 1990s. Hong Kong, China enters the 1990s, apparently, with traditional loan-to-value ratios as high as 90%. That is, if you are paying 100 for the apartment you can borrow 90. Through some combination of the intervention of the authorities and the banks' self-regulation, is that the maximum permitted loan-to-value ratios were ratcheted down as apartment prices rose, to 70% and even 60%, with the last move being made in the early months of 1997.

It is often asked how anybody can recognize a bubble or asset price inflation or something unsustainable. After all, many smart market participants playing with their own money are coming to a collective conclusion: how can one second-guess them? That is a hard question but recall the case of Hong Kong where for several years before the peak in asset prices there were efforts to restrain how much credit could flow into each $100 worth of apartment. If Hong Kong, China had experienced housing prices falling 50%, with an immediate back-drop of loan- to-value ratio of 90% (or as it was effectively in Tokyo 105% or 110%, allowing enough borrowing to buy the furniture and do a renovation as well), the economy of Hong Kong, China would be in far worse shape than it is today.

One can also regulate the terms of credit through attaching a higher risk weight to the particular assets that are the object of speculation. For instance, there was a proposal to attach 100% capital weight to venture capital investments in the United States a year or so ago, which would amount to subtracting from capital the banks' holdings of venture capital. Alternatively, the overall capital ratio could be raised across the system. These are, again, not things that need to be agreed on internationally, they can be done in one economy.

So let me draw my conclusions – somewhat glum perhaps. The record is clear that financial instability is to be expected. It is not a one-off result of liberalization or allowing capital inflows. These developments can aggravate financial instability but a sober assessment of financial history suggests that financial instability is here to stay. The balance sheet rebuilding that takes place after the financial bust can hurt growth very much. You can ask that monetary policy be assigned to stop the asset inflation or to mitigate the asset deflation. I would suggest, however, that there are other policies that one should think of seriously. And it is not beyond our wisdom to recognize the euphoria that can set the stage for financial instability. Perhaps one can be too ambitious here.

Did the reduction of the maximum loan-to-value ratios in Hong Kong, China actually keep residential prices from going to astronomical levels? The answer is clearly, no. But what is remarkable to my mind is that you had a 50% decline in asset prices and Hong Kong, China's banks are still standing. That is quite an achievement.

So you need not stop the asset inflation to keep it from wrecking your financial system on the way down. And if you can manage that I think you have managed a great deal.

INSIDE THE BLACK BOX: HOW DO FINANCIAL INSTITUTIONS CONTRIBUTE TO GROWTH

Professor John Chant, Department of Economics,
Simon Fraser University, Canada

My topic is the ways in which financial institutions contribute to economic growth. Covering this topic involves two tasks: i) determining what financial institutions do and ii) showing which the activities of financial institutions are important for economic growth. In doing this, I will draw on two important developments in the literature on financial institutions. The first of these, which I emphasize, consists of the remarkable increase in economists' understanding of the role of financial institutions in the economy. Much of this analysis is recent and reflects substantial advances in the economic analysis of financial institutions over the past twenty years. The other development, one that has been largely independent of the first, is the empirical analysis of the impact of the financial system on economic growth. Interestingly, these two paths to understanding the contribution of financial institutions to growth have converged to form what appears to be a consensus on their functions and their contribution to growth.

I. THE FUNCTIONS OF FINANCIAL INSTITUTIONS

Financial institutions do many things. Financial institutions may differ in what they do from institution to institution, both within a financial system and also across different financial systems. Nevertheless, despite these differences, financial institutions are invariably prominent features of countries' financial systems.

In approaching how financial institutions contribute to growth, it is important to understand their functions. It is also important to understand whether there is a close correspondence between functions and the form of financial institutions on a consistent basis.

The Functional Approach to the Financial System

As a first step to understanding what financial institutions do and how they may contribute to development, we need to examine the functions of financial systems overall. To do this, we adopt the functional view of the financial system developed by Bodie, Crane and Merton (BC&M) of the Global Financial System Project at Harvard Business School as a guide to the understanding of the role of financial institutions in the economy.

C&B identify six core needs that a financial system meets in a developed economy:

- methods of making payments in order to facilitate the exchange of goods and services;
- mechanisms for pooling resources to fund large-scale enterprises;
- ways to transfer economic resources over time and across distances, as in lending and investment;
- methods of managing risks, such a insuring, diversifying and hedging;
- price information, such as interest rates and securities prices, to help coordinate decentralized decision making in various sectors of the economy;
- ways to handle incentive problems that interfere with efficient business transactions.[1]

These functions are the building blocks of financial products and services. Different products and services perform these functions in different combinations and to different degrees. For example, the features of checkable savings deposits in my country can be compared with money market

[1] See Crane and Bodie (1996), p. 110 and Merton and Bodie (1995), p. 5.

mutual funds. Checkable savings deposits provide their holders with a method for carrying out payments; they allow the resources of many investors to be pooled into a larger mass of funds, they facilitate the transferring of economic resources over time and space, and they provide their holders with risk management through providing them with a fixed-value claim. This fixed-value claim is issued against the financial institution's portfolio of assets even though its value may be uncertain and vary over time. Thus, risk management takes place in part through a shifting of risk from customers to the financial institution itself. Money market mutual funds, on the other hand, perform some, but not all, of the same functions. They do not in Canada, at least, provide a method of making payments and they facilitate the transfer of resources over time and space and allow the pooling of resources of many investors. Like savings deposits, they limit the risk faced by their holders by providing a fixed-value claim. Unlike savings deposits, they do this through some diversification and through holding a portfolio of assets with relatively stable values.

Some of this will change now that our government has approved legislation to allow mutual funds to offer checking services. Thus, the term "money market fund" will represent a different bundle of services that will bring it closer to a checking deposit when its functions are taken into account.

Function and Financial Institutions

The BC&M approach can also be applied to financial institutions. Here it differs in its emphasis from the typical economic analysis of financial institutions. Rather than taking existing institutions as a given, it treats them as performing a bundle of underlying functions of the financial system and seeks to explain the forms of organization that are used to satisfy these functions in different times and circumstances.[2] In other words, the functions take precedence over institutions rather than the other way around.

Thus, a major contribution of the functional approach lies not in just identifying the functions, but in offering insights with respect to changes in the financial sector over time and comparisons across financial systems at a point in time. The set of functions to be performed by the financial sector is common to all economies, though the importance of each may differ depending on the economy's needs. Yet despite this similarity in the need for the functions to be performed, the ways in which they are performed can differ greatly over time and across places. A central point of their work for our purpose is their observation:

> as functions are performed more efficiently, institutions adapt to the changes. *Institutional form follows function*[3].

Differences in function need not explain the observed differences between institutions and structures in different financial systems. They may also depend on factors such as traditional practice, regulations, and the level of technology.

In summary, the BC&M analysis has a number of implications for analysing the contribution of financial institutions to growth. First, financial institutions can be considered as an aggregation of different financial functions. These different functions can be combined in different ways and to differing degrees in institutions identified as financial institutions or even as narrowly defined as banks. Institutions that outwardly seem different may in fact be similar. Second, recognition of the differences among institutions also suggests that differences in financial institutions across countries also mean that they will not necessarily contribute to growth in the same way and to the same degree.

---

[2] In addition, the same institutional form may serve quite different functions in different circumstances. The role of banks in the finance of industry differs substantially between Germany, on the one hand, and Canada and the US, on the other.

[3] Pp. 110-11.

We also suggest one further implication of the analysis not developed by BC&M; indeed it may be that it appears inconsistent with their spirit. It is that seemingly similar financial arrangements may not perform the same functions. In other words, the identification of a type of institution with a set of functions on the basis of similar institutions may be unwarranted.. This might happen when the same institution exists in two circumstances with quite different supporting infrastructures. The differences between the infrastructures may be sufficient to allow the financial institutions in one circumstance to fulfil functions that cannot be performed by the other. Thus, there may be a need to move beyond the form to determine how a particular institutional financial arrangement works under a specific set of circumstances.

II. NEW APPROACHES TO FINANCIAL INSTITUTIONS

Information and economic analysis

Economists' understanding of the contribution of financial institutions to growth builds on a revolution that has been going on economic analysis. Economists have long recognized that the frictionless, perfect information economy that underlay much of their analysis come nowhere near to approximating the economy. From the 1970s onward, economists have increasingly integrated the costs of transactions, the costs of gaining information and the costs of enforcing contracts into their analysis. Economists now recognize that economic transactions will often be characterized by differences in the information available to the different parties to a transaction because they each will be unable to or find it too expensive to gain the degree of information possessed by the other. These differences are likely to shape the outcome of the transaction and may lead to the development of institutions that facilitate transacting through minimizing the consequences of possible differences in information.

The information revolution has raised consciousness of the importance of principal-agent problems. Principals are individuals that engage other individuals–agents–to carry out specified activities on their behalf. In the presence of full information, the principal can monitor and supervise the agent's actions without cost. While there may be differences between the interests of the two, the principals under these conditions can assure that agents will operate in their behalf. Less than complete information drives a wedge between the interests of the principal and the actions of the agents. Principals can no longer be assured that agents always act on their behalf. The principal-agent problem becomes one of designing mechanisms that direct agents' efforts to act to further their principals' interests. In the financial sector, this means the development of mechanisms to make the actions of ultimate borrowers conform to the interests of ultimate lenders.

Information and financial institutions

There are few areas of economics where these developments have had, and will continue to have, a greater impact than in the study of financial institutions. Increasingly economists are realizing that banking is an information industry. The very existence of financial institutions arises from the costliness of acquiring information. At one level, borrowers have superior information in some, but not all, dimensions over financial institutions and other potential lenders. In turn, financial institutions have superior information about their condition than both the depositors supplying them with funds and the regulators charged to represent the depositors' interests.

The major contribution by Diamond characterizes financial institutions as being "delegated monitors" [4]This term describes the way in which financial institutions in effect supervise portfolios of loans and other assets on behalf of their depositors. The theory of delegated

[4] Diamond (1983) was the pathbreaking work. See also Chant (1987) and (1992).

monitoring explains well why lending is carried on collectively on behalf of many ultimate suppliers of credit. Ultimate lenders acting individually would duplicate each other's efforts in assessing the prospects and creditworthiness of the borrowers, assembling and negotiating the contracts that governs their loans, and monitoring and supervising borrowers once loans have been made to assure repayment. The collective use of a financial institution avoids the problem of duplication of effort with respect to lending activity. They serve as agents on behalf of their customers by monitoring portfolios of loans.

The Diamond analysis of financial institutions can be considered a practical application of principal-agent analysis with costly information where these institutions are viewed as a mechanism for solving principal-agent problems between the ultimate lenders and borrowers. Just as we now understand that financial institutions are mechanisms through which different parties in the economy can overcome limited availability of information, we also understand, as we will see more fully below, that financial institutions are themselves limited in their effectiveness by the availability of information. A threshold level of information may be needed for them to perform.

The new approach also deals with a fundamental issue in the understanding of the workings of financial system: understanding the presence of financial institutions in these systems. As my colleagues and I have put it in our undergraduate money and banking text:

> Perhaps the most distinctive feature of financial markets is the presence of a group of institutions called financial intermediaries – institutions like banks, credit unions, and trust companies. These institutions are simultaneously engaged on both sides of the market: they borrow and they lend.... The first question is this: why do they exist? Much borrowing and lending occurs in financial markets between ultimate borrowers and lenders, without the benefit of financial intermediaries in this sense...Financial intermediation absorbs scarce resources, and in that sense is costly. *Why do not all borrowers and lenders bypass intermediaries and deal directly*.[5]

Delegated monitoring by itself does not explain why some lending and borrowing takes place through the use of direct markets and some through the use of financial institutions. These differences reflect differences in the availability of information about the borrower. As Merton suggests, investors are best able to by pass intermediaries and lend through direct markets "when products have standardized terms, can serve a large number of customers, and are well-enough 'understood' for transactors to be comfortable in assessing their prices."[6] Enterprises that borrow through direct markets are those that have the ability to generate credible information about their performance and prospects. In contrast, he suggests "...banks are specialists in making loans that are difficult to assess without detailed and proprietary, information about the borrower."[7]

Even if it were feasible for an enterprise to make credible information about its activities publicly available, Merton suggests it may choose not to do so. It may prefer using an intermediary because

[5] See Shearer, Chant and Bond, p. 263. Emphasis added.
[6] See Merton. p. 22.
[7] Merton, p. 13.

> for competitive reasons borrowers are reluctant to reveal to the general public the information which would be necessary for direct placement of the debt. By being discreet with information provided by its borrowers and by developing a reputation for making profitable loans with its investors, banks help solve this asymmetric information problem[8]

Thus, the use of an intermediary for obtaining finance may still be preferred by enterprises that could provide the information needed for raising funds on direct markets.

Rajan added to this explanation of financial intermediaries stressing the role of contract incompleteness. Such incompleteness can arise from a number of sources. External incompleteness occurs when it is too costly to use the legal system to verify and enforce the outcome. Intrinsic incompleteness arises because it may be "very hard for the lender and borrower to contract on eventualities because they are too hard to describe and visualize in requisite detail."[9] Rajan also suggests that contracts may be left incomplete deliberately where worst outcomes may be avoided by not writing out in all possible detail and are left incomplete.

Rajan suggests that the use of financial intermediaries may be an efficient means for dealing with incomplete contracts. The use of direct markets depends on the ability of the parties on each side of the transaction to be assured that the terms of the transaction can be fulfilled. This can be assured only if the contract is complete over all contingencies. In any circumstance not provided for in the contract, a borrower through direct markets would have to negotiate and bargain with numerous suppliers of funds. In contrast, borrowing from an intermediary reduces the dimensions of the bargaining by it confining to just the borrower and the intermediary.

To sum up, these approaches to explaining financial intermediation complement each other and support the same conclusions. Those enterprises whose businesses are well understood and which can make public credible information about their performance and prospects will be most able to turn to public markets to obtain funding. Financial intermediaries provide an effective alternative for other enterprises. The advantage of the financial institution lies in the avoidance of duplication of efforts in assessment, monitoring and supervision; their ability to preserve the value of proprietary information and their efficiency in dealing with the costs of incomplete contracting.

III. THE CONTRIBUTION OF FINANCIAL INSTITUTIONS TO GROWTH

Financial institutions can and do perform to some degree all the financial market functions identified by BC&M. Rather than attempt to explain how financial institutions can perform these functions and how the effective performance of each can contribute to economic development, we concentrate attention on a few key functions most closely related to the new economic approaches to financial intermediaries. In doing this, we distinguish between those functions that financial institutions perform through their role as an "intermediary" through transferring funds between ultimate lenders and ultimate borrowers and a function that is less related to intermediation, the payments function.

Intermediation and Growth

The first function of financial institutions that we will consider relates to the intermediation role of financial institutions through which they collect funds from the so-called ultimate lenders and transfer these funds to the ultimate borrowers. The intermediary functions, in effect, place financial institutions as a conduit between borrowers and lenders. Despite this common intermediary activity, different financial institutions perform this function in different ways and to different degrees. The BC&M treatment of financial market functions provides a framework for

[8] Merton, p. 12.
[9] See Rajan, p.533.

examining the diverse contributions that financial institutions can make through their intermediary activities. In our analysis, we focus on the handling of incentive problems because we believe that the performance of this function distinguishes effective financial sectors from others. This function is intimately related to the efficiency with which an economy uses its investible resources.

Handling Incentive Problems

A key lesson from the new approach to financial institutions is that the role of intermediaries is not just confined to the selection of projects to finance. It is likely the handling of incentive problems where financial institutions make their greatest contribution to economic growth. In a sense, this activity can be characterized as the active management of finance. The traditional view characterizes financial institutions as passive investors that accept the risks and returns offered by the market. Active investment management means that financial institutions shape the returns and risks that they face by monitoring, supervising and enforcing the enterprises that they finance.[10]

This difference can be brought out more clearly by comparing active managing with the perspective of the so-called "portfolio management" approach. Portfolio management in these earlier approaches consisted of financial institutions responding passively to external risks over which the institution had no control. Rather the institution constructed its portfolio with assets in a way to reflect its preferences for risk relative to return. The new approach, in contrast, treats the risks of different choices as being shaped by institutions' efforts to control their outcomes. For example, a loan under the portfolio approach would be treated as an asset with an expected return of 15% with a variance of that return of 22. In contrast, the asymmetric approach would view both the risk and return as shaped by the effort devoted by the lender to assessing, monitoring and enforcing the loan. With a high level of screening and supervision this loan might have an expected return of 20% with a variance of just 12% risk-return. Whereas the portfolio approach emphasizes choices among assets, the asymmetric information approach emphasizes mechanisms for managing risk as being an integral part of portfolio management.

Thus, handling of incentive problems is distinctly different from the managing of risks. The managing of risks refers to techniques by which financial institutions and their customers can reduce their overall level of risk in face of the risks presented by the market. Managing risks, as distinct from handling incentive problems, involves accepting the risks and returns provided by the market and then combining and offsetting them through diversification, hedging and insurance in ways to make the risks of an overall portfolio less than the sum of its components.

Intermediation and Information

The development of a country's financial institutions is only one determinant of their contribution to economic growth. Effective dealing with incentive problems increases the productivity with which a country's investible resources are used. In absence of successful handling of incentives, productive investment opportunities may be foregone because their returns without monitoring and supervision will fall short of those of other projects that may be easier to manage and supervise. Improvements in the system of monitoring and supervision can make the return of these projects net of the costs of monitoring and supervision higher than others.

The supporting conditions needed for financial institutions to handle incentive problems successfully are substantial. Financial institutions must operate in a framework themselves that encourages them to invest the resources into monitoring and supervision. Such a framework must

[10] Monitoring is directed to assuring that funds are used for their intended purposes, supervising is directed to assuring that they are used effectively and enforcement is directed to assuring that they are repaid according to schedule.

encourage financial institutions to forego non-arm's length lending to associated enterprise and to lend instead to productive enterprises.

Just as important is the framework within which enterprises requiring finance themselves operate. Financial institutions must be able to gain reliable information to be able to assess the current condition and prospects of the borrower. Some of this can be done in absence of a formal disclosure system. Lenders can monitor inventories, cash flow and sales in absence as a condition of a loan in absence of legal accounting requirements. But to handle incentive problems effectively, financial institutions may need more information than this. Part of the infrastructure that they need may be a system by which enterprises divulge information about their condition on a periodic and consistent basis.

The relation between the state of information and contribution of financial institutions to economic growth is not simple. Financial institutions cannot operate and perform their functions with very low levels of information. At low levels of information, the public may not have sufficient confidence in financial institutions to entrust their funds to them and financial institutions themselves will have insufficient information for them to effectively screen, monitor and supervise potential borrowers. As the availability of information increases, more savers will entrust their funds to financial institutions and the institutions themselves will be able to assess a larger fraction of potential borrowers. At first only those borrowers whose likelihood of success is most apparent or those whose collateral is most valuable to lenders will obtain credit. Because of costs of information, some productive projects will fail to gain finance while other less productive projects that are more transparent to assess will gain funding. Further improvements in information will improve the allocation of funding as some previously unfunded highly productive projects gain funding as they become more transparent.

Eventually improvements in information may have a diminishing impact of the contribution of financial institutions to growth. Indeed, as we have seen, when information improves beyond some threshold, some enterprises will become sufficiently transparent savers that they can bypass the use of financial institutions and turn directly to the savers to gain their funding, a phase sometimes described as disintermediation. In some instances, the financial institutions may themselves be participants supporting this process. The recent growth of securitization in the US involves financial institutions in the origination of credit but not in its ultimate funding. The success of securitization depends in large measure on sufficient information being available to the ultimate funders so that they can judge the quality of the claims that they acquire from financial institutions. In other cases, the increased use of direct markets may completely by pass financial institutions. As this stage progresses, financial institutions may even shrink relative to other parts of the financial system. Such shrinkage should not be interpreted as a retrogressive step in financial development. Rather the institutional development has taken place in that financial institutions whose role depends on dealing with imperfect information have been displaced by other lower cost technologies made possible by improvements in the availability of information.

Still, once financial institutions gain information about the condition of a borrower, they must be able to act on that information. Action can range from efforts to alter the behavior of the borrower on initial signs of problems to foreclosing and seizing collateral when it is clear that a project is unproductive and will not lead to repayment. While the use of demand loans provide a mechanism by which financial institutions can pressure the actions of borrowers, a demand for repayment has little impact unless a legal framework that allows enforcement at a low cost supports it.

Evidence on the Contribution of Intermediaries

This emphasis on the informational role of financial institutions suggests that their contribution to growth will be different that than expected from earlier approaches. Much emphasis has been placed in the past on the contributions of financial institutions to growth through stimulating

saving and investment by serving as a conduit between lenders and borrowers. In contrast, more recent approaches we have examined emphasize more the role of financial institutions as managers inherently involved in assessing, monitoring, supervising and enforcing. These approaches suggest that financial institutions serve to ensure an economy's investible resources, whatever the level, are directed toward their most productive uses so that at least part of their contribution to economic growth comes through improving the allocation of investible resources rather than increasing their quantity.

The developments in the theory of financial institutions have recently been paralleled by an unprecedented level of empirical work on financial intermediation made possible in part by the assembly of large cross country data sets. The early work in this area has been increased our knowledge of the conditions that favor the development of a stable financial sector.[11] More recently attention has turned to assessing the contribution of the financial sector to economic growth. Interestingly, results from this work offer support for the new approaches to the theory of financial intermediation.

In recent work, Beck, Levine and Loayza (BLL) have examined the view that the legal and informational infrastructure matters for the effectiveness of intermediation. With respect to legal infrastrucure, they find that countries that give high priority to creditors receiving the full value of their claims on corporations, that support contract enforcement and that effectively impose compliance with laws tend to have better functioning financial intermediaries than countries that do not, whereas with informational infrastructure, the publishing of relatively comprehensive and accurate financial statements also leads to better developed intermediaries. [12]

The same authors also deal directly with the ways in which effective financial intermediation supports economic development and conclude:

> We find an economically large and statistically significant relation between financial intermediary development and both real per capita GDP growth and total factor productivity growth…the results, however, indicate an ambiguous relation between financial intermediary development and both physical capital accumulation and private savings rates.
>
> The paper's results support the view that better functioning financial intermediaries improve resources allocation and accelerate total factor productivity growth with positive repercussions for long-run economic growth (2000a, 295-96).

Overall, these results offer support for the new approaches to financial intermediation that imply that financial institutions improve the efficiency with which investible resources are used.

The Payments Function and Growth

Less attention has been directed toward the payments functions of financial intermediaries and its implication for economic growth, probably with justification. Even the earliest literature about financial institutions and growth emphasized the intermediary function, an emphasis that has now turned out to be productive. Nevertheless, other functions of financial institutions may now warrant investigation as possible contributors to economic growth.

The payments systems operated through financial institutions can be either paper-based cheque systems, electronic payments systems, or, as in most industrialized countries, a combination of the two. Unlike other functions of financial systems, the payment system requires the cooperation and

[11] See the work of Barth, Caprio and their associates.
[12] See Beck, Levine and Loayza (2000b).

collaboration of financial institutions that offer payment services to their customers. Such a system requires some form of clearing by which financial institutions exchange claims on each other arising from their customers' transactions. It also requires a settlement system by which institutions can compensate each other for imbalances of claims arising from the clearing of transactions.

Payments systems could contribute to the development of an economy in several ways. Most visible is the facilitating of retail payments of households and small businesses. While these transactions are by far the most numerous in industrialized countries, they account for only a minor fraction of the value of transactions. These retail payments services of financial institutions benefit the economy by saving the costs associated with currency transactions including the need for the buyer and seller to meet face-to-face and the costs of security for protecting currency.

More important in terms of value are the payments arising from financial transactions on securities markets and large inter-corporate transactions such as takeovers. An effective payments system contributes to efficiency in the operation of financial markets. Without a dependable payments system, investors in financial markets would have to wait until they have received payments resulting from sales until they could initiate purchases. The presence of settlement delays in the payments system can be expected to slow the development of securities markets in an economy.

An efficient payments system could be expected alter the structure of industry by allowing for greater horizontal integration at the same time as reducing the need for vertical integration. It would be very difficult, for example, to establish a nation-wide retail chain without a developed payments system. Such a chain requires at times payments from the center for rent and wages and remittances to the center to pay suppliers. Though such arrangements may be possible with an inefficient payments system, they will be more costly and less certain, limiting the possibilities for such horizontal integration.

It may seem paradoxical but an efficient payments system could also increase the scope for specialization in supply chains. An inefficient payment system favors vertically integrated enterprises because this from of organization requires fewer payments between enterprises. An efficient payments system reduces the benefits from vertical integration in production by increasing the feasibility for and reducing the costs of transactions between enterprises. By doing do, it increases the scope for enterprises to specialize in vertical supply chains.

The payments function will require different supporting infrastructure than other functions. Financial institutions in their lending transactions will have collateral needs that support their ability to establish default and gain title over and the power to dispose of real assets to cover shortfalls of repayments. In contrast, the payments function requires institutional arrangements that effectively support claims that financial institutions that participate in the payments system accumulate on each other. The nature of the payments transactions means that the framework must support the settlement of large transactions in short periods of time. Collateral arrangements in such a framework must provide substantial amounts of liquidity that can be transferred quickly to other parties without dispute or legal entanglements.

Even though financial institutions may take a similar form across countries and in fact have similar sizes relative to GDP, their role in the payments system may vary considerably. For example, comparisons of Great Britain with Japan suggest their financial institution sector are quite comparable in many dimensions: bank assets and claims of banks on the private sector are respectively 1.31 and 1.17 of GDP in Japan and 1.16 and 1.14 of GDP in Great Britain.[13] On the other hand, the payments activities of financial intermediaries differ markedly between the two countries. The Japanese hold almost 3.5 times as much currency relative to GDP. In addition, they are served by twice as many cash dispensers per capita, use them one-fifth as frequently and make transactions that are almost three times as large as those of the British.[14] Such substantial differences in payments practices offer a testing ground for examining the contribution of payments systems to economic growth.

Conclusions

Does it matter how financial institutions contribute to economic growth as long as they do? Increasingly, evidence is mounting that developed financial institutions do contribute to growth. One answer to this question may be that it does not matter how financial institutions contribute to growth because any measures or policies that support their development will contribute to this growth. Such an answer would be misleading for several reasons.

Financial institutions are not identical black boxes. The presence of financial institutions or their scale does not by itself indicate which functions they fulfil and how well they perform them. Recent research has done much to demonstrate that financial institutions contribute to economic growth and that their contributions depends very much on the presence of a favourable environment. This recognition of differences between the black boxes emphasizes the importance of research that examines differences among seemingly similar financial institutions. Still, there is more that can be done. Among the questions to be considered are the following: Does the performance of payments functions by financial institutions matter? If it does, what are the preconditions for an effective payments system? To what extent are financial institutions in a country active as distinct from passive managers of investments?[15] Once the functions are broken out from the black box, questions about the types of infrastructure needed to support the different functions need to be considered. Moreover, with the general lines of the contribution to growth clearer, it may now be time to return to the use of case studies. We now know the development of intermediaries themselves may not be sufficient for growth.

Looking inside the black box also has served to reinforce the importance of information for the effective operation of the financial sector. While financial institutions can be viewed as agents that allow ultimate savers and investors to overcome the constraints of inadequate or expensive information, they do not dispense with the need for information. In many of their functions,

[13] Demirguc-Kunt and Levine (1999), Table 1.
[14] BIS, pp. 111-20.
[15] This question goes beyond the involvement of Japanese and German banks in major industrial enterprises to the role of banks in supporting enterprises in general through monitoring, supervising and enforcement with respect to finance.

financial institutions should be viewed as specialized accumulators and assessors of information. Development of financial institutions themselves may be an important step toward economic development. But to be most effective, or even to be effective, they will need the infrastructure to keep pace with their development.

These observations about the need for infrastructure may be discouraging in that the creation of the elements of an accounting and legal infrastructure is difficult and takes time. Are there no ways to speed up the process? It might seem tempting to replace the information link between depositors and other suppliers of funds by some form of guarantee. While such a guarantee would enhance the flow of funds to financial institutions, it may be counterproductive and actually reduce the contribution of the financial sector to growth. Faced with increased availability of funding, financial institutions may find they have more funds than they can use productively. Indeed, holding government securities – what in other times may appear to be unproductive – may be the best alternative available to the banks. In attempting to channel the funds to other uses, banks may end up funding projects that are less productive.

References

Bank for International Settlements, Committee on Payment and Settlement Systems, *Statistics for the Payments Systems of the Group of Ten Countries, figures for 1999.*

Barth, J., G. Caprio and R. Levine, "Banking Systems Around the Globe: Do Regulation and Ownership Affect Performance and Stability? Paper presented to NBER Conference on Prudential Supervision: What Works and What Doesn't, January 13-15, 2000.

Barth, J., G. Caprio and R. Levine, "Financial Regulation and Performance; Cross Country Evidence, *World Bank Policy Research Working Paper 2037.*

Barth, J., D. Nolle and T.N. Rice, "Commercial Banking Structure, Regulation, and Performance: An International Comparison," in D. Papadimmitriou, ed. Modernizing Financial Systems (New York: Macmillan Press and St. Martin's Press, 2000), pp. 119-251.

Beck, T., R. Levine and N. Loayza, "Finance and the Sources of Growth," *Journal of Financial Economics* October, 58 91-2), 2000, 261-300.

_____, "Financial Intermediation and Growth: Causality and Causes," *journal of monetary Economics*, August, 46, 2000, pp. 31-77.

J. Chant, *Regulation of Financial Institutions - Functional Analysis*, Bank of Canada Technical Report no. 45, 1987

__, "The New Theory of Financial Intermediation" in K. Dowd and M. Lewis, *Current Issues in Monetary and Financial Economics* (London: Macmillan, 1992), pp. 42-65

D.B. Crane et. al., *The Global Financial System: A Functional Perspective* (Boston: Harvard University Press, 1995).

D.B. Crane and Zvi Bodie, "Form Follows Function: The Transformation of Banking," *Harvard Business Review* (March - April 1996), pp. 109 -17.

D. Diamond, "Financial intermediation and delegated monitoring," *Review of Economic Studies* (1984), pp. 393-414.

R. Merton, "Operation and Regulation in Financial Intermediation: A Functional Perspective", p.22.

R. Merton and Z. Bodie, "A Conceptual Framework for Analyzing the Financial Environment," in Crane and Bodie.

R. Rajan, "The Past and future of Commercial Banking Viewed through an Incomplete Contract Lens," *Journal of Money, Credit and Banking*, Vol. 30, No. 3 (August, 1998, Part 2) p.533.

R. Shearer, J. Chant and D. Bond, *The Economics of the Canadian Financial System: Theory, Policy & Institutions,* 3rd edition, 1995.

BANK LENDING AND GOVERNMENT CREDIT POLICIES

Michael Skully, Professor of Banking
Dept of Accounting & Finance,
Monash University, Australia

I. INTRODUCTION

The Asia crisis, briefly at least, placed banking and bank lending practices on the front pages of the national daily newspapers throughout the region. While the media has since become bored with bank lending, the topic should remain one of considerable interest to its readers. As the World Bank (1998) commented, the Asia crisis' main causes "were compounded by shortcomings in the way countries allocated their resources, including state directed lending, nepotism, skewed industrial structures, and limits on foreign participation and competition." So bank lending, particularly of the state directed variety, was a main factor in the crisis.

Perhaps of greater concern is that bank lending continues today as an important source of potential systemic risk. Kane (1998, p. 4), for example, claims that three strategic elements characterise today's banking policies: "politically directed subsidies to selected bank borrowers; subsidies to bank risk taking; [and] defective monitoring and control of the subsidies." As he explained, the first two "snatch wealth surreptitiously from taxpayers and require loan officers to pass some or all of that wealth to a politically designated set of borrowers." The third ensures that these activities are difficult for taxpayers to monitor.

So there seems ample justification to examine bank lending in the context of a financial development seminar and particularly so in respect to government credit policies that result in directed lending. This paper will first consider banking lending itself and how the types of bank advances have changed over recent years. It then examines how this lending has performed first in respect to economic growth and then to deposit levels. Government credit policies in both directed bank credits and loan guarantee programs are then discussed. The last section summarises the paper and closes with some warning comments.

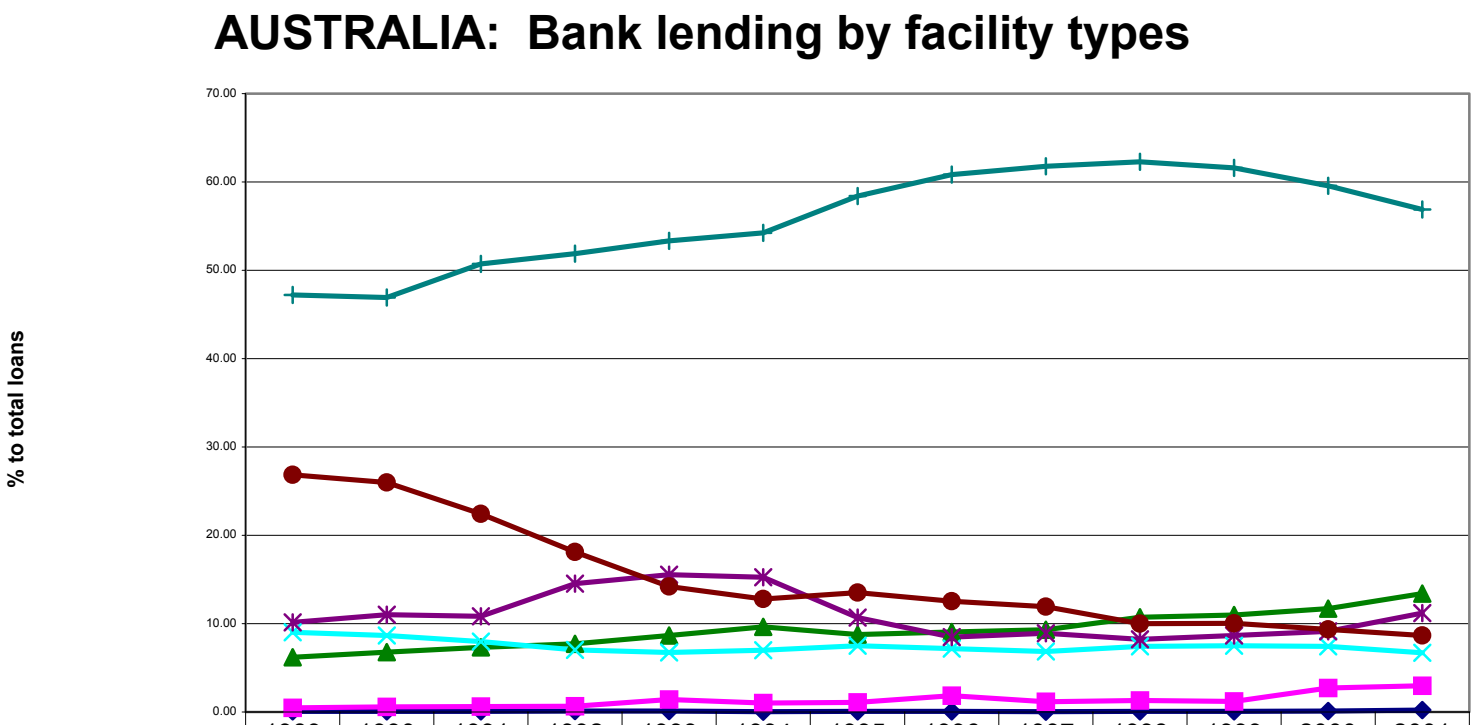
II. TYPES OF BANK LENDING

Once most domestic bank lending within APEC was via an overdraft account. A client would first establish this facility with the bank for a specific dollar amount. Then the client could write cheques against this account up to the facility's dollar limit. Should the client not need to draw on the overdraft, only a nominal charge was made. If the client did need the money, then interest was charged only on when the account balance was in deficit. While interest was deducted on a monthly or quarterly basis, no principle repayments were expected on the amount borrowed. Many facilities did require the account be cleared (be in surplus) for a minimum period each year, but even this was not always enforced for good clients. Thus came the expression, the evergreen overdraft.

While the evergreen overdraft certainly met customer needs, financial deregulation meant that overdrafts became increasingly expensive for banks to service. Money markets developed and this gave clients an alternative for depositing surplus funds. Similarly, where bank interest rates were still subject to interest rate ceilings, the overdraft rate could not be increased in line with market rates. Some banks therefore experienced the misfortune of clients drawing down their low cost overdrafts only to place the funds at a higher rate in the money market.

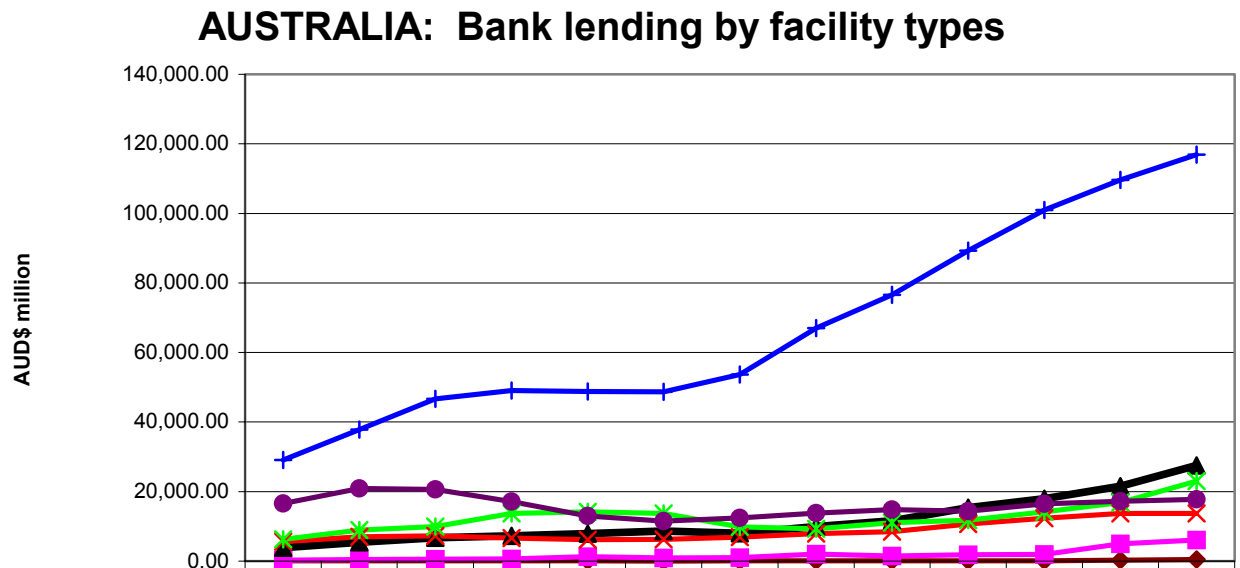
Such events caused banks to reconsider their lending policies and soon other forms of lending developed. Overdrafts declined in importance accordingly so by the late 1980s in Australia, they accounted for less than 30% of commercial lending. In 2001, while overdrafts are still a key part of everyday banking, their importance in lending has been transformed from dominance into a fairly minor position. As shown in Table 1 and Chart 1, for example,

CHART 1 AND TABLE 1



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Credit cards	0.0876	0.0807	0.0816	0.1005	0.1005	0.0457	0.0566	0.0557	0.0479	0.0592	0.0747	0.1263	0.2082
Promissory notes	0.4819	0.5796	0.6104	0.6588	1.4282	1.0058	1.0916	1.8536	1.1733	1.2964	1.186	2.7015	2.9561
Other	6.2074	6.772	7.3347	7.7124	8.6565	9.6368	8.7504	9.0637	9.3162	10.715	10.963	11.699	13.406
Leasing	9.0353	8.6537	7.9538	7.0282	6.7311	7.0082	7.513	7.1594	6.8339	7.4293	7.5078	7.434	6.6902
Bills held	10.163	11.027	10.845	14.524	15.536	15.27	10.699	8.469	8.9292	8.2189	8.6503	9.1302	11.185
Overdrafts	26.833	25.98	22.433	18.099	14.218	12.787	13.5	12.551	11.931	9.9888	10.028	9.3329	8.6674
Fixed loans	47.193	46.909	50.74	51.877	53.329	54.248	58.389	60.848	61.769	62.292	61.591	59.576	56.887

CHART 2 AND TABLE 2



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Credit cards	54	65	75	95	92	41	52	61.25	59.4	84.868	122.43	232.32	427.79
Promissory notes	297	467	561	623	1307	903	1003	2040.1	1455.2	1857.7	1944.5	4971	6073.1
Other	3826	5456	6741	7293	7922	8652	8040	9975.5	11555	15354	17974	21527	27542
Leasing	5569	6972	7310	6646	6160	6292	6903	7879.7	8475.9	10646	12309	13679	13745
Bills held	6264	8884	9967	13734	14218	13710	9830	9321	11075	11777	14182	16800	22979
Overdrafts	16539	20931	20617	17115	13012	11480	12404	13813	14797	14314	16441	17173	17807
Fixed loans	29088	37793	46633	49056	48804	48704	53648	66969	76610	89263	100979	109623	116872

overdrafts account for only 8.67% of bank commercial lending in Australia in April 2001.

Instead, banks now treat customers differently and try to match their loan with customers' need. Where medium term capital is required, banks today offer a fully drawn, term advance. The magnitude of this change in Australia is shown in Table 2 and Chart 2 where fixed loan outstandings increased sharply while most other advances either declined or stayed relatively constant. So by April, 2001, such advances accounted for some 56% of commercial bank lending. However, this is not the only change. Bank lease finance and hire purchase arrangements now offer an alterative for funding capital equipment. Similarly, where the financial markets permit, bills or commercial paper facilities serve as a short to medium term funding replacement for overdrafts. Indeed, in 1999 bills facility outstandings in Australian actually came to exceed overdrafts.

While the type of bank lending varies from country to country, term loans are generally becoming the most important source of bank funding within the region. The advantage from the bank's viewpoint is that the funds are deposited in full in the client's account once the loan is signed. Interest on the full amount is charged from the very start. Similarly, the bank can now avoid the liquidity risk problems that a sudden overdraft draw down could cause.

The significant change not reflected in these statistics is that of the banks' assistance in dis-intermediation. As money markets and then capital markets developed, the better quality corporates found that their credit ratings often equalled, if not exceeded, those of the local banks. So while most Australian banks have international credit ratings of AA, some larger corporates hold a similar rating or better. Where banks raise funds in the wholesale market and pay according to their ratings, it is difficult then to add a margin and on lend to these clients. Basel II should improve this position, but the problem of equal borrowing rates will still remain.

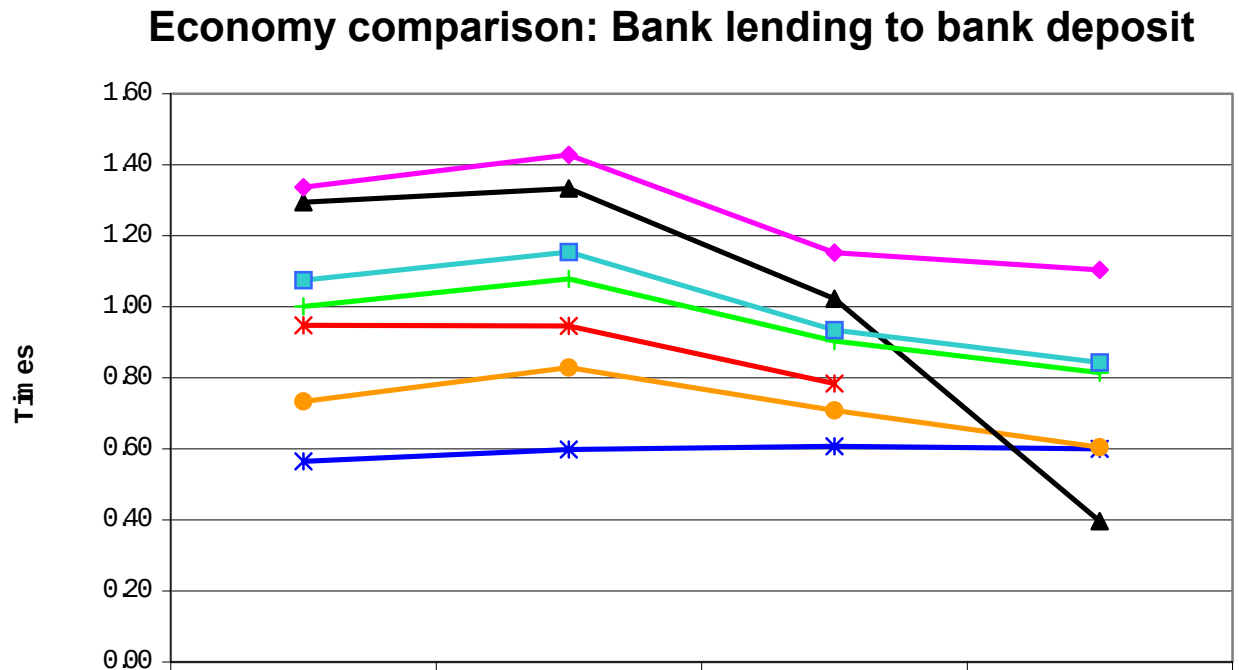
Banks facing the alternative of losing a client to the capital markets completely or of earning some fee income by facilitating these raisings were quick to seize the latter choice. While prudential regulators may be less then pleased with this trend, those interested in capital market development should welcome and indeed encourage this transition.

It would be nice to end this section with some comments on the differing countries practices in the loan process itself both before and after the crisis. Unfortunately, like the specific types of bank lending, this information is not readily available from published sources. The rhetoric one hears from bank regulators might suggest that the past excesses and poor lending practices are behind us and that modern risk management now characterises domestic banking throughout APEC. Such a view, however, is at best a wish and one that probably remains quite far from a reality.

III. BANK LENDING TO ECONOMIC GROWTH

A successful banking industry is a key growth variable in the modern economy and this is even more true for APEC's transition economies. Bank loans provide the fuel for the growth engine and so a faulty fuel valve can cause a similarly faulty growth pattern. This certainly seems the case within the region where those countries with more successful systems performed better. As shown in Table 3 and Chart 3, the ratio of bank lending to gross domestic product (GDP) provides a sharp contrast between those economies hurt significantly by the Asia crisis and those that were not. In the latter case, Australian bank

CHART 3 AND TABLE 3



	1996	1997	1998	1999
AUSTRALIA	0.564774408	0.598642156	0.607554995	0.600142111
HONG KONG	0.733116355	0.829204204	0.708192282	0.604782882
INDONESIA	1.294358082	1.333185254	1.022850224	0.396098012
MALAYSIA	1.000691785	1.078154709	0.903895255	0.814299463
PHILIPPINES	0.947390228	0.945657998	0.7837757	
SINGAPORE	1.07433239	1.153861273	0.934265416	0.843691836
THAILAND	1.337028472	1.428112949	1.152324135	1.103555678

lending has grown almost in a straight upward sloping line with lending growth exceeding that of GDP. In contrast, the position of Indonesia is very clear with the ratio declining sharply after 1997. The remaining countries show a similar but not as significant post 1997 declines. This performance difference become even more apparent if one plots the growth in bank lending itself against the growth in GDP as is shown in Chart 4.

IV. BANK LENDING TO DEPOSITS

There are many development ratios available to indicate the success or otherwise of a financial sector. Many relate to various types of bank deposits and their relationship with economic growth. A simple examination of bank lending to bank deposits can provide some similar insights. As shown in Table 5 and Chart 5, banks in the ASEAN countries initially performed aggressively with their lending activities exceeding deposits. This in part may reflect a use of their own capital for that purpose but it is more likely a function of foreign currency borrowings from overseas which were used to fund domestic lending. The impact of the crisis on bank advances became evident in 1998 but the significant impact came in 1999. The ratio for Indonesia certainly reflects the banks unwillingness or possibly inability to lend.

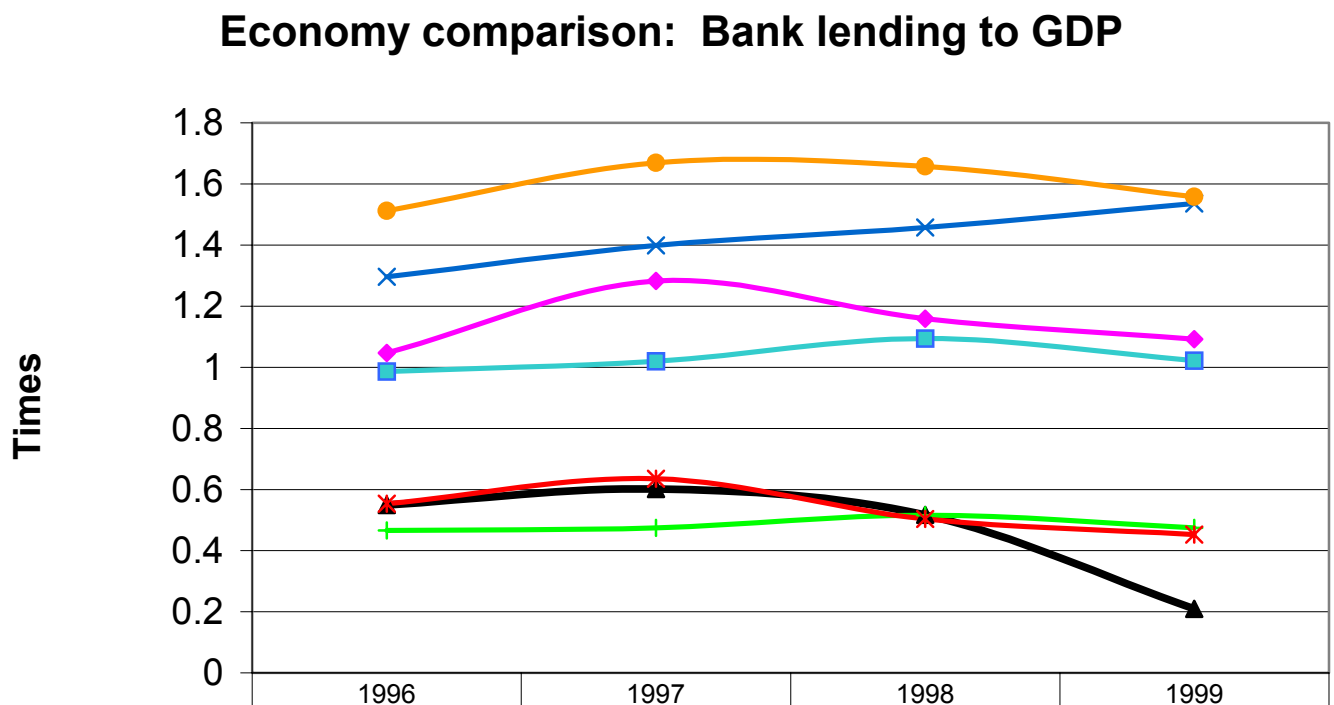
V. GOVERNMENT CREDIT POLICES

Governments intervene in the financial sector when they feel that the social returns from specific projects justify more investment than a strictly market allocation would provide. Where governments required banks to make loans to a specific borrower (a state enterprise), a specific type of individual borrower (ethnic or occupation), a specific industry (agriculture) or a specific size of client (small business), this is known as directed lending. As Fry (1988, p. 414) explained such "selected credit policies tend to be based on two premises: planners know best what investments should be undertaken, and credit allocation can ensure than those and only those investments are undertaken." If these premises hold true, then the country will certainly benefit from such policies.

Regardless of whether these interventions fulfil government socio-economic objectives, their impact on the financial sector are often far from desirable. At the most basic level, they distract officials from addressing the actual problems perceived. As the World Bank (1989, p. 55) complained, “rather than lay the foundations of a sound financial system, most governments concentrated on intervention designed to channel resources to activities that they felt were poorly served by existing financial institutions.” Furthermore as these measures distort the supply and demand for funds, the financial sector will not operate at peak efficiency. So, it is fund raising and allocation that become sub-optimal. This in turn will cause the financial sector assets to grow at a rate less than that of the real economy and result in what Shaw (1973, p. 3) called financial repression. Beim and Calomiris (2001, p. 47) explained, government financial repression measures can be characterised into six different types:

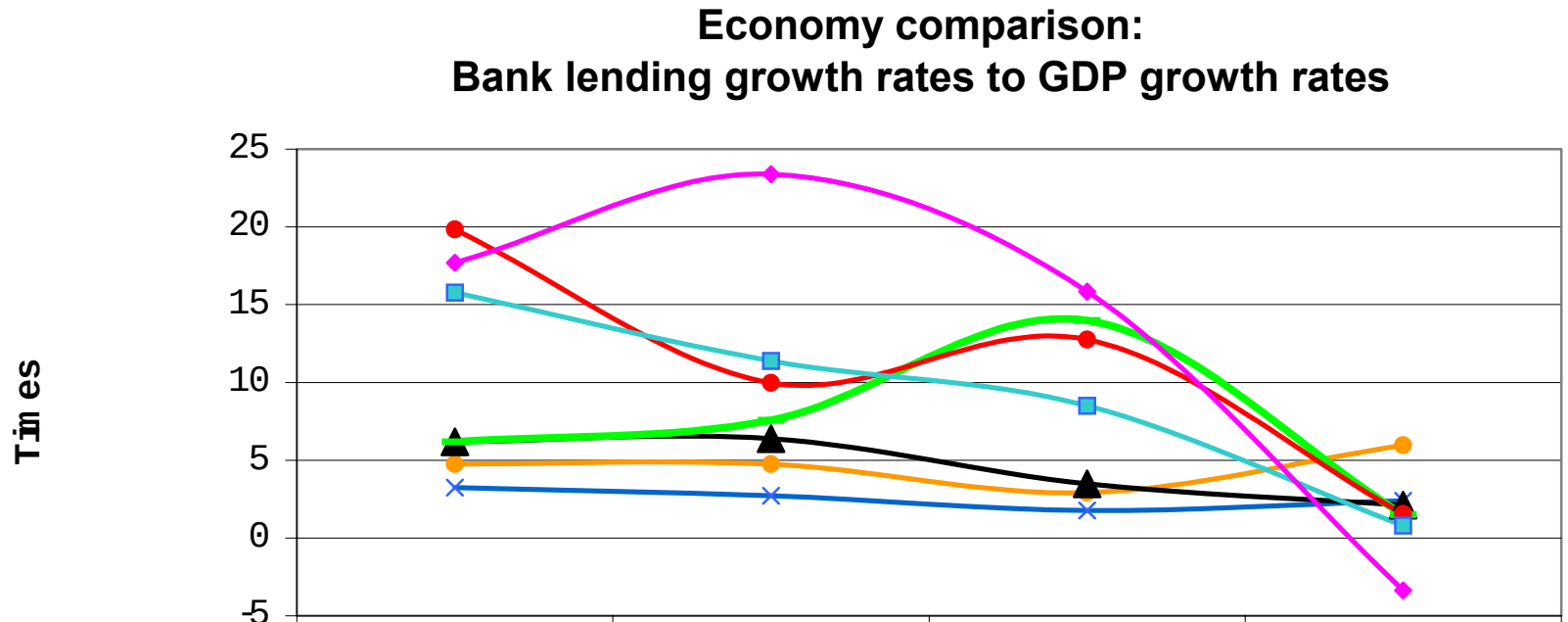
1. "Imposing ceilings on interest rates paid by banks for deposits;
2. Imposing high reserve requirements on banks;
3. Lending to industry or directing bank credits;
4. Owing and/or micro managing banks, leaving them little autonomy;
5. Restricting entry into the financial industry, particularly by foreigners; [and]
6. Restricting international capital inflows and outflows."

CHART 4 AND TABLE 4



	1996	1997	1998	1999
AUSTRALIA	1.296576388	1.399385496	1.457665195	1.535743744
HONG KONG	1.511884486	1.668605442	1.657292244	1.558180447
INDONESIA	0.549951092	0.602416779	0.516975237	0.209404619
MALAYSIA	0.466174034	0.474815832	0.515729065	0.474803488
PHILIPPINES	0.554188736	0.635523995	0.503396324	0.451956267
SINGAPORE	0.98648846	1.019775604	1.09465094	1.022256409
THAILAND	1.047021649	1.283170713	1.159262047	1.092286317

CHART 5 AND TABLE 5



	1996	1997	1998	1999
THAILAND	1.914411902	12.01202736	7.328329129	-4.165293828
SINGAPORE	-4.060147169	1.403761252	-4.25103897	-0.746543639
PHILIPPINES	13.65395191	2.397690123	-1.214377057	0.037692301
MALAYSIA		1.185587092	10.48245174	-0.613044411
INDONESIA	1.446095687	1.6299178	0.575677631	-3.835927548
HONG KONG	1.491410291	2.039861034	1.139025888	3.560463723
AUSTRALIA	3.250131413	2.718809654	1.775255693	2.392215797

Each of the above measures could be considered at least partly a function of government credit policies and are often interconnected.

While examples of each of these six measures are easily found within the region, at least some of them have become less common. With financial deregulation, direct interest rate controls are becoming infrequent. Some still exist as transparent regulations but others continue as a form of less clear moral suasion. High reserve requirements remain in some Pacific Islands (40% of deposits in Vanuatu) but these too are being replaced with more liquidity risk focused prudential measures. Development banks, too, are slightly less common. Countries like Australia, New Zealand and Singapore have privatised or sold their government owned institutions, but often more specialist providers have been created to serve some of their functions in areas such as venture capital, high tech, and medical research. Directed credits still exist in some countries and this will be addressed in more detail shortly. Certainly the regional trend was away from government ownership of financial institution pre crisis but various rescues since have actually meant an increase in government ownership. Most countries now have some measures in place to redress the change and hopefully over time the previous trend will re-assert itself. Unlike government ownership, the Asia crisis has actually helped facilitate greater foreign entry as governments sought overseas banks as rescuers to failed domestic institutions. WTO and GATS similarly have had their impact and even Singapore recently allowed a few foreign banks a limited degree of improved access to its retail banking market. The final position, that of capital flows, has certainly been tested over the crisis period and will no doubt be the topic of much study for years to come.

This discussion will now concentrate firstly on the issue of government credit policies that direct bank lending to specific areas or types of loans. Secondly it will address government lending or guarantee programs similarly designed for this purpose.

A. GOVERNMENT DIRECTION OF BANK CREDITS

A favourite area of financial repression via government credit policies is a requirement that banks or other institutions devote a specific percentage of their funds to certain lending or investment activities. This is popular with governments as it allows them to support often politically important segments of the economy or population without any clear direct cost to the taxpayer. A slight variation on this approach is for the government itself to provide the loan funds through its own financial institutions, government refinancing or loan guarantee programs. These allow potentially more control of the funds in question but make the loans more noticeable and easier to trace. A further variation might be for the government to direct overall credit growth either with a maximum or more recently a minimum target.

Government socio-economic lending directives are well known within the APEC region. Historically, China has been the best example where the state-banking sector allocated the bulk of its loan funds directly in line with government economic planning documents. China's more recent creation of three policy banks (the National Development Bank of China, Agricultural Development Bank of China, and Import and Export Credit Bank of China) for this purpose suggests that government lending directives will continue important for the immediate future.

Lending directives, however, are not a monopoly of the transition economies. The World Bank (1989, p. 55) reported that "at one point Korea had 221 formal directed credit programs" and that "interest rates, maturities and eligibility criteria were often different for each program." In Indonesia, too, pre-deregulation had a similarly extensive and complicated mix of credit programs for rural and other borrowers. More recently, the trend is against directed credits and, if this has been reversed by the crisis, hopefully, as explained shortly, its phasing out will resume. Some programs, however, continue as much as before. Thailand, for example, had directed lending

before the crisis and this continues much the same today. As shown in Table 6, Indonesia and Malaysia also offer a number of directive examples.

Table 6: Government Directed Lending Policies

Indonesia	22.5% of total lending to small business
Malaysia	30% of total lending to ethnic businesses minimum $ small business minimum $ low cost housing
Thailand	14% of deposits to agriculture loans 6% of deposits to rural enterprises loans

As mentioned, Indonesia has long used directed lending as part of government policies. Long before the crisis in 1997, Indonesian banks were required to lend an amount equal to at least 20% of their total advances to small businesses (Kredit Usaha Kacil or KUK). While this ratio requirement continues today, it was increased in April 1997 to 22.5% of total loans (or 25% of all net expansion of bank lending) as one assumes that neither the government nor the small business lobby were satisfied with the outcomes. A more recent change in April 2001, however, reflects perhaps that even where central banks retain regulatory responsibility for the banking sector, they have a fine line to follow between their economic and regulator objectives. The most recent change, increasing the definition of small business from loans to Rp250 million to loans to Rp500 million, enabled the banks to meet this goal without quite the same risk exposures.

Malaysia, too, has been active in directed lending. Here it has used both direct and indirect (moral suasion) measures to ensure lending to bumiputras, low cost housing and small-scale industry. The specifics (since March, 1998) is that banks should hold at least 30% of their total lending (at the end of 1996) in loans to bumiputras. They must also provide loans to individuals to finance at least 100,000 housing units costing M$100,000 or less (total of all banks). Furthermore, they must have at least M$1.0 billion (at least half to bumiputras) extended in loans each of M$500,000 or less to small and medium businesses. Finally, the moral suasion issue, these loans are to be made "at reasonable cost." These measures continue in 2001.

Thailand also has long operated with a directed lending policy in favour of rural areas. Its banks are required to allocate the equivalent of 14% of their deposits to loans for agriculture and a further 6% for loans to other rural enterprises; a total of 20%. Alternatively, they could place a similar amount on deposit with the government's Bank for Agriculture and Agricultural Cooperatives (BAAC).

The full impact of these measures is not known. If they are followed exactly, they may provide funding to projects which would not otherwise obtain funding due to their risk or economic returns. If so, then these measures should reduce the supply of loan funds available to the private sector. The successful private sector borrowers are then likely to pay more for their funds than previously (besides supply and demand banks need to recover the costs of directed lending). This means that their cost of funds increase and so reduce the number of positive net present value projects available. In addition to the extent that directed projects provide lower returns than those foregone, there may be a high opportunity cost in respect to economic growth. A further indirect cost is that firms no longer serviced by the formal banking system may still seek financing from informal sources. This may result in the creation or expansion of an informal financial sector, which in turn could create substantial longer-term costs as well as increased risks. A final, and fairly obvious, cost of directed lending is that the very fact banks need to be directed to make these loans suggests that these borrowers may not be the most ideal customers and may result in higher non-performing loans. Worse still, the very reason that this sector was able to achieve

government support may also reduce, at least indirectly, the banks' abilities to enforce these loan contracts.

If one could assume that lower economic growth, higher transaction costs and perhaps dis-intermediation of the formal financial sector were a reasonable price for the government achieving its objectives, the answer may still not be so certain. For example, the most obvious indicator of success is an increase in the number or relative size of the sector receiving the special treatment. So if by directing credit to small business, the numbers or contribution of small business to GDP increases, then the program is considered a success. Unfortunately, one must examine whether the numbers have increased as a direct result of the program or other factors. It may also just reflect larger businesses reconstructing themselves into a group of smaller firms in order to obtain the special credit. Similarly, banks themselves are not unknown to classify their lending activities to their advantage: for example, what is actually a business loan secured by a house mortgage may be counted as a housing loan or other such creative measures. Finally, there is the "infant industry" danger that once the directed credit program starts, it creates a strong clientele of vested interests which will work hard to ensure such programs continue regardless of their costs to the overall financial sector or economy.

Interestingly, there is also the reverse of what is addressed in the financial repression literature. These are prudential directive measures against lending too much, rather than too little, to specific sectors. These limits preclude a bank creating excessive concentration risks, but they too can have economic objectives. The Philippines for example limits loans for real estate development to a specific percentage of total lending (20%). By varying these percentages, however, the government could certainly encourage or discourage these activities.

It would be wrong, however, to close any discussion on directed bank lending without answering the often asked question, what about Korea. There seems little question that its directed lending significantly enhanced its economic performance. Initially, its credit allocation policies were successful and the economy grew rapidly. Later, however, the government's encouragement of high investment in ships and heavy industry was not so helpful. So the answer is fairly obvious. If one knows with certainty which sectors of economy will out perform the others, then government should use direct controls to maximise the expansion of that sector. However, if certainty assumption does not hold, the decision becomes rather more questionable. It would seem wiser to leave these decisions for the market to determine.

B. GOVERNMENT LOAN OR GUARANTEE SCHEMES

Governments interested in directed lending are seldom content to limit their involvement to just bank loans. Most will also seek other ways to shift loan funds to appropriate borrowers. For example, agriculture and small business loans and guarantee funds were once the most common but export credit incentives schemes, particularly government body related ones, can be found in almost every country. The more recent type of loan program entry has been technology related support funds. In addition to loans and loan guarantees, these government plans often entail specialised government bodies making equity investments in specific sized firms (small to medium) in specific industry (biotech, computers, and communications). Perhaps the most studied area in this regard is that of the rural credit schemes. Unfortunately, their experiences have been at best mixed. As Siebel (1994, p. 22) concluded,

> "1. Farmers tended to consider the loans as free presents attained through government patronage and no intention to repay;
> 2. Or they diverted them to other purposes and found themselves unable to repay;
> 3. Or they complied with ill founded government directives, invested in activities that were perhaps productive but not profitable due to price controls and were equally unable to repay;

4. Financial institutions were forced to accept non-bank criteria in credit decisions, perhaps allocating the wrong loan sizes at the wrong time to the wrong customers for the wrong purposes. This inevitably led to high default levels;
5. Because banks were unwilling to take risks not covered by an adequate research for bad debts, governments instituted credit guarantee funds or agencies absorbing all or part of the risk. This in turn discouraged banks from collecting loans in arrears and further increased defaults."

Indonesia has had some successes in rural lending but it has had its share of failures as well. A recent example from Indonesia is that of the government rural bank, Bank Rakyat Indonesia and the Ministry of Cooperatives, Small and Medium Enterprises' Kredit Usaha Tai scheme. The current prognosis is that some 75% of the resulting loan portfolio is in trouble.

So the experiences of these schemes have not always been that favourable. Furthermore, the schemes may themselves become costly to operate. In the Philippines, for example, Gudger (1998, p. 30) identified "10 different guarantee agencies, each with large administrative overheads and a very small volume of operations... [Most were] insufficient even to cover the administrative charges incurred by the Manila based office staff." Even so, almost all countries have major guarantee programs in place as reflected in Table 7.

Table 7: Government Owned Loan Guarantee Entities

Indonesia	PT. Asuransi Kredit Indonesia (ASKRINDO)
Japan	Japan Small and Medium Enterprise Corporation
Korea	Korea Credit Guarantee Fund
	Korea Technology Credit Guarantee Fund
Malaysia	Credit Guarantee Corporation Malaysia Berhad
	Small Entrepreneur Fund
Philippines	Guarantee Fund for Small and Medium Enterprises
	BAP Credit Guaranty Corporation
	Small Business Guarantee and Finance Corporation
Taiwan	Small and Medium Business Credit Guarantee Fund
Thailand	Small Industry Guarantee Corporation

This presence certainly suggests governments believe guarantee plans serve a useful purpose. The problem, like with directed lending, is whether or not their benefits offset their direct as well as indirect costs. As with the directed lending discussion, it is difficult to quantify all the true position. It is no doubt expensive. In respect to another APEC member, Mexico, World Bank (1989, p. 59) reported that over 1982–87 such implicit subsidies averaged 3% of GDP.

Interestingly, the academic literature suggests that much of these indirect costs of capital market distortion could be avoided by approaching the problem differently. As Van Horne (2001, p. 288) concluded that if government needs to support specific projects or industries then "a strong case can be made that the allocation should be in the form of an interest rate subsidy to the borrower." The particular advantage of this subsidy is that it allows the financial sector to allocate funds normally. It also precludes the need for cross subsidies within the banking system as the taxpayer directly pays the cost.

VI. CONCLUSION

This paper has attempted to examine how bank lending and government credit policies have changed within the region over the recent past. As might be expected from successful financial development, the banking sector has become sophisticated and diverse in the types of products it affords its clients. Overall lending generally kept pace, if it not exceeded, the growth of the economies prior to the crisis but has had difficulties from 1998 onwards. Directed credits continue in some economies but have generally become less important. Government loan guarantee schemes and specialist bodies, however, continue to operate in support of specialist programs and probably have expanded their numbers in response to the crisis.

It would be nice to finish with a statement that while the Asia crisis may have postponed it, reform would soon remove politicians from bank loan portfolios. Sadly, this may not be so. The danger is that just as "reform fatigue" is becoming a problem within some crisis countries, the temptation to resume an addiction to directed credits similarly remains strong. In 1999, for example, (*The Economist* 13 March, 1999) the National People's Congress reminded state banks of their political responsibilities to troubled state enterprises. Furthermore, the increased government ownership due to bank rescues increased the chance of a relapse. As recent as 25 May, 2001, (Jatusripitak, 2001) the Thai Prime Minister had urged his nine government owned banks to provide more loans to help the economy grow.

So this paper must end instead with a warning. If the financial sector does not fulfil the government’s political economic objectives, then the best solution is to heal the financial sector through better education, training and market reforms. If one instead uses the tourniquet of government directed credits and guarantees to stem credit flows from one area to another, its extended use may result in economic gangrene.

Bibliography

Australian Prudential Regulation Authority, 2001, http://www.apra.gov.au, 28 May, 2001.

Bank Indonesia, 2001,http://www.bi.go.id, accessed 28 May, 2001

Bank Negara Malaysia, 2001, http://www.bnm.gov.my, 28 May, 2001.

Bank of Thailand, 2001, http://www.bot.or.th, 28 May, 2001.

Beim, David O. and Calomiris, Charles W., *Emerging Financial Markets*, Boston: McGraw-Hill Irwin, 2001.

Boocock, Grahame and Shariff, Mohammed Noor Mohammed, "Loan guarantee schemes for SMEs - the experience of Malaysia," *Small Enterprise Development*, June, 1996, pp. 25-36.

Central Bank of the Philippines, 2001, http://www.sequel.net/CB, 28 May 2001.

Fry, Maxwell J, Money*, Interest, and Banking in Economic Development*, Baltimore: John Hopkins University Press, 1988.

Hong Kong Monetary Authority, 2001, http:www.info.gov.hk/hkma, 28 May, 2001.

Jatusripitak, Somkid, "State owned banks urged to issue more loans," *Business Day*, 25 May 2001.

Kane, Edward J, *Capital Movements, Asset Values, and Banking Policy in Globalized Markets*, Cambridge: National Bureau of Economic Research, 1998.

Gudger, Michael, *Credit Guarantees: an assessment of the state of knowledge and new avenues of research*, Rome: FAO, 1998.

Hatakeyama, Michiko S, and Yamamori, Masami, and Nakamura, Hisami, "Credit guarantee schemes for small and medium enterprises in some Asian countries," *The Financier,* February/May, 1997, pp. 62-73.

Monetary Authority of Singapore, 2001, http://www.ncb.gov.sg/mas, 28 May, 2001.

"RBI to review directed lending," *The Hindu*, 26 April 2001.

Reserve Bank of Australia, *Bulletin*, May, 2001.

Shaw, Edward, *Financial Deepening in Economic Development,* New York: Oxford University Press, 1973.

Siebel, Hans Deiter, "From cheap credit to easy money: how to undermine rural finance and development," in Bouman, F.J.A. and Hospes, Otto, *Financial Landscapes Reconstructed: the fine art of mapping development*, Boulder: Westview Press, 1994, pp. 19-32.

The Economist (13 March, 1999)

Van Horne, James C., *Financial Markets Rates and Flows*, 6th Ed, Upper Saddle River: Prentice Hall, 2001.

World Bank, "Financial Systems and Development," *World Development Report 1989*

World Bank*, Annual Report,* 1998

Acknowledgement

The author wishes to express his appreciation to
Oraluck Arsiriaphonghisit for her assistance
in collecting the statistical information
required for this paper.

APPENDIX ONE: BANK LENDING BY INDUSTY

	1996	1997	1998	1999	2000
AUSTRALIA					
Agriculture, mining and quarrying	11.78	10.96	10.92	11.23	11.70
Construction	4.88	4.98	4.85	5.09	5.21
Manufacturing	12.35	12.29	12.19	12.15	10.42
Commerce	15.43	14.24	13.76	13.31	13.04
Financial institutions & real estate	17.46	17.90	19.08	14.72	14.03
Professional & individual loans	–	–	–	–	–
Others	38.10	39.63	39.20	43.50	45.59
Total	100.00	100.00	100.00	100.00	100.00
HONG KONG, CHINA					
Agriculture, mining and quarrying	–	–	–	–	–
Construction	18.48	19.92	19.89	19.98	20.35
Manufacturing	5.99	5.02	4.54	4.16	3.78
Commerce	23.53	21.46	20.03	18.21	16.31
Financial institutions & real estate	11.49	11.77	11.19	9.83	8.69
Professional & individual loans	30.47	31.42	34.99	38.81	39.62
Others	10.04	10.41	9.37	9.00	11.25
Total	100.00	100.00	100.00	100.00	100.00
INDONESIA					
Agriculture, mining and quarrying	6.60	8.28	9.28	12.20	9.73
Construction	–	–	–	–	–
Manufacturing	26.92	29.53	35.22	37.43	39.70
Commerce	55.39	51.79	48.31	38.40	32.87
Financial institutions & real estate	–	–	–	–	–
Professional & individual loans	–	–	–	–	–
Others	11.10	10.39	7.19	11.97	17.70
Total	100.00	100.00	100.00	100.00	100.00

MALAYSIA					
Agriculture, mining and quarrying	0.10	0.14	0.15	0.13	0.12
Construction	18.02	19.56	17.41	16.49	17.01
Manufacturing	8.44	7.85	7.54	7.15	7.08
Commerce	17.96	17.97	15.61	14.44	13.96
Financial institutions & real estate	16.11	15.17	15.27	14.62	13.72
Professional & individual loans	34.37	34.13	36.50	39.94	42.04
Others	4.99	5.18	7.51	7.23	6.07
Total	100.00	100.00	100.00	100.00	100.00
PHILIPPINES					
Agriculture, mining and quarrying	5.04	4.73	6.15	6.15	5.74
Construction	3.82	3.65	4.08	4.08	3.23
Manufacturing	26.53	27.25	26.51	26.51	27.85
Commerce	30.60	34.72	33.98	33.98	31.34
Financial institutions & real estate	31.79	27.53	25.76	25.76	26.65
Professional & individual loans	–	–	–	–	–
Others	2.22	2.12	3.51	3.51	5.19
Total	100.00	100.00	100.00	100.00	100.00
SINGAPORE					
Agriculture, mining and quarrying	0.10	0.13	0.15	0.13	0.12
Construction	16.85	18.32	16.87	15.93	16.65
Manufacturing	9.65	8.71	8.08	7.86	7.54
Commerce	20.91	20.89	17.15	16.10	14.99
Financial institutions & real estate	15.32	14.66	14.99	14.31	13.54
Professional & individual loans	32.02	31.91	35.32	38.56	41.08
Others	5.16	5.39	7.45	7.11	6.07
Total	100.00	100.00	100.00	100.00	100.00

THAILAND					
Agriculture, mining and quarrying	3.88	3.26	3.41	3.20	3.09
Construction	4.87	4.51	4.71	4.35	3.54
Manufacturing	27.05	30.90	30.66	30.06	28.68
Commerce	32.76	31.17	31.54	29.69	26.91
Financial institutions & real estates	15.89	16.14	14.69	17.66	21.88
Professional & individual loans	12.62	10.77	11.36	11.05	11.11
Others	2.94	3.25	3.62	3.98	4.80
Total	100.00	100.00	100.00	100.00	100.00

	1996	1997	1998	1999	2000
AUSTRALIA					
Agriculture, mining and quarrying	20,451.60	21,530.66	23,600.47	26,602.89	30,009.00
Construction	8,469.60	9,781.11	10,488.51	12,055.02	13,371.00
Manufacturing	21,437.40	24,132.04	26,349.50	28,785.07	26,741.00
Commerce	26,792.40	27,967.94	29,756.00	31,531.44	33,458.00
Financial institutions & real estate	30,303.30	35,155.54	41,252.71	34,882.85	35,993.00
Professional & individual loans					
Others	66,133.94	77,846.26	84,761.00	103,046.58	116,963.00
Total	173,588.24	196,413.55	216,208.19	236,903.84	256,535.00
HONG KONG, CHINA					
Agriculture, mining and quarrying					
Construction	333,000.00	440,000	416,000	384,000	398,000
Manufacturing	108,000.00	111,000	95,000	80,000	74,000
Commerce	424,000.00	474,000	419,000	350,000	319,000
Financial institutions & real estate	207,000.00	260,000	234,000	189,000	170,000
Professional & individual loans	549,000.00	694,000	732,000	746,000	775,000
Others	181,000.00	230,000	196,000	173,000	220,000
Total	1,802,000.00	2,209,000.00	2,092,000.00	1,922,000.00	1,956,000.00
INDONESIA					
Agriculture, mining and quarrying	19,323.00	31,318	45,217	27,474	26,183
Construction					
Manufacturing	78,850.00	111,679	171,668	84,259	106,782
Commerce	162,242.00	195,833	235,488	86,449	88,415
Financial institutions & real estate					
Professional & individual loans					
Others	32,506.00	39,304	35,053	26,951	47,620
Total	292,921.00	378,134.00	487,426.00	225,133.00	269,000.00

MALAYSIA					
Agriculture, mining and quarrying	122.48	184.73	221.61	189.93	175.91
Construction	21,311.34	26184.71	25541.95	23421.59	25605.61
Manufacturing	9,981.65	10503.74	11054.87	10152.56	10658.09
Commerce	21,247.10	24057.29	22906.06	20518.89	21001.91
Financial institutions & real estate	19,058.36	20303.81	22407.3	20767.36	20651.89
Professional & individual loans	40,654.15	45677	53556.42	56735.55	63270.13
Others	5,908.19	6934.08	11023.3	10272.09	9130.53
Total	118,283.27	133,845.36	146,711.51	142,057.97	150,494.07
PHILIPPINES					
Agriculture, mining and quarrying	60,652.20	72,900.80	82,977.80	82,977.80	83,266.90
Construction	45,959.00	56,286.00	54,972.20	54,972.20	46,948.80
Manufacturing	319,318.90	420,227.10	357,455.00	357,455.00	404,223.60
Commerce	368,316.90	535,430.90	458,162.70	458,162.70	455,001.70
Financial institutions & real estate	382,632.40	424,657.20	347,339.30	347,339.30	386,796.70
Professional & individual loans					
Others	26,774.20	32,749.50	47,284.00	47,284.00	75,398.30
Total	1,203,653.60	1,542,251.50	1,348,191.00	1,348,191.00	1,451,636.00
SINGAPORE					
Agriculture, mining and quarrying	132.80	187.6	223.6	191.4	178.7
Construction	21,401.20	26,234.80	25,580.00	23,444.00	25,644.70
Manufacturing	12,248.20	12,472.00	12,249.20	11,574.70	11,620.70
Commerce	26,550.50	29,923.20	26,008.80	23,692.60	23,091.70
Financial institutions & real estate	19,448.30	20,997.40	22,724.10	21,062.80	20,864.70
Professional & individual loans	40,658.40	45,710.20	53,554.60	56,748.30	63,284.60
Others	6,548.30	7,716.50	11,300.60	10,471.70	9,356.90
Total	126,987.70	143,241.70	151,640.90	147,185.50	154,042.00

THAILAND					
Agriculture, mining and quarrying	188,495.50	197,695.80	178,860.51	164,341.80	142,540.35
Construction	236,340.80	273,064.40	246,833.64	223,216.40	163,105.51
Manufacturing	1,313,546.20	1,872,325.30	1,606,276.20	1,543,108.80	1,321,029.58
Commerce	1,590,528.90	1,889,191.20	1,652,540.52	1,524,110.10	1,239,473.92
Financial institutions & real estate	771,430.30	978,034.80	769,544.87	906,488.00	1,007,680.93
Professional & individual loans	612,594.50	652,516.40	594,967.23	567,166.40	511,571.59
Others	142,751.20	197,128.10	189,660.80	204,373.00	220,895.35
Total	4,855,687.40	6,059,956.00	5,238,683.77	5,132,804.50	4,606,297.23

SESSION III:RELATIONS BETWEEN FINANCIAL INSTITUTIONS AND ECONOMIC PERFORMANCE: REGIONAL EXPERIENCE

(Speakers: Dr Mitsuru Taniuchi, Prof Y C Jao, Dr Ngiam Kee Jin, Prof Joon-ho Hahm, Mr Michael Willcock and Mr Christian Johnson; and Moderator: Prof Richard Wong)

Dr Taniuchi highlighted the extent of bad debt problem in Japan. The mounting non-performing loans could be partly attributed to the tightening of classification of bad loans by the regulatory body in recent years, and partly to the lack of effort to tackle the problem until the mid-1990s. The persistent weakness of Japan's economy further exacerbated the problem. As some of the performing loans in the earlier periods turned sour along with the further weakening of the economy. The bad loan problem adversely affected the economy through two channels. Firstly, it reduced bank profits and led to a credit crunch, or less seriously, a reduction in banks lending. Secondly, keeping inefficient companies afloat by retaining the bad loans would further delay corporate restructuring. So, Dr Tuniuchi suggested accelerating the pace of disposal of bad loans in Japan. Indeed, this was a requirement that the Japanese government had imposed on banks recently.

Prof Jao evaluated the performance of the Hong Kong, China's banking system in the past four years against the two criteria of "stability function" and "growth function". During the past four years, Hong Kong, China passed through two ordeals, the political transition towards Chinese sovereignty and the Asian financial crisis. On the basis of asset quality, capital adequacy ratio and CAMEL (capital adequacy, asset quality, management, earnings and liquidity), Prof Jao concluded that Hong Kong, China's banking system performed well in respect of the "stability function". In respect of the "growth function", Hong Kong, China's performance however was marred by the prolonged credit crunch, and this was less than satisfactory. Meanwhile, banks scrambled for mortgage loans and offered very attractive terms, as the delinquency rate on mortgage loans though having risen was still the lowest among all types of loans. Nevertheless, he was encouraged to see further reforms of the financial sector being implemented. The gradual phasing out of the Interest Rate Agreement would lead to greater competition and more efficient allocation of resources. The asset quality of all banks in Hong Kong, China, after a brief post-crisis deterioration, stabilised as from September 1999 onwards. Bank profitability also returned. It was generally agreed that Hong Kong, China and Singapore had the best managed and supervised banking sector in Asia. According to Prof Jao's study, Hong Kong, China was ahead of Singapore with regard to Equity/Asset ratio, NPL ratio, return on assets and return on equity. But Hong Kong, China was behind Singapore in the loan loss reserve ratio and cost/income ratio. Nevertheless, in overall terms, Hong Kong, China was still slightly ahead of Singapore.

Prof Ngiam gave a brief account of financial development in Singapore, with special focus on the financial sector reform since 1997. 1997 was considered a watershed year in which the Singapore government announced an incremental approach to liberalisation, with a view to turning Singapore into an international financial centre. The reform included opening up the domestic Singapore dollar borrowing and lending markets, redefining prudential standards for local banks, actively developing the equities and derivatives markets, promoting fund management and insurance industries, and developing the Singapore dollar bond market. While these developments would lead to greater liberalisation of the Singapore dollar and associated with which greater exchange rate volatility, the risk of exchange rate instability was nevertheless reasonably contained with controlled liberalisation. Furthermore, liberalisation of the banking sector also raised concerns about the ability of local banks to compete, and the commitment of foreign banks to Singapore's long-term economic development. However, Prof Ngiam believed that with financial reforms being implemented voluntarily and gradually, this should allow markets to adjust and regulator to fine-tune policies.

Prof Hahm attributed the unbalanced financial liberalisation and the dominance of *chaebols* over non-bank financial intermediaries (NBFIs) as the crux of the problem in Korea's financial system. In regard of the unbalanced financial liberalisation, the first asymmetry came from unbalanced regulation across banks and NBFI. The latter were less adequately supervised leading to rapid expansion of loan portfolio that were largely short-term in nature and were more susceptible to financial risks. The second asymmetry came from unbalanced capital account deregulation, whereby short-term foreign borrowings were liberalised while quantity constraints on long-term borrowings remained. The dominance of *chaebols* over NBFI and the legacy of government insurance further exacerbated the problem. He then summarised the factors important for a successful financial liberalisation. These include breaking-off the legacy of implicit guarantee; establishing effective monitoring scheme for NBFIs; an orderly and prudential liberalisation; and adequately capitalising financial institutions, upgrading supervisory and accounting standards; and enhancing risk management capability of financial institution and corporate firms prior to liberalisation.

Mr Willcock presented the mission and vision of the Financial System Inquiry in Australia. The Inquiry identified the factors that could reshape Australia, including changing customers needs and profiles, technological innovation, changing regulatory requirements, and structural changes in markets and industry sectors. All these changes would give rise to some regulatory implications. Meanwhile, the key lessons of financial reform that could be drawn on the experience of Australia were: financial sector reform would take time; it was an iterative process; it required a clear understanding of the proposal of financial regulation; and its impact was difficult to assess.

Dr Johnson gave details of the more recent financial developments and reforms in Chile. He believed that these changes had strengthened the capability of the Chilean financial system in absorbing unexpected real and financial shocks. The Central Bank of Chile was convinced that flexibility was essential to facing a changing world. The move implied a major structural change, as the costs of exchange rate risk would fall on the private sector rather than on the central bank or the government. However, flexibility could be made fully operational only on the basis of strong fundamentals. From the financial sector point of view, exchange rate flexibility implied taxing the capability of the financial system to adapt as well as that of the private sector to adjust.

Discussion

The presentations were followed by floor discussions. Prof Ngiam reiterated that foreign banks used to focus on high-income customers and multinationals in Singapore. As local banks upgraded themselves and became more competitive, they were also reluctant to serve the lower-income customers. Though government stated that they should not direct banks to serve low-income customers, Prof Ngiam reckoned that subsidies might work to ensure the availability of banking services to the poor.

It was noted that the Japanese government had lately introduced a new requirement for banks to sell bad loans that they were unable to dispose in two to three years to a special Resolution and Collection Corporation. Dr Taniuchi further emphasised that the government had no intention to bail out banks or to purchase bad loans at book values or at any subsidised values. In answering a question from the floor, Dr Taniuchi again explained that the sharp increase in bad loans over the past two years were partly due to the increasingly stringent disclosure requirements. The bad loans accumulated in the earlier years were not revealed under the previously more lenient disclosure requirements.

BANKS' BAD LOANS WEIGH DOWN THE JAPANESE ECONOMY

Dr Mitsuru Taniuchi, Deputy Director-General for Economic Assessment and Policy Analysis, Cabinet Office, Japan

Japanese banks have long been saddled with mounting bad loans. In fact, already over a decade, bad loans have been hobbling Japan's banking sector, and the resultant weakness of the banking sector has been a major drag on the Japanese economy.

(Panel) I will discuss three broad topics. I will begin by overviewing the extent of the problem. We will see how bad the bad loans problem is in Japan. Second, I will discuss the effects of this banking sector problem on the overall performance of the Japanese economy. Third, I will discuss policy measures to help resolve the problem.

(1) How bad is the bad loans problem?

(Panel) First, the extent of the problem. Bad loans of all banks in Japan totaled 31 trillion yen (US$260 billion) as of March this year. 31 trillion yen of bad loans accounted for about 6% of their total lending assets. To compare, let me cite the comparable figure for US banks. The bad loans ratio in the US was about 1% (1.2%) last year. You can see how much the balance sheets of Japanese banks are impaired.

What makes the matter worse, banks' bad loans have not been reduced, but rather edging up, if anything, in recent years, in spite of the fact that banks have been writing off part of bad loans every year. This means that fresh batches of bad loans have been cropping up each year.

As you can see in the panel, over the past ten years, the total amount of bad loans has been steadily on the rise. But I should note that the disclosure standards have been tightened over the period, so that part of the increase in bad loans in the past simply reflects tighter standards for disclosure. Since 1998, however, the government has put into place stricter standards for disclosure, which are in conformity with the standards of the US Security Exchange Commission (or SEC standards).

Let me now briefly explain how the problem got started. I will also discuss why the problem has so tenaciously gripped the Japanese banking sector for a decade.

(Panel) The genesis of the problem was bullish bank lending during the bubble boom in the late 1980s. During the bubble boom, banks rushed to make loans to property developers, construction companies, and other businesses that heavily invested in land. Land prices were skyrocketing at that time. As ever, the euphoria did not last. Much of real estate-related loans and other loans extended under lax credit standards turned sour, once the bubble boom ended and land prices plummeted.

(Panel) Clearly, mistakes were made. More importantly, a troubling question is why bad loans have kept increasing for a decade, and why banks have been unable to resolve the problem for such an extended period. Until the middle of the 1990s, banks did not tackle the bad loans problem in earnest, because bad loans were not fully recognized as a serious problem. The true extent of the problem was not known either, because of the very lenient standards of disclosure until recently. Banks appeared to think that their problems would go away once the economy rebounded.

The reality was that their problems never went away. In late 1997, a couple of large financial institutions suddenly collapsed. Their collapses and the ensuing jittery in the financial markets

heightened public awareness that Japanese banks and other financial institutions were in big trouble.

Yet, the total of bad loans has remained way high even after 1998. As I mentioned earlier, new batches of bad loans have kept emerging. The major reason for this is the continued weakness of the Japanese economy. Because the Japanese economy has remained weak, part of performing loans has kept turning sour.

In addition, some banking analysts offer another reason for why bad loans have not been reduced. Banking analysts reckon that banks' self-assessment of credit quality has not been stringent enough, so that banks have kept downgrading their loans previously classified as performing loans. Performing loans here include loans that need attention (or category II) as well as normal loans.

(2) The bad loans problem weighs down Japan's economy

Now, let me turn to the second question of what effects the bad loans problem has had on the performance of the Japanese economy.

(Panel) In my view, there are two channels through which bad loans would affect the overall performance of the economy. The first channel is the reduction of bank profits. Reduced bank profits could lead to credit crunch. Even if there is no acute credit crunch, reduced bank profits could impede banks' role as financial intermediaries to funnel funds to most productive uses, as I will discuss later.

The second channel is that keeping bad loans on bank balance sheets for long time inhibits corporate sector restructuring. Economic growth would be lowered to the extent that necessary corporate sector restructuring is not undertaken. This channel is particularly important in the context of today's Japanese economy.

Those are the two channels through which bad loans could adversely impact the economy. Now, let me discuss further each of the channels. The first channel is reduced bank profits.

(Panel) Over the past several years, credit costs arising from bad loans have much exceeded bank operational profits (see the panel). Credit costs include loan loss provisions and write-offs. Until recently, banks managed to cover large credit costs by tapping unrealized capital gains from their equity holdings. However, banks can no longer tap potential capital gains at the recent sagging stock prices, because potential capital gains have been largely used up.

The problem ahead is that future bank profits will likely be suppressed for two reasons. First, new bad loans will continue to emerge, and banks will need to charge credit costs for new emerging bad loans. Second, banks have made provisioning for bad loans. But as long as bad loans remain on banks' balance sheets, bad loans continue to earn no profits for banks. The persistent downward pressure on bank profits arising from bad loans increases the risk for banks to fall into under-capitalization, although the capital base of major banks has been temporarily boosted by the injection of public funds two years ago.

(Panel) In general, the reduction in bank profits could lead to credit crunch, dragging down the economy. During the 1998 recession, credit crunch occurred as banks' lending attitude was significantly tightened. More recently, there has been no acute credit crunch. However, I should like to point out that, despite the unprecedented easing of monetary policy at this moment, the extent to which banks has relaxed their lending attitude is much less than during the periods of monetary easing in the past. This suggests that bank credit growth has been constrained by bad loans, because reduced bank profits arising from bad loans have been increasing the risk of under-capitalization for banks.

In addition to suppressing credit growth, reduced bank profits may be inhibiting banks to improve profitability by finding new borrowers and by developing new risk-management skills. Japanese banks are now running their business with very low loan margins. They need to secure new types of borrowers who can afford to pay higher interest rates. However, the lingering risk of under-capitalization is likely to discourage banks to challenge new frontiers. For example, Japanese banks need to develop new risk-management skills to make loans to debtors-in-possession or start-ups which possess little or no collateral. Banks also need to extend project lending instead of the traditional collateral-based, corporate lending. In other words, mounting bad loans are likely to be contributing to dysfunction of the Japanese banking sector by impeding banks' ability and resources to funnel funds to most productive uses.

(Panel) The second channel through which to adversely impact the economy pertains to corporate sector restructuring. Banks have been making provisions for their bad loans. Provisioning reduces banks' exposure to bad loans, enabling banks to maintain future profits when bad loans are eventually disposed of. But I should note that, however adequately provisioned, bad loans earning no income for banks stay on their balance sheets.

In many cases, delinquent borrower companies need substantial corporate restructuring including shedding workers and change in management. Some of the companies need to be liquidated. Workers and managerial resources would eventually be reallocated to more productive companies and sectors. Keeping bad loans on banks' balance sheets for extended periods is tantamount to keeping inefficient companies afloat. Thus, the disposal of bad loans off banks' balance sheets is important to promote the much-needed corporate sector restructuring in Japan.

(3) Policy measures to help resolve the problem

So much for the question the bad loans problem affects the Japanese economy. Mt last topic is what government policies can help resolve the problem.

(Panel) In this regard, the Japanese government has recently required banks to accelerate the disposal of bad loans. More specifically, 16 major banks were required to dispose of their bad loans worth 13 (12.7) trillion yen off their balance sheets in two years. For any new bad loans emerging from now, banks are required to dispose of them in three years. For bad loans that the banks will not be able to dispose of in two to three years, the banks are requested to sell such bad loans to a public corporation for resolution and collection, a company similar to the RTC of the US.

Much of 13 trillion yen of bad loans are covered by provisions and collateral. However, the government takes the view that it is important for banks to remove them from their balance sheets altogether for reasons I discussed earlier. In order to enforce this measure, the government required banks to disclose the progress of bad loan disposition in every half-year reporting period, so that banks will be exposed to close monitoring by markets.

Another key question regarding policy is whether the government needs to inject another round of public funds to banks to help resolve the bad loans problem. For example, Goldman Sachs estimates that the government would need to inject as much as 45 trillion yen to banks. Goldman Sacks and others reckon that banks hold much larger bad loans than 31 trillion yen, the officially-sanctioned amount of bad loans. In their views, a sizable portion of the loans now classified as loans that need attention is potentially bad loans and such loans are currently much under-provisioned. If banks ever make adequate provisions, they would become undercapitalized. Therefore, they argue that huge public funds are needed to recapitalize banks.

The Financial Services Agency, Japan's banking watchdog, does not share this view. Their view is that there is no gross underestimation of bad loans, because banks are now adhering to stricter

standards for loan classification. Banks loan classification is also subject to external audits. In their view, the credit costs for bad loans should not be as large as outside observers argue, and thus banks' capital base would not be severely impaired. The position of the Agency is that, if a bank-wide systemic risk arises, the government is prepared to inject public funds to banks, but it has no intention to bail individual banks out.

THE BANKING SECTOR AND ECONOMIC GROWTH: HONG KONG'S RECENT EXPERIENCE

Professor Y. C. Jao,
School of Economics and Finance,
University of Hong Kong

I. Introduction

Many distinguished economists and economic historians – Smith, Keynes, Schumpeter, Gerschenkron, Cameron, Patrick, Gurley, Shaw, McKinnon, and others – have written on the relationship between banking institutions and economic growth or development. Two dominant themes recur. One lays emphasis on the role of banks as administrators of the payments system and creators of credit. By providing the means of payment and debt settlement, banks facilitate the functioning of a modern monetary economy. By engaging in "maturity transformation", they provide liquidity to the economy. And by intermediating between savers and investors, they finance economic growth or development through granting loans and advances to entrepreneurs and other agents engaged in real investment. Under this theme, the banks are seen as an indispensable lubricant as well as an engine for economic development and growth. In brief, this role may be called the "growth function" of banks.

Owing to their strategic position in the creation of credit, banks are also peculiarly liable to be associated with a credit bubble and hence a bubble economy. It is hard to find any financial crisis in economic history without the active involvement of banks. Hence, another recurring theme is the need for rigorous prudential supervision of banks, and the adoption by banks themselves of a risk management strategy that monitors and controls excessive risk-taking. Because imprudence of banks, by causing banking failure or even a general financial crisis – as the recent Asian Financial Crisis (AFC) of 1997–98 so dramatically demonstrates – the need for prudence and risk control can be subsumed under the heading of "stability function".

The ideal state is where the banking sector performs both the "growth function" and the "stability function" well. Unfortunately, very few economies can attain an optimum balance between the two functions at all times. There seems always to be some tension or even conflict between the two functions for all economies. In what follows, we will use Hong Kong, China's recent experience to illustrate this point.

II. The Stability Function, 1997-2001

After the eruption of the AFC on 2 July 1997, the Hong Kong dollar initially bore the brunt. Between July 1 and October 30, the banking system was little affected. Indeed, the post-colonial epoch in its first few months was marked by an euphoria which reached its crescendo during 23–25 September, when the World Bank Group and IMP Joint Annual Meetings were held in Hong Kong, China, attended by some 300 Finance Ministers and Central Bank Governors from 180 members economies. Altogether 19,500 persons took part in the various meetings/seminars organized by the two international financial institutions. The events were widely acclaimed as a great success, which symbolized Hong Kong's continued status as a leading international financial centre under Chinese sovereignty.

As in the currency market, however, the atmosphere in the banking sector abruptly changed after "Black Thursday", October 23, 1997. In the wake of the sharp fall of the asset markets, and the rapid deterioration of the macroeconomic situation, the banking system could not escape being adversely affected as well.

The negative impact on the banking sector manifested itself in several aspects. The most important one was the steady deterioration of asset quality from Q3 1998 onwards, which did not stabilize until Q4 1999. This is shown in Table 1, which presents percentage classification of total loans. The Hong Kong Monetary Authority (HKMA) adopts a 5-category classificatory system. Briefly, "pass" means loans of which repayment is on schedule; "special mention" are those loans where borrowers are experiencing difficulties; "sub-standard" loans are those where borrowers are displaying a weakness that may jeopardize repayment; "doubtful" loans are those where collection in full is improbable; and "loss" means of course loans which are considered uncollectable. Data prior to September 1998 are not available.

As may be clearly seen, between September 1998 and September 1999, the percentage of "pass" loans fell steadily, while that of problem loans – "special mention" plus "classified" – rose correspondingly. However, from December 1999 onward, the trends have been reversed, in response to the recovery of the economy. But it is noticeable that in December 2000, the percentage of "pass" loans was still lower, while those of problem loans still higher, than their counterparts in September 1998.

The second aspect of the negative impact, which is of course related to the first, is the sharp drop in profitability of locally incorporated banks. According to the HKMA, in 1998, average pre-tax operating profits of local banks fell by 33.6%, while their post-tax profits fell by 34.4%, a stark contrast to average profit growth of 11.7% and 9.7% respectively in 1997. However, in 1999, most banks resumed positive growth, with average pre-tax and post-tax profits recovering to 15.2% and 22.6%. In 2000, these further rose to 37.8% and 29.8% respectively. The improving economy, the significant drop in bad debt provisions, and the increases in net interest and fee income, were the principle reasons.[1]

Despite the initial setback, there was no banking crisis, comparable to that in 1983–86, when seven licensed banks had had to be bailed out in various forms. While all local banks, and some international banks which have strong roots in Hong Kong (such as HSBC, Standard Chartered, and Bank of China) had suffered reduced profitability, they were still profitable. Only one local bank (the Hong Kong Chinese Bank) actually made a loss in 1998. No bank had failed during the AFC. There was a small-scale run on International Bank of Asia in November 1997 following some malicious and unfounded rumours, but it soon petered out after the HKMA issued a statement strongly supporting the bank.

An important evidence of the general soundness of the banking system was the high average capital adequacy ratio (CAR). During 1997-2000, the CAR of locally incorporated banks averaged 18.2%. Admittedly, this increase partly reflected the banks' contraction of their loan portfolios and shift to a more conservative stance. Still, Hong Kong, China's CAR is among the highest in the world, far in excess of the 8% minimum recommended by the Basle Committee as an international benchmark.[2]

Table 1

Asset Quality of All Local Banks

	Sep/98	Dec/98	Mar/99	Jun/99	Sep/99	Dec/99	Mar/00	Jun/00	Sep/00	Dec/00
	as % of total loans									
Pass loans	**88.22**	**84.61**	**82.18**	**81.77**	**81.43**	**82.14**	**82.67**	**84.25**	**85.03**	**86.21**
Special mention loans	**6.79**	**8.06**	**8.99**	**8.09**	**8.25**	**8.04**	**8.05**	**7.37**	**7.25**	**6.52**
Classified loans (Gross)	**4.99**	**7.33**	**8.82**	**10.14**	**10.33**	**9.81**	**9.28**	**8.38**	**7.72**	**7.27**
o/w Substandard	2.23	3.18	3.94	4.80	4.33	3.72	3.43	3.00	2.58	2.59
Doubtful	2.65	3.93	4.61	5.02	5.56	5.44	5.11	4.82	4.56	4.20
Loss	0.11	0.22	0.27	0.31	0.43	0.66	0.74	0.56	0.58	0.48
Classified loans (net)	**-**	**-**	**-**	**-**	**7.29**	**6.59**	**6.12**	**5.53**	**4.90**	**4.87**
Overdue > 3 months and rescheduled loans	**3.81**	**5.12**	**6.39**	**7.01**	**7.53**	**6.96**	**6.86**	**6.14**	**6.27**	**5.59**
	3.18	4.04	5.41	5.92	6.36	5.85	5.90	5.30	5.26	4.49
o/w Overdue > 3 months	0.63	1.08	0.98	1.09	1.17	1.11	0.96	0.84	1.02	1.09
Rescheduled loans										
Non-performing loans	**-**	**-**	**-**	**6.70**	**7.22**	**7.14**	**6.81**	**6.24**	**6.00**	**5.37**

Notes: Pass loans are those where payment is not in doubt. Special mention loans are those where borrowers are experiencing some difficulties. Classified loans are those loans graded as “substandard”, “doubtful” or “loss”. Classified loans (net) are those net of specific provisions. Non-performing loans are those where interest has been placed in suspense or on which interest accrual has ceased.

Source : HKMA Quarterly Bulletin, various issues after Nov. 1999.

In the wake of the improving economic outlook and winding down of the AFC, leading international credit-rating agencies, such as Moody's, Standard and Poor etc. have, since December 1999, upgraded the outlook for Hong Kong, China's domestic banks from "negative" to "stable".[3]

For comparative purposes, Goldman Sachs, a prominent investment bank, has made estimates of Camel ratios of domestic banks in Hong Kong, China; Indonesia; Korea; Malaysia; the Philippines; Singapore; and Thailand.[4] It has however, erroneously included HSBC among Hong Kong, China's domestic banks. Actually, HSBC moved its legal domicile to the United Kingdom in 1990, and is no longer a Hong Kong domestic bank. After removing it, we can readily see that Hong Kong, China; and Singapore banks have the best Camel ratios, as expected. For other countries, some data are either unavailable or not meaningful. Therefore in Table 2, only the Camel ratios of domestic banks in Hong Kong, China; and Singapore in the first half of 1999 are compared. The banks included are Bank of East Asia, Dah Sing Financial Holdings, Dao Heng Bank, Hang Seng Bank, International Bank of Asia, Liu Chong Hing Bank, Wing Hang Bank, and Wing Lung Bank of Hong Kong, and DBS Group Holding, Keppel Tat Lee Bank, Overseas Chinese Bank Corporation, Overseas Union Bank, and United Overseas Bank of Singapore.

Table 2

Average Camel Ratios of Domestic Banks (%), First Half of 1999

	Equity/Assets	NPL Ratio	LLR/NPL	Cost/Income	ROA	ROE
Hong Kong, China	9.96	4.69	53.03	35.45	1.23	11.69
Singapore	9.38	10.58	56.18	31.88	1.10	10.04

Notes : NPL = non-performing loans LLR = loan loss reserves
ROA = return on assets ROE = return on equity

Source : Goldman Sachs, Asia Banks Fact Sheet, Jan. 12, 2000, Vol. 2, No. 2.

From the table, it can be readily seen that Hong Kong, China's domestic banks are ahead of their counterparts in Singapore in respect of equity/assets ratio, ROA and ROE, which are the higher the better. Hong Kong, China also out-performs Singapore for the NPL ratio, which is the lower the better. Hong Kong, China is only behind Singapore in respect of LLR/NPL ratio, which is the higher the better, and cost/income ratio, which is the lower the better. On balance, Hong Kong, China's domestic banks can be regarded as somewhat sounder than their Singapore counterparts. By general agreement, banks in Hong Kong, China and Singapore are the best managed in Asia.

Although Hong Kong's banking sector was remarkably stable and resilient during the AFC, it had not always been so. Indeed, for a number of reasons, principally mismanagement, imprudence, and laxity in prudential supervision, Hong Kong, China was engulfed in two shattering banking crises in 1965–66, and 1983–86.[5] After 1986, the authorities made a determined effort to overhaul the whole supervisory system by tightening prudential and auditing standards, and imposing for the first time a minimum risk-adjusted capital adequacy ratio. By the advent of the nineties, Hong Kong, China's banking system had already become one of the best supervised and managed in Asia. It met the Basle Committee's CAR ratio in 1990, two years ahead of target. Learning from the experience of the AFC, the HKMA is considering or implementing further measures to improve the competitiveness and safety of the banking sector, including full deregulation of interest rates, rationalization of the 3-tier system, the clarification of the "lender of last resort" role, the raising of minimum CAR for locally authorized institutions, fuller disclosure by foreign branch banks, and introduction of a formal deposit insurance scheme etc.[6]

Thus it is not fortuitous that Hong Kong, China's banking sector has passed the supreme test of the AFC with flying colours. Compared to its counterparts in Indonesia, Korea and Thailand, which became basically insolvent during 1997-98, or even to those in China and Japan, which, though less affected by the AFC, are still crippled by problems loans of many years' standing, Hong Kong, China's banking sector can be regarded as a paragon of virtue in terms of the "stability function".

III. The "Growth Function", 1997-2001

Prior to the AFC, bank credit consistently grew at a double-digit rate. At times, the exuberant growth of bank credit was associated with asset bubbles, but on the whole, the readiness of the banking sector to finance economic activities was one of the basic factors responsible for Hong Kong's economic miracle during the post-World War II period. After the AFC broke, however, an unprecedented "credit crunch" began in Q4 1997, which, at the time of writing, still has not fully run its course. A synopsis of this "credit crunch" is given in Table 3.

Before we examine Table 3 more closely, a few explanatory remarks are in order. In the table, loans and advances granted by all "authorized institutions" are given. "Authorized institutions" mean those banking institutions under the 3-tier structure authorized to take deposits from the public. The table also includes both total loans and advances, and loans and advanced for use in Hong Kong, China. This is because, being a major international financial centre in the whole Asia-Pacific region, Hong Kong provides banking finance both inside and outside its borders.[7] Total loans and advances therefore include credits both for external and domestic uses. Furthermore, as Hong Kong has a free foreign exchange market, and imposes no exchange control whatsoever, lending and borrowing are freely and routinely done in foreign currencies. A separate column for foreign currency (F.C.) credits is therefore provided. Note that credits granted in foreign currencies are mostly, but not exclusively, used outside Hong Kong, China, for domestic lending can also be denominated in foreign currencies. With these preliminary remarks, one can now understand the data more clearly. Since the AFC did not hit the Hong Kong, China economy until Q4 of 1997, bank credits for the whole year still grew at positive rates. Indeed, for loans and advances for use in Hong Kong, the growth rates were all over 20%.

Beginning from 1998, however, the "credit crunch" took shape in the form of negative growth rates for all categories of bank credit. The crunch continued for two years, and it was not until the end of 2000 that bank credits denominated in Hong Kong dollar grew at positive rates, but they were very small which could hardly compare with the robust rates before the AFC. Bank credits denominated in foreign currencies continued to fall through February 2001.

The "credit crunch" was unprecedented, because in previous recessions, bank credit continued to show positive, though reduced, growth, although the lack of relevant data classified by use and by currency excludes direct comparison. In particular, in previous cycles, domestic lending lagged GDP growth by one or two quarters, whereas during 1997–2001, it lagged by at least one year, and the recovery of domestic lending denominated in local currency was extremely feeble, as we have just noted. What were the reasons then for this unprecedented phenomenon?

Table 3

Loans and Advances by Authorized Institutions
(HK$ billion)

As at end of	Total Loans and Advances			Loans and Advances for Use in Hong Kong, China		
	HK$	F.C.	Total	HK$	F.C.	Total
1997	1,742.5	2,379.2	4,121.7	1,701.2	508.4	2,209.6
	(+20.4)	(-4.5)	(+5.3)	(+20.4)	(+30.6)	(+22.6)
1998	1,695.0	1,609.4	3,304.4	1,661.6	431.4	2,093.0
	(-2.8)	(-23.3)	(-19.8)	(-2.3)	(-15.1)	(-5.2)
1999	1,607.1	1,205.8	2,812.9	1,582.3	340.0	1,922.3
	(-5.2)	(-25.1)	(-14.8)	(-4.7)	(-21.2)	(-9.2)
2000	1,652.3	809.3	2,461.6	1,624.4	330.8	1,955.2
	(+2.8)	(-22.9)	(-12.5)	(+2.7)	(-2.7)	(+1.7)
2001 (Feb.)	1,676.6	756.8	2,433.4	1,650.0	296.3	1,946.3
	(+3.4)	(-31.6)	(-10.8)	(+3.3)	(-8.3)	(+1.4)

Source: HKMA Monthly Statistical Bulletin

Note: F.C. = foreign currency. Figures in brackets denote year-on-year percentage changes.

We may start by noting that the crunch could be either demand-induced or supply-constrained, i.e., there were factors operating from both the demand and supply sides of bank credit. Overshadowing both demand and supply was the AFC, which was the most devastating economic shock that Asia has ever experienced since the end of World War II.

On the demand side, weak aggregate demand conditions in both Hong Kong, China; and Asia was an obvious reason for the sharp fall in both total lending and domestic lending. In the wake of the AFC, seven economies in Asia – Japan; Hong Kong, China; Indonesia; Korea; Malaysia; the Philippines; and Thailand – contracted in varying degrees in 1998. China and Chinese Taipei managed to maintain positive GDP growth rates, but even they could not avoid a significant slowdown. Singapore's growth was a meagre 1.5%. Both multinational banks and domestic banks based in Hong Kong were unavoidably confronted with sharply lower demand for loans, as entrepreneurs and foreign investors took a dim view of Asia in general, and Hong Kong in particular.

While falling and weak demand was certainly a valid explanation for 1998, it became less so after 1999. From 1999 onwards, most Asian economies began to recover. Hong Kong, China was a comparative laggard, but even it picked up strongly in the latter half of 1999, leading eventually to a robust growth of 10.5% in 2000. Yet the "credit crunch" continued in Hong Kong throughout 1999 and for much of 2000.

Demand side factors therefore cannot explain fully the duration and intensity of the "credit crunch". They must be supplemented by supply side factors. Firstly, after the outbreak and contagion of the AFC, both multinational and domestic banks adopted a much more risk-averse strategy, by reducing outstanding loans drastically, refusing new loans or renewal of existing ones, and generally applying stricter control of risk exposure and monitoring of loan default. Japanese

banks' behaviour was particularly revealing. Before the AFC, Japanese banks were very aggressive in expanding their branch network and increasing their market share in the credit market throughout Asia. Hong Kong, China, in particular, had the highest concentration of Japanese banks outside Tokyo. Their Euroyen lending activities were mostly booked in Hong Kong, China due to the territory's tax and many other advantages. After the AFC broke, Japanese banks made a volte-face by slashing their branches and loan portfolios. Between 1996 and 2000, the number of Japanese authorized institutions in Hong Kong, China (comprising licensed banks, restricted licence banks, and deposit-taking companies) fell from 92 to 35, or by 62%. Their total loans and advances to customers fell from HK$2,177 billion to HK$491 billion, or by 77%, while their loans for use in Hong Kong, China fell from HK$303 billion to HK$159 billion, or by 47%, during the same period.[8] Japanese banks' retrenchment was also motivated, at least partly, by the parlous state of their parent banks, as the AFC further aggravated Japan's own banking crisis, which began as early as 1991.

Even without this significant downward shift in risk-taking, there was another important, though not often appreciated supply-side constraint on bank lending, namely, the collapsing values of collaterals. In Hong Kong, China as in most other economies, the most important collaterals for bank lending are marketable securities and real properties. Both received severe poundings during the AFC throughout the region.

Economic theory has suggested that changes in asset prices, if substantial, can have several effects on the real economy. One is the well-known wealth effect on consumption. But wealth can also affect investment through Tobin's "q ratio", which says that if stock market valuation of real assets (capital equipment, plant, machinery etc.) is greater than their replacement costs, then entrepreneurs will have an incentive to invest in capital formation, and vice versa. Still another, though less well-known effect, is balance sheet, or collateral effect, on credit availability. Briefly, this theory holds that, in a modern economy, credit is granted by banks and other financial institutions on the basis of collaterals provided by the borrower. The most popular and widely used collaterals are real properties, land, and marketable securities. When there is a substantial fall in their values, new borrowers will find it much more difficult to obtain credit. Even those who have already obtained credit will face growing pressure from the lenders either to provide more collaterals, or to repay at least part of their outstanding debt. In the extreme case, the lender may force the sale of the existing collateral to liquidate the debt. Economists have constructed models where substantial changes in the prices of collaterals can general cyclical flunctuations.[9] Thus, a sharp decline in the value of collaterals will reduce credit availability, which in turn will adversely affect aggregate investment and output, and will further depress aggregate activity, causing a self-fulfilling vicious circle.

In Hong Kong, China the Hang Seng Index of stock prices (HSI), after reaching a historic high of 16,673 on August 7, 1997, rapidly declined under the impact of AFC and high interest rates, and by August 12, 1998 had dropped to 6,600 or by 60%. At that point the authorities intervened by massive buying of "blue chips", in order to thwart the "double market play" of the speculators.[10] Although this operation was a great success, not only preventing the meltdown of the market and punishing the speculators, but also earning a huge investment profit for the Government into the bargain, the initial damage during the period 1997-98 had already been done.

The property market fared even worse than the stock market. The authorities could not directly intervene to stabilize property prices, but could only indirectly influence the supply side by temporarily stopping land auction, cancelling the building programme for the "sandwich class", and reducing the scale of home ownership scheme etc. During the period 1997-2000, property prices, depending on location and types, fell by 50–60%.[11] In Q1 2001, property prices continued to show a softening tendancy, despite several interest rate cuts, following the US Federal Reserve initiatives. Even stock prices, though recovering substantially from their August 1998 lows thanks to the Government's intervention, showed great volatility, with the HSI fluctuating widely within the range of 11,000 and 18,300 during 2000-01.

Faced with this great uncertainty and volatility in asset values, banks understandably adopted a very cautious attitude in accepting and evaluating marketable shares and properties as collaterals. This was in sharp contrast to the pre-AFC era, where assets, especially real properties, were expected to appreciate steadily in value over time. The inevitable result has been a sharp contraction in collateralized lending.

If the "collateral effect" was an important factor in the "credit crunch", how can one reconcile it with the "mortgage war" which has been raging since Q4 of 1999? Briefly, the facts of the "mortgage war" are as follows. Starting from about October 1999, some banks began to quote their lending rates on residential mortgage loans below the prime rate. At first, the discount on the prime rate was modest, about 50–100 basis points. As more banks joined the competition for such loans, the discount factor also steadily widened. By Q1 2001, it had increased to more than 225 basis points (P – 2.25 percentage points). According to a HKMA survey, in February 2001, 34.9% of new mortgage loans approved were priced at more than 225 basis points below the prime, while 70.8% of the new loans were priced at more than 200 basis points below the prime.[12]

A "mortgage war" in the midst of a "credit crunch" is indeed puzzling, but on closer examination it is not as paradoxical as it might seem to be. First, although the delinquency rate of mortgage loans rose from 1.12% in September 1999 to 1.34% in February 2001, it was still the lowest among all types of loans. It was also relatively low internationally.[13] Home-ownership is a very entrenched economic and social aspiration in Hong Kong, China and a genuine home-buyer will do all his can, even at great sacrifice, to repay his debt to prevent foreclosure. Second, banks still observed the guideline that the maximum loan should not exceed 70% of the assessed value of the property. Most banks apparently took the view that a further drop of 30% in property value was highly unlikely. Moreover, banks could assess the value of mortgaged properties conservatively, as a further protection of their interests. Third, the increase in mortgage loans may be more than offset, by the decrease in loans and advances to other major economic sectors. In short, a "mortgage war" is not inconsistent with a general "credit crunch".

Table 4 shows the results of HKMA survey on residential mortgage lending by authorized institutions. It is clearly shown that while the annual growth rates decelerated sharply from the double-digit rates in 1996-97, they were still positive. By contrast, many other economic sectors, especially manufacturing, and wholesale and retail trade, suffered negative growth in loans and advances received. However, due to lack of space, the detailed data are not presented here.

Table 4

Survey on Residential Mortgage Lending by Authorized Institutions

End of	Loans Outstanding (HK$ billion)	Annual Growth (%)
1996	330.43	18.8 (Notes 1, 4)
1997	425.47	28.9 (Notes 1, 2, 5)
1998	459.39	9.6 (Notes 1, 3, 5)
1999	478.24	4.0 (Notes 1, 3)
2000	481.96	0.8 (Notes 1, 3)

Notes:

1. The growth rates are adjusted for the effect of re-classification of residential mortgage loans by some institutions.

2. The growth rates are adjusted for the effect of securitization of residential mortgage loans by some institutions.

3. The growth rates are adjusted for the effect of sale and purchase of residential mortgage loans by some institutions.

4. The growth rate is adjusted for the effect of the addition of a subsidiary of a banking group to the survey.

5. The growth rate is adjusted for the effect of sale of mortgage loans to the Hong Kong Mortgage Corporation Limited by some institutions.

Source: HKMA Monthly Statistical Bulletin

The parallel phenomena of "credit crunch" and "mortgage war" have unfavourable implications for the "growth function" of the banking sector. The banks' preference for "safe" loans, at the expense of what they perceived as "risky" loans, may mean that certain pillars of the economy, such as manufacturing and wholesale and retail trade, were under-supplied with credit. At the extreme, the banks' excessive risk-aversion means that they were abdicating their economic and social responsibilities. Small and medium sized enterprises (SMEs), which were less able to provide adequate collaterals, and had less access to the capital market, were liable to be discriminated against. In any case, there is evidence to show that SMEs have borne the brunt of the "credit crunch". Moreover, the "credit crunch" also had its analogue in the prolonged deflation, which began in November 1998, and has still not yet run its course.

In a newspaper column, Mr. Joseph Yam, the Chief Executive of the HKMA, has suggested some other possible reasons for the weakness in domestic lending.[14] The first is increased availability of renminbi (RMB) funding to Hong Kong firms which have operations in Mainland China. This conjecture is however only valid if the lendings are made by Mainland-based banks. For if the RMB funding is provided by Hong Kong-based banks, it will appear in Hong Kong statistics as loans and advances denominated in a foreign currency.[15] However, it is impossible to know from the rather scanty Mainland banking statistics how much credit is granted to Hong Kong firms. The second is the increased volume of external trade conducted through "open accounts", under which overseas importers, having gained greater bargaining power in the current economic environment, would pay directly to the accounts of Hong Kong exporters rather than through the traditional

letters of credit. This conjecture is again anecdotal rather than firmly based on quantitative data. In any case, local exporters may still be able to obtain funding by discounting their receivables (factoring). The third is improved access to, and greater use of, the equity and debt markets. According to Yam, banks feel quite relaxed about the possible "disintermediation" to the equity market, because many recent initial public offerings (IPOs) have been for newly established technology companies to which they would not have lent anyway. As to the debt market, the banks themselves are often the main investors of these corporate bonds, so that the "disintermediation" is a matter of form rather than substance. Hong Kong, China's financial system, like those in many other emerging economies, is essentially bank-based, with all its strengths and weaknesses. To the extent that recourse to the capital market fosters greater functional specialization and institutional diversification, thus correcting the over-reliance on bank finance, the move is actually to be welcomed as a long-term structural transformation. But it is unclear how much capital market finance has substituted for bank finance.

Pending the availability of more substantial statistical evidence, therefore, it is impossible to support or reject Yam's conjectures, though they are interesting and worthy of attention.

IV. Concluding Remarks

The purpose of this paper is to evaluate the performance of Hong Kong, China's banking sector in terms of two criteria: the "stability function" and the "growth function". It is found that, on the stability criterion, the performance of the Hong Kong, China's banking sector during the past four years has been exemplary. During the devastating AFC, not one single Hong Kong bank failed, and Hong Kong, China's capital adequacy ratio and Camel ratios were among the best in Asia and the world. Indeed, the soundness of the banking system is one of the major reasons why Hong Kong, China's currency and financial system survived the AFC relatively unscathed.

But this remarkable record has been marred by an unprecedented "credit crunch" that has continued despite the recovery of the economy during 1999–2000. This paper analyzes the reasons for this unusual and puzzling phenomenon, and concludes that complex demand and supply side factors have been at work. In terms of the "growth function", therefore, the performance of the banking sector leaves much to be desired.

To be sure, une fois n'est pas coutume, as the French say. The AFC is a very special event whose origins, causes and consequences are still not fully understood. Shell-shocked by the catastrophe, banks based in Hong Kong, both multinational and domestic, have sharply increased their risk-aversion to the point where one might say that they have over-reacted. It is not unreasonable to argue that once Hong Kong and Asia resume their normal positive growth on a sustainable basis, that the property market recovers from its depressed level, and that the trauma of the AFC gradually fades in memory, banks will revert to their normal lending behaviour. From the secular point of view, therefore, the current "credit crunch" may be regarded as a temporary aberration.

While this argument is certainly plausible, it unfortunately cannot be verified now, as the "credit crunch" is still continuing. Over the short to medium term, therefore, Hong Kong, China's recent experience suggests that the tension or conflict between the "stability function" and the "growth function" is a very real one.

Notes

1. See HKMA Annual Report, various issues from 1997 to 2000.

2. Ibid.

3. See Peter Chan, "SAR banks win vote of confidence," South China Morning Post, December 9, 1999.

4. CAMEL is the acronym of the five criteria for evaluating the soundness of banks: capital adequacy, asset quality, management quality, earnings' performance, and liquidity. Banks are scored on a scale of 1 (the best) to 5 (the worst) on the basis of CAMEL ratings. Pioneered by the Federal Reserve System in the US, it has now been widely adopted elsewhere, including Hong Kong.

5. For a detailed treatment of these crisis, see Jao (1974), chp. 9, and Jao (1989).

6. For a more detailed discussion of Hong Kong's banking sector on the eve of and during the AFC, see Jao (2001), chps. 3 and 6.

7. Hong Kong's role and characteristics as an international financial centre are extensively discussed in Jao (1997).

8. Underlying data from HKMA Annual Report for 2000.

9. See Kiyotaki and Moore (1997), Kasa (1998), and Edison, Luangaram and Miller (2000) for fuller theoretical discussions.

10. See Jao (2001), chp. 5.

11. Ibid.

12. As reported in "Banks scramble for home loans despite defaults," South China Morning Post, March 28, 2001.

13. In the downturn of 1990-91 in the US, for example, the correspondent ratio was 3.71. See E. Guyot and Yu Wong, "Home Loans Insulate Banks in Hong Kong from Crisis", Asian Wall Street Journal, March 12, 1998.

14. See Yam (2001).

15. RMB and Hong Kong dollar are treated as "foreign currency" in each other's territory, not only under the Basic Law, but also under "Chen's Seven Principles", named after Chen Yuan, formerly Deputy Governor of the People's Bank of China. See Chen (1996).

References

Chen, Y. (1996). "Monetary Relations between China and Hong Kong", paper presented to the Bank of England Seminar on "Hong Kong's Monetary Arrangements through 1997" (Hong Kong: Hong Kong Monetary Authority).

Edison, H. J., Luangaram, P. and Miller, M. (2000). "Asset Bubbles, Leverage, and 'Life Boats': Elements of the East Asian Crisis," Economic Journal. Vol. 110, No. 1, pp. 309-334.

Jao, Y. C. (1974). Banking and Currency in Hong Kong: A Study of Postwar Financial Development (London: Macmillan Press).

_____ (1989). "Recent Banking Crisis in Hong Kong and Taiwan: A Comparative Perspective," in M. K. Nyaw and C. Y. Chang (eds.) Chinese Banking in Asia's Market Economies, (Hong Kong: The Chinese University of Hong Kong), pp. 21-56.

_____ (1997). Hong Kong as an International Financial Centre: Evolution, Prospects and Policies (Hong Kong: City University of Hong Kong Press).

_____ (2001). The Asian Financial Crisis and the Ordeal of Hong Kong (Westport, Conn., and London: Greenwood, Quorum Books).

Kasa, K. (1998). "Borrowing Constraints and Asset Market Dynamics: Evidence from the Pacific Basin", Centre for Pacific Basin Monetary and Economic Studies, Federal Reserve Bank of San Francisco, Working Paper No. PB98-04.

Kiyotaki, N. and Moore, J. (1997). "Credit Cycles", Journal of Political Economy, Vol. 105, No. 21, pp. 211-248.

Yam, J. (2001). "Domestic Lending", 22 February, downloaded from http://www.info.gov.hk/hkma/eng/viewpt/20010222e.htm.

FINANCIAL SECTOR REFORMS IN SINGAPORE

Dr Kee Jin NGIAM
National University of Singapore

1. Introduction

The financial sector has played a major role in Singapore's economic development. Before the onset of the Asian financial crisis, which began with the collapse of the Thai baht in July 1997, financial services in Singapore had consistently grown faster than the rest of the economy, and currently account for some 12 percent of its GDP. To promote Singapore as a financial centre, the government started the process of gradually deregulating its financial system and opening up its financial markets to foreign players from the late 1960s. These measures have been fairly successful in transforming Singapore into a major financial centre, serving not only the domestic economy but also the region and beyond.

Despite the various steps taken by the authorities to deregulate and liberalise their financial markets, the financial sector in Singapore remained fairly tightly regulated up till 1997. The approach to regulating and supervising the financial sector in Singapore before 1997 had been to set high standards, establish strict rules, and take minimum risks. This approach protected not only the financial system as a whole but also individual institutions from failing. The trade-off was that Singapore was traditionally slower than other financial centres, like Hong Kong, China in introducing innovative financial products and new markets.

Recognising the financial sector as a crucial engine for growth in the next millennium and the challenges posed by the global trends in banking and finance, the Monetary Authority of Singapore (MAS) made a fundamental policy shift in 1997. The new approach emphasises the "need to regulate the financial centre with a lighter touch, accept more calculated risks, and give the industry more room to innovate and stretch the envelope".[i] Since then, the MAS has carried out a comprehensive range of bold reforms at the regulatory and supervisory levels and in individual markets. The reforms are aimed at creating a more conducive regulatory environment and make Singapore into one of the key financial centres in the East Asian time zone.

Against the above background, this paper surveys the actual development of financial reforms in Singapore from 1997 onwards, assesses why these reforms were pursued despite the on-going Asian financial crisis, and asks what lessons can be drawn by Asian economies. The paper is organised as follows: Section 2 analyses the major developments in the Singapore financial scene before 1997, i.e. in the years when it was highly regulated; Section 3 examines the financial reforms and strategic policy changes since 1997 to meet the new challenges facing Singapore as a financial centre; Section 4 discusses the benefits and risks to Singapore from liberalising the Singapore financial sector; Section 5 contains the lessons that can be drawn for Asian economies that are contemplating deregulating and liberalising their financial systems; and Section 6 provides the conclusions.

2. An Era of Tight Regulation: The Financial Scene Prior to 1997

The government has identified financial services, along with manufacturing, as the two most important engines of growth for Singapore. Towards this end, the government has constantly reviewed its strategies and approaches on regulating and promoting the financial sector. The MAS, which was formed in 1971 to perform various central banking functions, has been the driving force behind the reforms to transform the financial landscape of Singapore.[ii]

Some of the concrete steps towards deregulation and liberalisation taken before 1997 are chronicled in Table 1. Three kinds of financial sector reforms can be observed. The first was the domestic financial deregulation which began in 1975 with the abolition of the cartel system for fixing interest rates. The second involved the capital account liberalisation which took place in 1978 when the last vestiges of exchange controls were lifted. The third was the internationalisation of financial services which occurred when the domestic market was opened up to more foreign banks in 1970 and to more foreign broking firms in 1987.

TABLE 1

Chronology of Financial Sector Reforms in Singapore Before 1997

September 1970	Policy towards admission of foreign banks is liberalised
July 1972	Cartel system for fixing exchange rates is abolished
May 1973	Stock Exchange of Singapore (SES) was set up after the split of the joint Stock Exchange of Malaysia and Singapore
July 1973	Floating of the Singapore dollar is instituted
August 1973	Dealings in the gold market are completely liberalised
July 1975	Cartel system for fixing interest rates is abolished
June 1978	Exchange control is completely liberalised
December 1983	A derivatives exchange known as the Singapore International Monetary Exchange (SIMEX) is formed
February 1987	SES set up a second board known as SESDAQ to allow small companies to raise funds in the equity market
March 1987	The stock-broking industry is opened to local banks and foreign financial institutions
March 1989	An over-the-counter market known as Clob International is established to trade in Malaysian shares after Malaysia delisted Malaysian companies from the SES
March 1992	Seven foreign broking houses are allowed to trade directly on the SES
September 1996	Foreign companies with substantial business in Singapore can list and trade their shares in Singapore dollar on SES

However, these reforms have been implemented rather cautiously and were aimed primarily at opening up the Singapore financial market to foreign participants in a gradual and orderly fashion. Prior to 1997, certain regulations were considered sacrosanct by the authorities even though they hindered the development of Singapore as a financial centre. Two of the most controversial regulations were the tight control of the banking sector and the restrictions imposed on the use of the Singapore dollar.[iii]

2.1 Stringent controls on the banking sector

Before 1971, there was only one type of commercial bank in Singapore. All banks were permitted to conduct the whole range of banking services, regardless of their country of incorporation. These included the operation of different kinds of accounts (current, savings, and fixed deposit), the financing of imports and exports, the transfer of funds, commercial letters of credit, trust receipts, travellers' cheques, and currency transactions. To attract international banks to Singapore and to avoid excessive competition in domestic banking, the MAS began to issue other types of licences for specialised banking services. Restricted licences were issued in 1971, and offshore licences in 1973.[iv]

Currently, only "full licence" banks are authorised to transact the whole range of domestic banking business under the Banking Act. By 1988, 25 of the 36 full licence banks had been granted Asian currency unit (ACU) licences to engage in the Asian Dollar Market.[v] An ACU is a separate section within a bank and deals only with claims denominated in non-Singapore currencies. It does not need to maintain minimum cash and liquidity reserve requirements. In contrast, the domestic banking business has to maintain a minimum cash balance and a liquid assets ratio of 3 and 18 percent, respectively, of the bank's liabilities base.[vi]

All restricted licence banks and offshore licence banks had approval to operate in the Asian Dollar Market. Their operation in the domestic banking business is tightly controlled. For example, restricted licence banks are permitted to accept deposits in Singapore dollars from non-bank customers only if they amount to S$250,000 or more. They are allowed to lend Singapore dollars only to resident non-bank customers. Offshore licence banks cannot accept deposits in Singapore dollars from resident non-bank customers and can only lend Singapore dollars to resident non-bank customers up to a total of S$500 million.[vii] As a result, such banks have to obtain their Singapore dollar funding from the inter-bank market or from engaging in Singapore-dollar swaps.

Until 1997, the banking sector in Singapore had been regulated rather stringently. The MAS gave the highest priority to protecting the soundness and resilience of Singapore's financial system and the interests of depositors and investors. Hence, every effort was taken to minimise risks, banking failures and financial scandals so as not to undermine Singapore's market credibility. As a result, it was frequently mentioned that in Hong Kong anything not expressly forbidden is permitted, whereas in Singapore anything not expressly permitted is forbidden.

2.2 Restrictions on the Singapore Dollar

Singapore has traditionally imposed various kinds of restrictions on the use of the Singapore dollar. These controls can be broadly classified into two categories: (a) controls on bank lending in Singapore dollars, and (b) controls on Singapore dollar-denominated instruments and derivatives.

(a) Controls on bank lending in Singapore dollars

The control on bank lending in Singapore dollars was probably one of the most controversial financial regulations in Singapore. The most definitive statement on the MAS's policy on bank lending in Singapore dollars, conveyed to banks on November 1, 1983 (popularly known as MAS Regulation 621), read as follows:

"Banks should observe the Authority's policy of discouraging the internationalisation of the Singapore dollar. Specifically, banks should consult the Authority before considering Singapore dollar credit facilities exceeding S$5 million to non-residents, or to residents where the Singapore dollars are to be used outside Singapore. Banks managing syndicated loans, bond issues, or other financial papers exceeding S$5 million should do likewise. The terms "residents" or "non-

residents" include bank and non-bank customers. Details of such proposals should be submitted in writing to the Manager, Banking and Financial Institutions Department."

The problem with the above policy statement was that it was too general and had been subject to different interpretations by the financial community. For example, some banks preferred to obtain clearance from the MAS even if the amount to be lent out to a non-resident was less than S$5 million. Others preferred to avoid prior consultations with the MAS by structuring the loan amount to below the S$5 million limit. As Singapore dollar loans can also be obtained through the issuance of Singapore dollar securities, banks managing such securities were asked to observe the MAS's ruling as well.

In July 1992, MAS Regulation 621 was revised. The revised Regulation specified clearly those activities which banks could finance, for whatever amount in Singapore dollars, without seeking MAS approval (the "approved" category) and those which banks were banned from financing in Singapore dollars (the "banned" category). The approved activities were: (i) direct exports from and imports into Singapore; (ii) hedging by forward sales of Singapore dollar receipts from exports to Singapore; (iii) issue of performance bonds for economic activities in Singapore in favour of Singapore parties; and (iv) guarantee of payments arising from construction or other activities in Singapore. The banned activities were: (i) direct or portfolio investments outside Singapore by non-residents; (ii) third country trade by non-resident-controlled companies; (iii) non-resident subscription to equity in a Singapore company where the proceeds are used for take-overs or financial investments; and (iv) speculation in the local financial and property markets by non-residents. For those activities which were not specifically mentioned in this revised Regulation, banks were reminded that they should continue to consult the MAS. One such activity was direct investment abroad by residents.

This regulation has been defended on the ground that internationalisation of the Singapore dollar would render the conduct of monetary policy more difficult. However, the cost of maintaining such a policy is that the money and capital markets in Singapore would not be fully developed. Realising that the cost is high, the MAS has since 1988 embarked on a policy of gradually liberalising the use of the Singapore dollar. This issue will be discussed in the next section.

(b) Controls on Singapore dollar-denominated financial instruments and derivatives.

The government also kept a tight grip on the growth of Singapore dollar-denominated financial instruments and derivatives until recently. While some controls were imposed to discourage the internationalisation of the Singapore dollar, others were simply the direct consequences of the MAS's policy on bank lending in Singapore. Because of the MAS restrictions on bank lending in Singapore dollars to non-residents, the local currency and interest rate derivatives had not been fully developed. To ensure that the restrictions were not being circumvented through financial derivatives, the MAS had defined Singapore dollar credit facilities to cover a wide range of financial instruments, including foreign exchange swaps, currency swaps, interest rate swaps, and facilities incorporating options and forward rate agreements in Singapore dollars. This was because market players could always use these financial instruments to get around the MAS restrictions. For example, a firm or individual could attempt to borrow Singapore dollars indirectly by first borrowing US dollars and then doing a foreign exchange swap (which involves the buying of Singapore dollars spot using US dollars with the simultaneous selling of Singapore dollars forward). This would replicate, or synthesise, a Singapore dollar money market loan with a "lock-in" Singapore dollar interest rate. In order to abide by the letter and spirit of the MAS regulations, banks would normally scrutinise forward sales of Singapore dollars by clients to ensure that they were not part of a swap.

The stock market in Singapore was another victim of the MAS's policy on the non-internationalisation of the Singapore dollar. Until recently, all secondary listings of foreign stocks other than Malaysian stocks on the Stock Exchange of Singapore (SES) were denominated in non-

Singapore currencies because the government was determined to keep a tight control on the flow of funds in Singapore dollars. Malaysian stocks traded on the SES (which ceased trading after Malaysia declared exchange controls effective September 1, 1998) had all along been denominated in Singapore dollars. Probably because of their listing in Singapore dollars and their familiarity to Singapore investors, Malaysian stocks were much more heavily traded than other foreign stocks listed on the SES.

The development of derivatives markets involving Singapore dollar instruments also suffered because of a fear by the authorities that they might cause instability in the domestic financial markets. The Singapore International Monetary Exchange (SIMEX) had been reluctant, until recently, to introduce derivatives on Singapore-dollar instruments such as the Singapore stock index and Singapore-dollar interest rates. It seemed to be content with futures and options on non-Singapore dollar financial instruments such as the Eurodollar, Euroyen, and Nikkei stock index.

3. Financial Sector Reforms 1997 – 2000

1997 could be considered a watershed year in the development of Singapore as a financial centre. In that year, the MAS announced a new approach to financial-sector management in an effort to boost Singapore's status as a financial centre. The new approach emphasized the need for a "lighter touch", with the emphasis changing from regulation to supervision. Financial institutions were given more scope to innovate and take calculated risks. The motivation for the sea-change in policy was the realisation by the MAS that the rapid growth of Singapore as a financial centre could not be taken for granted. This was particularly so given the rapid changes in the financial industry world-wide. Falling regulatory barriers, advances in information technology, financial innovations, and a wave of mergers among financial institutions have moved the world closer to a global financial marketplace. A radical change in approach was deemed essential to quicken the pace of market development and innovation.

The sweeping financial reforms undertaken by the MAS over the period 1997 to 2000 encompassed: (a) supervisory and regulatory changes; (b) liberalising commercial banking; (c) redefining the prudential standards of local banks; (d) liberalising the Singapore dollar; (e) developing the equity and derivatives markets; (f) developing the fund management industry; and (g) developing the insurance industry.

(a) Supervisory and regulatory changes

The main thrusts of the financial reforms in Singapore were to create a more conducive regulatory environment and to actively promote the financial sector. On the regulatory front, the MAS shifted from a "one-size-fits-all" regulation to a risk-focused supervisory approach. The focus of supervision is on systematic risks rather than the risks of individual institutions or transactions. The tasks of the MAS are now devoted to monitoring and examining financial institutions for compliance with guidelines, and ensuring that they maintain adequate internal controls and risk management systems. This move towards performance-based regulation will provide greater leeway for stronger and better managed institutions.

The MAS is also shifting away from relying on extensive regulation to protect investors and customers. The new rule of the game is caveat emptor (or "let the buyer beware"). In return, the MAS will help investors make informed decisions by promoting adequate disclosure and greater transparency in the market. Among other things, banks are required to disclose details relating to their principal sources of income, loan loss provisions and off-balance sheet activities. They also need to disclose the aggregate amount of their non-performing loans as well as the market value of their investments and properties. Local banks are required to provide addition information on their exposures by geographical areas, industry groups and maturity bands. Better disclosure and market scrutiny should spur banks to operate more efficiently.

To further enhance corporate governance, all local banks have been instructed in May 1999 to appoint nominating committees within their boards. The purpose of the five-member nominating committee is to ensure that the most competent individuals are appointed to the board and key management positions. In addition, the committee must ensure that the board comprises a majority of Singapore citizens or permanent residents. MAS retained its existing powers under the Banking Act to approve appointments to the board and key positions, and vet all re-appointments. Local banks are also required to dispose of their non-core businesses (such as property development and hotel management) over a three-year period beginning mid-2001. By concentrating on their core business rather than operating as conglomerates, local banks are expected to build up the necessary expertise to compete globally and grow more rapidly as true financial institutions. Moreover, banking crises resulting from shocks in the non-core business of the banking sector can be averted.

The MAS has also taken on an additional task as promoter of the financial sector by setting up the Financial Sector Promotion Department (FPD) in April 1998. The aim of the FPD is to attract reputable financial market participants to Singapore, and to encourage existing players to expand their range of financial services conducted in Singapore. As the primary mission of the MAS is regulation, it is questionable whether it should also be in charge of promotion. The concern is that the MAS may be too cautious in promotion, especially when conflicts between these two functions arise.

(b) Liberalising commercial banking

In May 1999, the MAS introduced a programme to open up Singapore's commercial banking sector in response to the consolidation in the banking industry world-wide. The programme struck a delicate balance between acting on the imperatives of change and building up local banks. To achieve these two objectives, the MAS has embarked on a controlled pace of liberalisation over a period of five years.

The liberalisation programme kicked off in October 1999 with the creation of a new category of full licence bank known as the Qualifying Full Banks (QFBs), to distinguish them from the existing class of full licence foreign banks. Incumbent full licence foreign banks that were not awarded QFB status would retain their existing privileges. For a start, QFB licences were issued to 4 foreign banks - ABN Amro Bank NV, Banque Nationale de Paris, Citibank NA and Standard Chartered Bank.[viii] Each QFB was allowed to expand in up to 10 locations (branches and off-premise ATMs), of which up to 5 could be branches. QFBs which already had more than 5 branches were capped at their present number, but were allowed up to 5 off-premise ATMs. The MAS also allowed QFBs to share ATMs among themselves. **Table 2** shows the number of branches and ATMs operated by the local banks, while **Table 3** shows the potential number of branches and ATMs available to QFBs. It can be seen that the network of branches and ATMs of local banks continues to dwarf that of foreign banks even with the liberalisation of the domestic banking sector.

Table 2
Local Banks' Branches and ATMs

Local Banks	No. of Branches	No. of ATMs
Development Bank of Singapore	149	901
Overseas-Chinese Banking Corporation	44	326
United Overseas Bank	74	299
Overseas Union Bank	40	151
Keppel Capital Holdings	39	111
Total	346	1788

Source: The Business Times, May 27, 1999.

Table 3
Qualifying Full Banks' Potential Shared ATM Network

Qualifying Full Bank (QFB)	No. of Branches	No. of ATMs	Potential No. of Branches	Potential No. of ATMs
Standard Chartered	20	27	20	32
Citibank	3	19	5	26
ABN Amro	2	2	5	10
Banque Nationale de Paris	1	0	5	10
Total	26	48	35	78

Source : The Straits Times, January 20, 2000.

Other measures taken by the MAS to ease the entry barrier include increasing the number of restricted banks and lifting the 40 percent limit on foreign investors' total shareholding in local banks. This latter measure would make it easier for local banks to forge strategic partnerships with foreign banks, and to pay for overseas acquisitions with shares. The requirement to have a majority of Singapore citizens and permanent residents on the board should ensure that the control of local banks rests with individuals or groups who will act in a manner consistent with the national interest.

(c) Redefining the prudential standards of local banks

Singapore banks have since 1992 been required to maintain a risk-based capital adequacy ratio (CAR) of 12 percent. This is much higher than the 8 percent recommended by the Bank for International Settlements (BIS). Moreover, the MAS has also insisted that the entire 12 percent of CAR be Tier 1 capital (or equity). In contrast, the BIS recommends that only 4 percent of the 8 percent CAR needs to be Tier 1. The remainder can consist of lower-quality Tier 2 capital.

To reduce the costs of funds for local banks, the MAS refined the capital adequacy ratio (CAR) in November 1998. The CAR of 12 percent for Tier 1 capital was reduced to at least 10 percent for Tier 1 capital, while the remaining 2 percent may consist of Tier 2 capital. The definition of Tier 1 capital was also widened to include equity-like capital instruments. Tier 2 capital may comprise instruments such as perpetual cumulative preference shares and subordinated shares. According to the MAS, the adjustments are in line with international norms and do not represent a lowering of prudential standards.[ix]

(d) Liberalising the Singapore-dollar

In August 1998, the MAS further liberalised the use of the Singapore dollar by announcing that MAS Regulation 621 would be replaced with a new notice, MAS Regulation 757. This new regulation contained three key features. Firstly, Singapore-run companies, even if they were majority foreign-owned, could borrow Singapore dollars from local banks for bona fide overseas projects provided that the proceeds were converted into foreign currencies for use outside Singapore. Secondly, foreign companies would face less stringent requirements for listing their shares in the Singapore dollar on the local bourse (this issue will be taken up in the next sub-section). Thirdly, foreign entities could borrow Singapore dollars by issuing Singapore dollar bonds where the proceeds were to be used offshore. However, they must swap the local dollar proceeds into foreign currencies for use outside Singapore. Through the swap, Singapore dollar liabilities of the foreign entities would be transformed into foreign currency liabilities. The MAS ruling was aimed at controlling the size of local currency loans held by foreigners, and the development of an offshore market in the Singapore dollar.

Within two months of the easing of controls on the use of the Singapore dollar, the International Finance Corporation (IFC), the investment arm of the World Bank, obtained permission from the MAS to issue S$300 million worth of Singapore dollar-denominated bonds. This was shortly followed by local statutory boards, well-established foreign multinational corporations and other supra-nationals which quickly made their debut in the Singapore dollar bond market.

Despite the sudden flurry of issuance by both local and foreign borrowers, the Singapore dollar debt market remains in its infancy. Two major problems must be resolved before Singapore can become a regional hub for the issuing, arranging and trading of fixed income securities. First, Singapore has to develop a more liquid swaps market. Second, Singapore has to find ways to make the secondary market for trading bonds more liquid. Without a liquid swap market, foreign issuers of Singapore dollar debt securities would have to incur a high cost when swapping the proceeds, as is obligatory under MAS Regulation 757. To develop this market, the MAS has allowed offshore banks to engage in Singapore dollar swaps in respect of proceeds arising from the issue of Singapore dollar bonds managed or arranged by them.[x] It has also exempted banks from setting aside reserves for Singapore dollars received from swaps with non-bank financial institutions and corporations. To further develop secondary market liquidity, the MAS has announced that a Singapore Government bond futures contract may be launched towards the end of 2001.

(e) Developing the equity and derivatives markets

Although SES and SIMEX have done well in catering for the financing needs of different segments of the market, they are finding themselves in an increasingly globalised and competitive environment. To meet the new challenges, the two exchanges were forced to work together to become more competitive and offer a wider range of products, including Singapore dollar instruments.

On working together, the authorities decided to demutualise and merge the two exchanges into a single integrated and privately-held company known as the Singapore Exchange (SGX). The SGX was launched in December 1999 with two trading arms, SGX-ST (SGX-Securities Trading) and SGX-DT (SGX-Derivatives Trading). Demutualisation would reduce the potential conflict of interests between members, who are owners, and other users of the exchange. The merger should also benefit SES and SIMEX by aligning cash and derivatives business strategies, and increasing the financial capability to make heavy capital investments. To enhance the competitiveness of Singapore's capital markets, the SGX accelerated the freeing up of brokerage commissions. From 1 January 2000, brokerage commissions for large trades (above S$150,000) were fully negotiable, while the commissions on retail trades (below S$150,000) were lowered from 100 to 75 basis points. By October 2000, commissions became fully negotiable for all trades.

As for the offering of a wider range of products, MAS Regulation 757 of August 1998 had made it easier for foreign companies to list their shares in Singapore dollars on the local bourse. Under this new regulation, foreign firms with only 20 percent of their revenues, profits, or expenses attributable to Singapore could have such a listing. Previously, MAS allowed such firms to list Singapore dollar-denominated shares only if they had operational headquarters status, with at least 35 percent of their revenues, profits and expenses generated in Singapore. Because of these stringent requirements, only 2 of the 40 foreign companies listed on the SES were able to convert their foreign currency floats into Singapore-dollar listings.[xi] With the easing of the rules on the Singapore dollar, SIMEX quickly introduced the Singapore stock index futures contract in September 1998, followed by the 3-month Singapore dollar interest rate futures contract a year later. Financial institutions in Singapore also began to participate freely in Singapore dollar interest rate derivatives in the over-the-counter market.

(f) Developing the fund management industry

To encourage the growth of the fund management industry in Singapore, the authorities made a concerted effort to enlarge the pool of domestic funds available for fund management in Singapore. In February 1998, the Government of Singapore Investment Corporation (GIC) announced that it would place an additional S$25 billion over the following three years with fund managers who have offices in Singapore. In November 1998, the MAS made a similar announcement although the sum promised was only S$10 billion. The Central Provident Fund (CPF), which operates a compulsory savings scheme for all workers, also liberalised its rules to allow more funds to flow into CPF-approved unit trusts. These efforts helped the fund management industry in Singapore to grow from S$150.6 billion in 1998 to S$276 billion in 2000, a phenomenal increase of some 84 percent over a two-year period.

(g) Developing the insurance industry

Singapore's insurance industry, which has lagged international developments for many years, was not spared the "wind of liberalisation" in Singapore. In March 2000, the MAS liberalised entry into the direct life and general insurance industries (effectively closed since 1990 and 1984 respectively) and adopted an open entry policy for insurance brokers. To encourage more "captive" insurers to come to Singapore, it has reduced the paid-up capital for such insurers from $1 million to S$400,000.[xii] It also abolished the 49 percent limit on foreign shareholdings of locally-owned direct insurers to enable local insurance companies to merge and form strategic alliances with foreign players. While promoting greater competition in the insurance industry, the MAS, at the same time, raised the standards of corporate governance and market conduct to protect policyholders.

Going forward, the insurance industry in Singapore will be facing several new challenges. One is the development of new distribution channels in addition to the traditional, but costly, means of using insurance agents. The other is the development of new products to cater for the needs of an ageing population. Last, but not least, the industry has to ensure that the asset management capability, systems and reporting framework meet the highest international standards. By overcoming these challenges, it will be able not only to meet policyholders' expectations, but also to compete with unit trusts and other financial products. This will also have a bearing on the future of Singapore as the premier insurance hub in Asia.

4. Benefits and Risks of liberalisation

Any modern society would desire a financial system that is both stable and efficient. Financial system stability means establishing and maintaining a structure of financial institutions and markets having a reasonable level of risk. Efficiency means that the services provided to the public are at the least cost for a given level of quality. The explicit and implicit costs of regulation

imply that liberalisation to improve system efficiency are also likely to reduce system stability. The two objectives are often inconsistent, and compromises are frequently necessary in the undertaking of financial reforms.

4.1 Benefits

The potential benefits to Singapore from the liberalisation of its financial sector, particularly the opening up of its banking sector and the liberalisation of the Singapore dollar, include (a) a more efficient financial sector, (b) a deepening and widening of the Singapore financial markets, (c) the development of more complete markets, and (d) the reduction in transaction costs and gains in seigniorage.

(a) A More Efficient Financial Sector

Opening up the financial sector to foreign competition should allow consumers to obtain better and more appropriate services more cheaply, and put pressure on domestic financial firms to improve their productivity and services. It would also encourage financial firms to access new technologies and ideas to help them raise efficiency. The effects of greater competition have already been felt in Singapore's banking sector. One clear example is the recent mortgage rate war among the full licence banks in the home loan market.[xiii]

Being a small island-state, Singapore's comparative advantage lies with financial and business services rather than with manufacturing. Manufacturing is generally more land-intensive than financial and business services which tend to be more knowledge-based. Hence, the active promotion of the financial services by the MAS should make this sector grow much faster than the manufacturing sector. The latest policy changes clearly are part of a long-term, strategic move to transform Singapore into an important financial centre in Asia.

(b) Deepening and Widening of Singapore's Financial Markets

The liberalisation of the Singapore dollar should lead to a "deepening" of Singapore's financial markets because of the increasing flow of Singapore dollar funds. This should, in turn, stimulate the trading of Singapore dollars against other currencies. Although Singapore is the fourth largest foreign exchange trading centre in the world, with an average daily turnover of about US$140 billion, the share of Singapore-U.S. dollar transactions constitutes only about 7 percent.[xiv] The widening of Singapore's financial markets would arise when a broader range of Singapore-dollar instruments, including swaps and other derivatives, are traded without too much restriction.

(c) Development of More Complete Markets

The availability of a wider range of financial instruments in Singapore should provide investors with accessible hedges against market risk, broaden the information available to market participants, and contribute to the development of more complete markets. A complete market exists when the supply of instruments available is sufficient to satisfy the desires of investors. In contrast, an incomplete market implies an unfulfilled desire for a particular type of instrument by an investor. The liberalisation of the Singapore dollar would thus allow financial institutions or SGX to introduce Singapore dollar instruments to meet the unfulfilled desires of investors, whether those desires have to do with longer maturity Singapore dollar bonds or derivatives based on Singapore dollar instruments.

(d) Reduction in Transactions Costs and Gains in Seigniorage

Liberalisation of the Singapore dollar should make the local unit more attractive as a medium of exchange. If the Singapore dollar were to become more widely used as a medium of exchange, Singapore traders would have greater scope for settling their accounts in the domestic currency.

Thus, they would gain from a reduction in exchange rate risks and transaction costs because the need to hold working balances or to trade in a multitude of foreign currencies is diminished.

The Singapore dollar has the potential to play a more important role in regional trade. Figures from Malaysia and Thailand (in **Table 4**) show that the use of the Singapore dollar for trade settlement is only 4.4 percent of Malaysia's trade even though Singapore accounts for about 16.2 percent of Malaysia's trade. This suggests that only one quarter of Malaysia's trade with Singapore is invoiced in the Singapore dollar. The use of the Singapore dollar in Thailand's trade with Singapore is much less as it is used to settle only 0.7 percent of Thailand's trade. As Singapore accounts for some 9.2 percent of Thailand's trade, it implies that the Singapore dollar is only used for 10 percent of Thailand's trade with Singapore. Data is not available for Indonesia but anecdotal evidence suggests that the role of the Singapore dollar in Indonesia's trade with Singapore could be very large. This is not surprising as a substantial amount of Singapore's outward-investment is in the Indonesian islands of Batam and Bintan. If the Singapore dollar can also play a role as a store of value (or as a reserve currency), Singapore would reap the seigniorage gains from issuing domestic money to non-residents.

Table 4

Malaysia and Thailand:
Currency of Settlement of Foreign Trade, 1995-1996
(As percent of total settlement of foreign trade in goods)

	Malaysia		Thailand	
	1995	**1996**	**1995**	**1996**
US dollar	61.7	66.0	84.9	83.9
Japanese yen	8.2	6.8	7.2	8.2
Deutsche mark	3.2	2.8	2.2	2.4
Singapore dollar	4.4	3.5	0.7	0.7
Home currency	18.7	17.8	1.5	1.0
Pound sterling	1.2	1.0	0.8	0.9
Others	2.6	2.1	2.7	2.8

Source: Senivongs (1997)

4.2 Risks

While Singapore can gain by liberalising and deregulating its financial sector, there are also costs and risks involved. In Singapore, the main concerns are over the liberalisation in two areas: the banking industry and the Singapore dollar. There is less concern over the liberalisation in other areas, such as the insurance and fund management industries, probably because these industries have fewer linkages to monetary policy. For these industries, rules to ensure consumer protection rather than prudential regulation are probably more important. The remainder of this section examines the concerns about foreign bank entry into domestic banking and the liberalisation of the Singapore dollar.

4.2.1 Concerns about foreign bank entry

The fears about foreign banks range from concerns that they will service only select segments of the market to concerns that foreign banks will dominate the domestic market. Some (e.g. Vittas, 1991) have even argued that foreign banks lack the local commitment and contribute to capital flight. However, recent works by Levine (1996) and Claesens nad Glaessner (1998) have suggested that many of these claims are unsubstantiated or not directly linked to foreign bank

entry. The pertinent question is: Are these concerns justified in the case of Singapore?

There is some truth in the argument that full license foreign banks in Singapore have served mainly wealthy clients and well-established corporations. A market-based business strategy suggests that foreign banks will attempt to carve out areas of comparative advantage. Without the extensive branch and ATM network of the local banks, full license foreign banks may have no choice but to rely on more sophisticated financial products and services to make themselves attractive. It just happens that clients using such products and services are usually households and firms which are sophisticated and wealthy. This is not a surprising or negative implication of foreign bank entry. Businesses attempt to find niche markets, and this manifestation of market-based competition will promote improvements in the provision of financial services to domestic clients.

However, foreign banks do not and will not dominate the domestic banking sector of Singapore. Currently, the local banks have 62 percent of total resident deposits (which include the ACU). The MAS has stated publicly that it will maintain the local banks' share at no less than 50 percent of total resident deposits.[xv] With the local banks still enjoying a comfortable margin of 12 percent above the floor level, foreign bank entry could be further liberalized. This floor of 50 percent would ameliorate the fear of domination while still permitting the benefits of foreign banks to flow into the domestic financial system.

There is no opportunity to test whether foreign banks will quickly retreat when faced with problems in the Singapore market or when faced with problems in their home market. Similarly, whether foreign banks contribute to capital flight has also not been tested in Singapore. This is probably due to two factors. One is that Singapore has enjoyed strong economic growth since 1973, interrupted only by the 1985 recession and the 1997 Asian financial crisis. The other is the adoption of sound and consistent macroeconomic policies in Singapore which ensure that its investment climate remains attractive. At any rate, all banks in Singapore are so well-supervised by the MAS that it would be rather difficult for them to facilitate capital outflow from Singapore.

4.2.2 Concerns about liberalisation of the Singapore dollar

While substantial benefits can be reaped from liberalising the use of the Singapore dollar, the build-up of a sizeable stock of Singapore dollar-denominated assets in portfolios of international investors entails the potential for a destabilisation of the exchange rate. Attempts to offload these holdings can put pressure on the exchange rate. Moreover, the accessibility of derivatives on Singapore dollar-denominated instruments like the local stock index futures could provide speculators with the extra ammunition to speculate on, or cause instability in, the local financial markets.

Three pertinent questions that arise are: How serious would be the increase in financial instability from further liberalisation? Is Singapore able to cope with such instability? Will the benefits from a more liberal use of the Singapore dollar outweigh the costs in terms of greater financial instability and a loss of policy autonomy?

Singapore cannot really control the international use of the Singapore dollar. The Singapore dollar will be used by non-residents as long as it can serve as a unit of account, a medium of exchange, and a store of value. However, it is absolutely out of the question that the Singapore dollar could ever assume an international role beyond the Southeast Asian region. Singapore does not possess the economic weight and a well-developed domestic financial market to make its currency attractive enough to be used internationally, even though there is confidence in its political stability and the value of its currency. With only a limited role for the Singapore dollar, the costs (and hence the benefits) of liberalisation appear to be quite limited, with probably only a minimal rise in its exchange rate volatility. Even if liberalising the use of Singapore dollars were to increase exchange rate volatility, traders and investors would quickly learn to hedge their

positions and would have a wide range of instruments with which to do so.

Although the MAS attempts to minimise Singapore dollar loans to non-residents through the control of bank lending to non-residents and the mandatory swaps imposed on foreign issuers of Singapore dollar bonds, it does not discourage them from accumulating Singapore dollar assets.[xvi] As Singapore is an important financial and trading centre as well as a host-country for many multinational companies, the amount of Singapore dollar deposits accumulated by non-residents is substantial. In December 2000, non-residents had amassed some S$ 91.9 billion worth of Singapore dollar deposits (or about one quarter of total liabilities) in local banks.[xvii] The unobstructed inflows and outflows of the non-residents' funds in Singapore dollar deposits could have qualitatively similar consequences for the exchange rate as increases or decreases in Singapore dollar loans. Despite the substantial holdings of Singapore dollar deposits by non-residents, Singapore was able to fend off speculative attacks on its currency in September 1985 and during the recent Asian currency crisis. Whether the Singapore dollar would yield to currency speculators had there been no control on bank lending to non-residents and no Plaza Accord in September 1985 to bring down the US dollar is an open question.[xviii]

The other important issue is whether a liberal use of the Singapore dollar would pose problems for exchange rate management in Singapore. The answer depends partly on whether currency attacks are associated with weak economic fundamentals (Krugman, 1979) or self-fulfilling speculation. (Obstfeld, 1986). Those who believe that speculation is self-fulfilling view the exchange rate as intrinsically unstable and vulnerable to speculative attacks even if the authorities do all the right things. They tend to resist any liberalisation measures which might make it harder for the authorities to manage the exchange rate. On the other hand, those who hold the view that currency attacks are due to weak fundamentals tend to take a positive view of speculation. According to them, the way to avoid currency crises is to adopt sound fiscal and monetary policies which make the commitment to the exchange rate objective credible. With Singapore's sound macro-economic management, high savings and strong reserve position, the MAS should be well-placed to minimise exchange rate volatility. In an apparent support of sound fundamentals, the IMF chief, Michel Camdessus, made the famous remark: "I have never seen a speculative attack when a macro-economy is strong and government policies are sound".[xix] Indeed, what the Asian financial crisis has shown is that the relative stability of the Singapore dollar was due to Singapore's strong economic fundamentals.

Another interesting debate is over the effects on the domestic financial markets from the introduction of Singapore dollar-denominated derivatives. From a theoretical standpoint, there is no sound arguments evidencing a destabilising effect of derivatives on the spot market, provided the futures and options markets are sufficiently liquid and efficient. The arguments attributing a destabilising effect on the spot market to derivatives highlight the role of speculators who are attracted to the low costs and high leverage trading available in the derivatives markets. But rational speculators who buy undervalued assets and sell overvalued assets will draw prices towards levels consistent with fundamentals thereby reducing volatility (Friedman, 1953). The misinformed speculators looking for easy profits and moving prices away from levels consistent with fundamentals will generally incur losses and will eventually leave the market. Whether derivatives are stabilising or not is an empirical issue. Indeed, numerous empirical papers have addressed the issue for a wide range of futures and options contracts. However, these studies do not generally support the proposition that the introduction of futures and options has increased volatility on the related spot market (See **Table 5**).

Table 5

Empirical Research on the Effect of Derivatives On Spot Market Volatility

	Period Analysed	Spot Instrument Analysed	Effect In Terms of Volatility
Figlewski (1981)	1975-79	GNMA(USA)	Increase
Bortz (1984)	1975-82	T-Bond (USA)	Moderate Decrease
Moriati and Tosini (1985)	1975-83	GNMA (USA)	No Effect
Simpson and Ireland (1985)	1973-85	T-Bills (USA)	Initial Decrease, Subsequent Increase
Edwards (1988)	1973-87	S&P Index	Decrease
		Value Index	Decrease
		T-bills (USA)	Decrease
		Eurodollar deposit	Decrease
Baldauf and Santoni (1991)	1975-89	S&P Index	No Effect
Hodgson and Nicholls (1991)	1981-87	Australian Stock Index	No Effect
Lee and Ohk (1992)	1979-85	NYSE Index	No Effect
	1983-89	Tokyo Stock Index	No Effect
	1981-87	FT-SE 100 Index	No Effect
	1983-89	Hang Seng Index	No Effect
Robinson (1993)	1980-93	FT-SE All Index	Decrease
Ayuso and Nunez (1995)	1990-94	T-Bonds (Spain)	Decrease

Obviously, it would be useful to show how the purported benefits of liberalisation stack up against the costs of exchange rate instability and possible loss of monetary control from a wider use of the Singapore dollar. Such a cost-benefit analysis is, however, beyond the scope of this paper. In their concept paper, Chan and Ngiam (1996) have shown that there are both costs and benefits from the liberalisation of bank lending in Singapore dollars to non-residents. According to their study, Singapore should weigh the costs against the benefits, and not forgo the latter just because it fears instability. They concluded that the optimal approach is a partial liberalisation of the MAS policy. This conclusion is broadly consistent with the current government's policy of allowing a gradual and controlled internationalisation of the Singapore dollar.

5. Lessons from Singapore

Despite the on-going Asian financial crisis, the MAS has undertaken major financial reforms with a series of strategic changes. Financial reforms, especially those relating to the liberalisation of the banking sector and the Singapore dollar, are especially sensitive. Despite the consternation in certain segments of the financial community, the MAS has remained steadfast in its belief that Singapore must press ahead with the necessary changes in order to become one of the major financial centres in the world. While it is too early to judge whether the reforms undertaken in the past few years have been successful, nothing so far has occurred that would support the fear that local financial institutions would lose their market shares to foreign competitors or that Singapore would lose control of its exchange rate management. Hence, the experience of Singapore may offer some useful lessons for other Asian economies that are in the process of deregulating their financial systems.

The first lesson is that financial sector reforms should be brought in voluntarily. Singapore could have rested on its laurels as its financial sector was in good shape even after the Asian financial crisis. Nevertheless, strategic changes were necessary if Singapore wanted to exploit the full potential of its financial sector and make it into the world league. In contrast, the crises-hit Asian economies of Indonesia, Thailand and Korea took to reforms unwillingly under compulsions by the IMF. The experiences of these countries have demonstrated that it is much harder to undertake financial reforms under adverse economic conditions. They are still struggling with the much-needed financial reforms despite several years having elapsed since they were hit by the crises.

The second lesson is that Asian economies should undertake financial reforms quickly and decisively. Obviously, special interest groups and rent seeking can prevent reforms from being adopted. Singapore is no exception as its local banks have all along resisted opening up the banking sector. If reforms must be carried out because they are widely recognised as useful and positive, the authorities might as well act fast and early. Another reason why the authorities should not procrastinate is that it takes a long time to implement reforms and see the full results of their efforts. Despite the aggressive efforts by Singapore to develop a wider range of financial instruments, the Singapore dollar bond and derivative markets are still small and illiquid.

The third lesson is that a "gradualist" (adopted by Singapore) rather than a "big bang" approach (pioneered by London in the mid-1980s) towards financial liberalisation may be the optimal approach for many Asian economies. This would allow their nascent financial institutions and markets to adjust and for their regulators to slow down or accelerate the pace of liberalisation as needed. Recognising that too fast a pace of banking liberalisation could cause disruptions to some local banks, the MAS decided to progressively open up the banking sector to foreign competition over a five-year period. Similarly, the Singapore dollar has been liberalised gradually to minimise the exchange rate instability.

Last, but not least, Singapore has shown that financial reforms undertaken in close collaboration between government and the industry produce highly effective results. In the formulation and implementation of financial reforms, the MAS has actively consulted the industry. Market practitioners are in the best position to help regulators keep abreast of latest developments in the industry. Constructive dialogues are essential to help regulators fine tune their policies and avoid costly mistakes. However, the relationship between the regulator and the regulated should be at arms length and not adversarial.

6. Conclusions

With Asian currencies in turmoil, the issue of financial sector reforms is especially delicate. While liberalising the financial sector may be painful to some market players, especially those who are relatively weak, it also confers substantial benefits on Singapore as a whole. After weighing the costs and benefits, the MAS recently liberalised the financial sector in the hope of transforming Singapore into one of the major financial centres of the world. However, financial sector reforms undertaken by Singapore are incremental and evolutionary, rather than dramatic or spectacular.

In the longer term, liberalising the financial sector should not only help Singapore to boost its financial stature, but also enable it to play a pivotal role in the economic reconstruction and rehabilitation of the region. A concern that has been frequently articulated in the aftermath of the Asian financial crisis is the excessive reliance of companies in the region on bank financing, as domestic bond markets are not well-developed. An important component of the reform package suggested by multilateral agencies, such as the World Bank, the Asian Development Bank and the IMF, is the development of the domestic bond market. Because of the smallness of its domestic market, Singapore should strive to develop as the centre not only for Singapore dollar bonds, but also for the issue and trading of regional currency bonds. Developing a strong Singapore dollar bond is the crucial first step that should set the ball rolling. Despite the substantial progress that has been made, Singapore has a long way to go as its dollar bond market is still small and inactive.

There is tremendous scope for Singapore to develop not only the bond market but also the derivatives market. Over the next decade or so, Asian governments will need to borrow huge sums of money to finance fiscal deficits to rebuild their ravaged economies as well as to restructure and re-capitalise their hard-hit financial institutions. Private companies in the region will demand a massive amount of funds to build their productive capacities which have been neglected during the Asian financial crisis. Having learnt the hard way from the crisis, these borrowers will increasingly turn to longer-term sources like the bond markets in order to better match longer-term investment outlays with longer-term capital market instruments. They are also expected to rely on financial derivatives to hedge their interest rate and exchange rate risks. Singapore should be well-poised to meet their needs provided that it is able to compete with other financial centres like Hong Kong and Tokyo. The gradual liberalisation of Singapore's financial sector is a step in the right direction and may be viewed as part of a longer-term strategic goal to make Singapore into the premier capital and derivatives market of the region.

REFERENCES

Ayuso, Juan, and Soledad Nunez (1995), "Do Financial Derivatives Destabilise the Spot Market? The Spanish Experience in the Government Debt Market", Economic Bulletin, **Banco de Espana**, April.

Baldauf, B and G.J. Santoni (1991), "Stock Price Volatility: Some Evidence from an Arch Model", **Journal of Futures Markets**, 11, pp.191-200.

Bank for International Settlements (1995), **Central Bank Survey of Foreign Exchange Market Activity**.

Bortz, G.A. (1984), "Does the Treasury Bond Futures Market Destabilize the Treasury Bond Cash Market", **Journal of Futures Markets**, 4, pp. 25-38.

Cassard, Marcel (1994), "The Role of Offshore Centers in International Financial Intermediation " **IMF Working Paper**, No. WP/94/107**.**

Chan, Kenneth S., and Kee-Jin Ngiam (1996), "Currency Speculation and the Optimum Control of Bank Lending in Singapore Dollar: A Case for Partial Liberalization", **IMF Working paper**, No.WP/96/95.

Chan, Kenneth S., and Kee-Jin Ngiam (1998), "Currency Crises and the Modified Currency Board System", **Pacific Economic Review**, Vol. 3, No. 3, pp.243-63.

Claessens, S. and T. Glaessner (1998), Internationalisation of Financial Services in Asia", mimeo, World Bank.

Edwards, F. (1988), " Does Futures Trading Increase Stock Market Volatility?", **Financial Analysts Journal,** 44, pp. 63-70.

Figlewski, S. (1981), "GNMA Passthrough Securities Futures Trading and Volatility in the GNMA Market", **Journal of Finance**, 36, pp. 445-56.

Friedman, Milton (1953), "The Case for Flexible Exchange Rates", In **Essays in Positive Economics**, University of Chicago Press, pp.157-203.

Hodgson, A. and D. Nicholls (1991), "The Impact of Index Futures Trading on Australian Sharemarket Volatility", **Journal of Business and Financial Accounting**, 18, pp. 27-51..

Krugman, Paul (1979), "A Model of Balance of Payments Crises", **Journal of Money, Credit and Banking**, 11, pp. 311-32.

Lee, S.B. and K.Y. Ohk (1992), "Does Futures Trading Increase Stock Market Volatility?", The U.S., Japan, the U.K. and Hong Kong", **Review of Futures Markets**, pp. 727-53.

Levine, R. (1996), "Foreign Banks, Financial Development and Economic Growth" in International Financial Markets, Barfield, C.E. (ed.), American Enterprise Institute, pp. 224-54.

Monetary Authority of Singapore, **Annual Reports**, various issues.

Moriati, E.J. and P.A. Tosini (1985), "Futures Trading and the Price Volatility of GNMA Certificates: Further Evidence", **Journal of Futures Markets**, 5, pp.633-41.

Ngiam, Kee Jin (1996), "Singapore as a Financial Center: New Developments, Challenges, and Prospects," in Financial Deregulation and Integration in East Asia, ed. Ito, Takatoshi and Anne O. Krueger, University of Chicago Press, pp.359-83.

Ngiam, Kee Jin (1998), "Liberalising the Singapore Dollar During the Asian Currency Crisis: A Sound Move?", **Malaysian Journal of Economic Studies**, 35, pp.15-28.

Obstfeld, Maurice (1986), "Rational and Self-fulfilling Balance of Payments Crises", **American Economic Review**, 76, pp. 72-81.

Robinson, G. (1993), The Effect of Futures Trading on Cash Market Volatility: Evidence from the London Stock Exchange", Bank of England: Working paper Series No. 19.

Ross, S. (1976), "Options and Efficiency", **Quarterly Journal of Economics**, 90, pp. 75-89.

Senivongs, Chirathep (1997), "Currency Internationalisation in Selected ASEAN Countries", Unpublished Monograph.

Simpson, W.G. and T.C. Ireland (1985), "The Impact of Financial Futures on the Cash Market for Treasury Bills", **Journal of Financial and Quantitative Analysis**, 20, pp. 371-79.

The Straits Times, various issues.

Vittas, D. (1991), "Measuring Commercial Bank Efficiency: Use and Misuse of Bank Operating Ratios", Policy Research Working Paper No. 806, World Bank.

ENDNOTES

[i] See "New Approach to Regulating and Developing Singapore's Financial Sector", a Speech delivered by the Chairman of MAS, BG Lee Hsien Loong on 4 November 1997.

[ii] Only the issue of currency is entrusted to a separate body, the Board of Commissioners of Currency of Singapore (BCCS).

[iii] The MAS has acknowledged, albeit belatedly, that its rules to discourage the internationalization of the Singapore dollar have constrained the growth of the bond market. See the Speech "Financial Sector Liberalization: Going Global" by BG Lee Hsien Loong, 3 April 2000.

[iv] Currently, there are 140 commercial banks of which 8 are local banks. All local banks have a full licence. Among the 132 foreign banks, 23 have full licences, 16 have restricted licences and 93 have offshore licences.

[v] The first ACU licence was granted to Bank of America as far back as 1968.

[vi] In addition, profits from the domestic banking business are taxed at the corporate tax rate, currently at 26 percent, while profits from the ACU are taxed at only 10 percent.

[vii] Qualifying offshore banks approved by the MAS may extend their Singapore-dollar loans of up to S$ 1 billion.

[viii] Before the introduction of QFBs, Citibank, NA and Standard Chartered Bank were full licence foreign banks, while ABN Amro Bank NV and Banque Nationale de Paris had only offshore licences.

[ix] See the Speech "Financial Sector Review: A Round-up and Next Steps" by BG Lee Hsien Loong, 27 November 1998.

[x] Qualifying offshore banks will also be allowed to engage in Singapore dollar swaps, without any restriction on the purpose of the swaps.

[xi] After foreign company listing rules were liberalised, U.S. dollar-denominated Osprey Maritime and GP Batteries managed to convert to local currency shares. See "More S$ listings with new MAS rules" in The Straits Times, August 14, 1998.

[xii] Captive insurers are set up by multinational corporations to underwrite in-house insurance for their affiliated companies.

[xiii] See, for example, "Why banks offer home loans at 'suicide' rates" in The Business Times, April 19, 2001.

[xiv] See "Singapore poised to be world's third-largest forex centre" in The Straits Times, 25 May 2001.

[xv] See the Speech "Liberalizing Commercial Banking and Upgrading Local Banks" by BG Lee Hsien Loong, 17 May 1999.

[xvi] These include Singapore dollar bank deposits, Singapore dollar bonds, as well as Singapore shares and properties.

[xvii] Monetary Authority of Singapore, Monthly Statistical Bulletin, February 2001, Vol. 22, No.2.

[xviii] See Chan and Ngiam (1998) for a discussion on how Singapore coped with currency crises.

[xix] See The Strait Times, March 17, 1998.

FINANCIAL INTERMEDIATION AND ECONOMIC PERFORMANCE: THE KOREAN EXPERIENCE

Professor Joon-Ho Hahm
Graduate School of International Studies
Yonsei University

1. Motivation and Questions

This paper studies the linkage between financial structure and economic performance in Korea. Given that efficient financial system facilitates economic development through efficient allocation of resources, it is necessary to focus on the evolution of resource allocation mechanism to explore the linkage between finance and growth. While numerous factors affect actual evolution path of financial structure, in Korea, it is essential to understand the dynamic relationship among the government, finance and commerce, which has critically affected overall risk and performance of the economy.

Figure 1: GDP Growth Rate and Fixed Investment / GDP in Korea

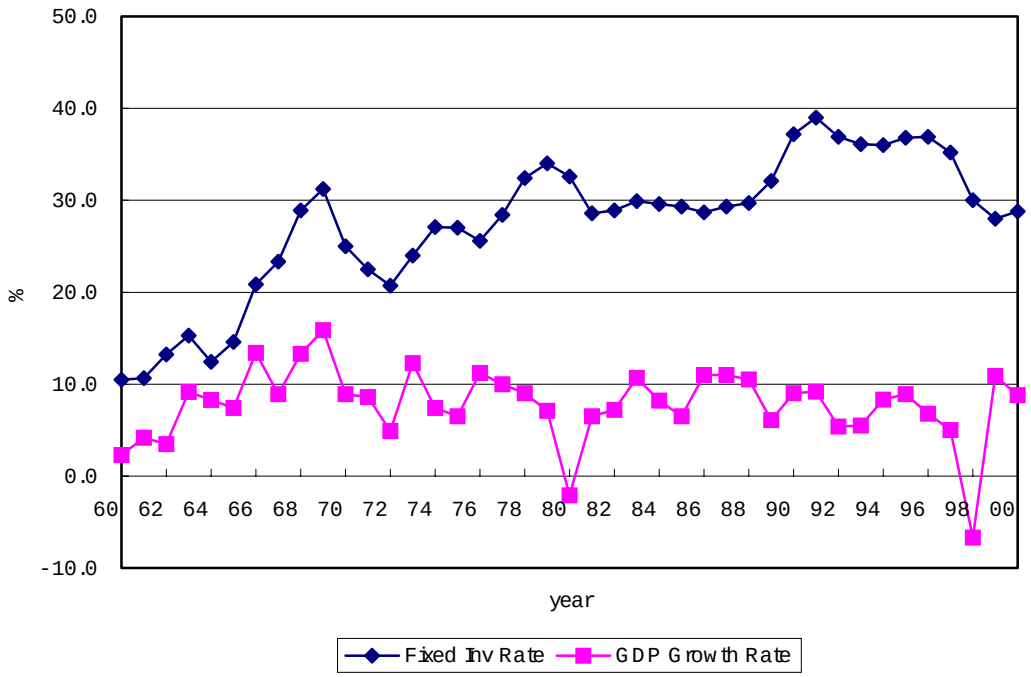


Figure 1 shows Korea's real GDP growth rate and the share of total fixed investment out of GDP from 1960 to 2000. Carefully looking at the figure, we can observe three distinctive periods of relatively strong investment growth – late 60s, late 70s and the 90s prior to the crisis. As we discuss below, the period of 1961 to 1980 corresponds to the period of nationalized banking system and hence, the first two investment booms were driven under the state-controlled financial system. There have been numerous studies on the role of the state-controlled finance in the development era of the Korean economy.[1] However, it is still poorly understood how the resource allocation mechanism has evolved throughout the recent period of financial liberalization. More interestingly, the nature and financing mechanism of the third investment spree observed in the 90s has not yet been clearly understood, which is the main focus of the present paper.

Given that the deterioration of corporate and financial sector balance sheets in the pre-crisis episode has provided a cause of the Korean economic crisis (Hahm and Mishkin (2000)), the present study focuses on the changing nature of credit flows to the corporate sector, mainly to large conglomerates known as *chaebol*, in characterizing the evolution of the financial structure in pre-crisis Korea. Specifically, throughout the paper, we try to provide answers to the following questions:

- What are the implications of the early attempts at financial liberalization in the 80s on the traditional risk partnership among the government, bank and chaebol?
- How can we characterize the evolution of corporate financing patterns as an endogenous response to the structural shift?
- Did the financial liberalization and increasing independence of c*haebol* in its financing and investment decisions contribute to the overall efficiency of credit allocation?
- More specifically, how was the investment spree in the 90s financed and how did it affect the Korean economy in terms of risk structure and corporate profitability?
- What factors led to the failure of financial liberalization policies in replacing the traditional state-controlled credit allocation mechanism with a more market-based system?

The plan of the paper is as follows. The next section briefly reviews the formation and evolution of traditional risk partnership among the government, bank and *chaebol* in early development stages of the 60s and 70s. Section 3 describes attempts at financial liberalization in the 80s and the evolution of corporate financing pattern resulted from the structural shift. Section 4 focuses on the unusual investment behavior in the 90s and discusses how it was financed and what the implications were on the efficiency and risk for the Korean economy. Section 5 discusses major factors that have led to the misallocation of resources and structural vulnerability. Finally section 6 summarizes and draws policy lessons.

2. State-Commerce Risk Partnership in the Development Era of the 60s and 70s

The tripartite risk partnership among the government, bank and *chaebol* in Korea has been formed from early 1960s, when the military government led by Park Chung Hee nationalized commercial banks in October 1961. The subsequent period of nationalized banking system can be divided into two sub-periods depending upon the priority and nature of the government development policies.

2.1. Export-led Economic Growth in the 60s and the 1972 Corporate Bail-outs

The first sub-period corresponds to the 1961–1972 period, which was characterized by export-led development policies. During this period, the military government set the export-led economic growth as a supreme policy priority, and used mobilization of domestic saving and its allocation to strategic export sectors as essential tools of development. The government strengthened its control over the financial system by nationalizing commercial banks in 1961, subordinating the central bank

[1] On the relationship between the role of finance and economic development in Korea, see Amsden (1989), Cho (1989), Lee (1992), Park (1993) and Cho and Kim (1997), among others.

to the government in 1962, and by establishing various specialized banks to handle policy loans. In 1965, the government raised nominal interest rate on savings deposit in order to attract private saving into the banking sector from informal financial sectors, which also contributed to the increase in the scope of government control over the financial system.

Table 1: Export Credits of Deposit Money Banks

(%)

	1961~65	1966~72	1973~81	1982~86	1987~91
Share of Export Loans out of total DMB Loans	4.5	7.6	13.3	10.2	3.1
Interest Rate on Export Loans (A)	9.3	6.1	9.7	10.0	10~11.0
Interest Rate on General Loans (B)	18.2	23.2	17.3	10~11.5	10~11.5
(B)–(A)	8.9	17.1	7.6	0~1.5	0~0.5

Source: Bank of Korea, Economic Statistics Yearbook, various issues; re-quoted from *Financial Reform in Korea*, Presidential Commission for Financial Reform, 1997

The credit policies in this export-led growth period were characterized by the extensive use of export credit programs to finance strategic export industries. Loans were almost automatically extended to the export industries by commercial banks and the Bank of Korea (BOK) at heavily subsidized interest rates. As can be seen in Table 1, the interest rate differential between subsidized export loans and general loans reached a level of 17 % point on average during the 1966-72 period. The export credit programs were designed and implemented by close consultation with major exporters, and the government explicitly linked export performance with their access to this subsidized credit.

The first sub-period ended up with a major financial debacle, the August 3rd Presidential Emergency Decree of 1972, which was designed to bail out heavily debt-ridden corporate sectors. The burst of investment booms developed in the second half of the 1960s and the tight monetary policy and devaluation imposed to cope with a large current account deficit resulted in the bankruptcies of foreign debt ridden corporate firms and piling up of non-performing loans. To cope with the corporate debt crisis, the government imposed a moratorium on debt services to curb market lenders and rescheduled bank loans at substantially reduced interest rates.[2]

The August 3rd emergency measure deeply affected the Korean economy. As argued by Cho and Kim (1997), the fact that the corporate sector was bailed out at the expense of private curb lenders and bank depositors gave an important signal to the market that the government was in fact sharing major risks of the corporate sector. The materialization of the implicit insurance significantly aggravated moral hazard subsequently as the management of rescued firms and institutions were rarely punished.

2.2. The Heavy and Chemical Industry Drive in the 1973-79 Period

The second sub-period in the development era of the Korean economy corresponds to the 1973-79 period, which was characterized by more stringent interest rate controls and selective credit policies for heavy and chemical industries (HCI). From 1973 the government adopted policies promoting HCIs which required a large amount of long-term financing, and strengthened directed credit

[2] All curb market loans and approximately 30% of short-term bank loans were swapped into long-term loans with interest rate cap of 16.2%, when the curb market rates were over 40%. (Kim (1990))

programs to support the HCI drive. The government established National Investment Fund in 1974 to mobilize necessary long-term financial resources, and the BOK expanded its rediscounts and enacted loan guidance to facilitate more commercial bank loans to the HCIs. Table 2 shows the imbalances in the resource allocation during the peak years of the HCI drive. While the share of HCIs in total manufacturing value added was less than 50% in 1978 the industry received nearly 60% of total bank credits, and more than 80% of all manufacturing facility investment was undertaken in the heavy and chemical industries.

Table 2: Resource Allocation during the HCI Drive

(%)

Share of Heavy & Chemical Industries in Total Manufacturing	1976	1977	1978
Value Added	46.8	48.5	48.8
Bank Credit (DMB & KDB)	54.2	56.4	59.5
Facility Investment	74.2	75.4	82.5

Source: Re-quoted from Nam (1984)

The HCI drive and the reversion to low interest rate policies reinforced the government-*chaebol* risk sharing scheme. The policy loans and credit controls may have contributed to the rapid industrialization by assuring private firms to undertake risky investments with positive externalities. However, the government partnership also raised problems of moral hazard for *chaebols* and financial institutions. Firms became increasingly dependent upon funds with subsidized interest rates and their financial structure deteriorated. Commercial banks neglected credit evaluation and monitoring, and consequently, the non-performing loans increased substantially.

Another important feature of the financial development in this period is the formation of formal non-bank financial sectors. In a form of institutional reform in the wake of the August 3rd decree, Investment and Finance Company Act and Mutual Savings and Finance Company Act were legislated to absorb informal curb market lenders. Also the Merchant Banking Corporation Act was legislated in 1975 to expedite foreign capital inflows. Note that the government encouraged establishment of non-bank financial intermediaries (NBFIs) and lenient regulations were applied in order to absorb informal financial sectors into formal financial system and partially to compensate for the losses incurred by the informal sector under the 1972 emergency measure.

3. Evolution of Bank Credit Flows and Corporate Financing Pattern in 1980-1993

Notwithstanding its contribution to industrialization, the extensive use of credit restriction as a primary tool of development resulted in a distorted financial system. Recognition of the problems associated with the state-controlled development policies such as the over-capacity in the heavy and chemical industries and the unbalanced growth of large firms relative to small and medium-sized enterprises (SMEs) led the government to adjust its financial policy toward less credit controls and liberalization of the repressed financial sector.

First major attempt toward financial liberalization was the re-privatization of commercial banks from 1981. The negative experience in the 1950s led the government to maintain the principle of separation between commerce and finance in privatizing commercial banks.[3] The separation of

[3] The Banking Act amended in December 1982 introduced an explicit ownership regulation that any individual or corporate cannot own more than 8% of total shares issued.

commerce from the banking system was to insure financial soundness and avoid possible conflict of interests, however, it also left a possibility that the government continue to influence corporate investment decisions through commercial banks. Indeed, while the bank ownership was transferred to the hands of private sector, the practice of government intervention and indirect controls over bank credit allocation continued.

The government also strengthened bank credit control system in the 80s.[4] The credit control system was formally incorporated into the revised Banking Act in 1982, and the Office of Bank Supervision was vested with the authority to set a ceiling on the share of *chaebols* in any bank's loans. The bank credit controls were mainly to stem concentration of economic power and to ensure access of SMEs to bank credits. Bank credits to *chaebol* were tightly controlled to ameliorate the problem of loan concentration, and in 1987, the basket credit control system was introduced to directly limit the shares of bank loans to the 30 largest *chaebols*. Note that the shift in the government policy and regulatory environment implied that the traditional bank-*chaebol* relationship was also changing in this period. The structural shift in the 80s indeed brought about quite substantial changes in the pattern of bank credit flows and corporate financing.

First, the availability of bank credits for *chaebol* was gradually limited as the government redirected policy priorities and strengthened bank credit control system. Table 3 indicates that throughout the late 80s and early 90s SMEs received increasing share of commercial bank loans while *chaebol* received decreasing shares. Note that both the basket control limits and actual shares of top 5 *chaebol* in bank loans dropped substantially in 1989, indicating that *chaebols* increasingly needed alternative sources of financing.

Table 3: Share of Deposit Money Bank Loans to SMEs and *Chaebols*

(%)

Loan Shares	1988	1989	1990	1991
SMEs	48.1	50.1	55.5	56.8
Top 30 *Chaebols*	23.7	20.7	19.8	20.4
Top 5 *Chaebols* (Basket Limit)	12.7 (15.2)	7.2 (8.6)	6.6 (7.2)	5.8 (5.8)

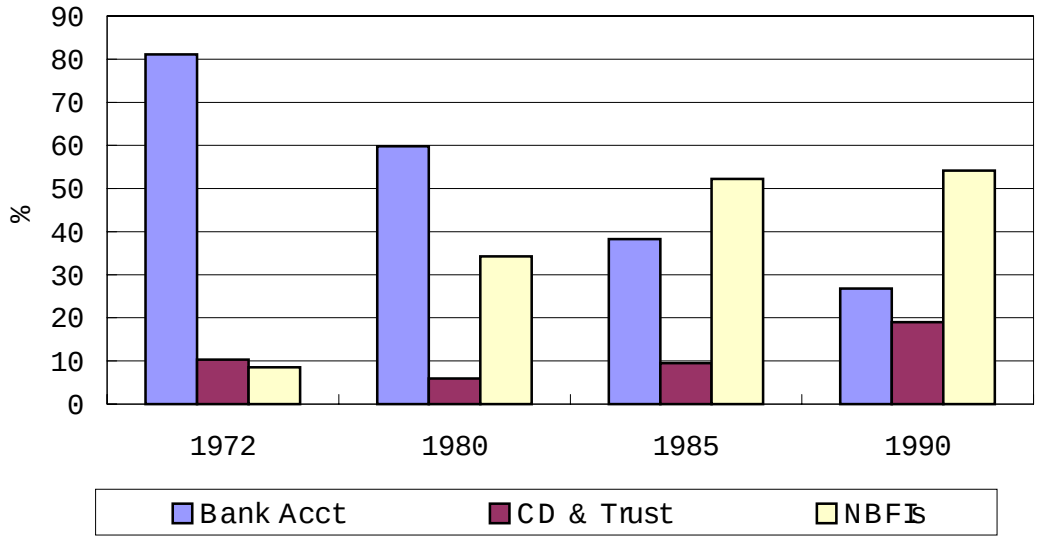
Source: Bank of Korea, Office of Bank Supervision and Presidential Commission for Financial Reform (1997)

The second notable feature that can be observed in the 80s is the emergence of NBFIs as an increasingly important sector of the Korean financial system. Figure 2 shows the composition of non-securities financial saving in Korea. Even if we exclude certificate of deposit (CD) and money trust account of commercial banks from the NBFIs, the share of NBFIs increased rapidly and accounted for more than 50% of financial saving from mid 80s, while the share of commercial bank account decreased steadily from nearly 60% in 1980 to 26.8% in 1990. The emergence of the NBFIs and increasing ownership of them by *chaebol* imply that faced with tight control of bank credits, the NBFIs emerged as an important alternative financing source for *chaebol*.[5]

[4] The bank credit control system was initially introduced in 1974 to improve the capital structure of *chaebol* by encouraging them to use more direct financing. Public listing in the stock market was also encouraged to stem concentration of corporate ownership. These policies, however, were not actively enforced during the 70s. See Yoo and Lim (1999) for the detailed discussion of *chaebol* policies in Korea.

[5] Different from the banking sector, no outright ownership regulation was applied to the NBFIs. In the absence of transparent entry requirements, discretionary issuance of licenses on occasional basis resulted in the increasing ownership of NBFIs by *chaebols*. For instance, during the 1988-93 period, 22 new life insurance companies were established and many of them were owned by *chaebols*. Also from late 70s to

Figure 2: Composition of Financial Saving



Also during the 1980s, with the advances in financial liberalization, capital markets were deregulated substantially increasing the availability of direct financing for corporate firms. Table 4 shows trends in the composition of financial liabilities (in balances) in the corporate sector. Note again that borrowings from the NBFIs increased substantially during the 80s and the share exceeded borrowings from the banking sector by early 90s. Note also that the shares of commercial papers and corporate bonds outstanding were increasing substantially in the late 80s, which indicates that direct debt financing had become another important source of financing for the corporate sector by early 90s. Also note that during this early liberalization period the share of foreign borrowing decreased steadily.

Table 4: Composition of Financial Liabilities in Korean Corporate Sector (Based on balances)

(%)

	1970	1975	1980	1985	1990	1993
Borrowings from Financial Institutions	19.4	23.6	32.2	35.8	36.5	37.0
Banks	14.8	17.2	20.7	19.7	18.7	17.8
NBFIs	4.6	6.5	11.5	16.0	17.8	19.2
Securities Issued	37.5	23.1	21.3	27.2	35.9	39.0
CPs	0.0	0.6	2.0	2.6	4.8	5.3
Corporate Bonds	0.3	0.7	3.5	7.2	11.0	13.4
Stocks	37.2	21.7	15.0	16.4	18.3	16.5
Foreign Borrowings	10.5	15.3	15.0	9.4	5.5	4.1
Others	32.6	37.9	31.4	27.6	22.1	20.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Note: Others include government loans and trade credits among corporate firms.
Source: Bank of Korea, *Understanding of Flow of Funds in Korea*, 1994

mid 80s, 31 investment finance companies were established and 19 were owned by *chaebols*, and as for the securities companies, 11 were already owned by *chaebols* as of the end of 1981.

The overall evidence in this section indicates that initial attempts at financial liberalization during the 80s and early 90s implied a structural weakening of the traditional risk partnership between the government and *chaebol*. While the government retained controls over bank credit allocation by tightening credit regulations, corporate financing behavior also evolved in response to the structural shift, and the NBFIs and domestic capital markets emerged as important financing vehicles by early 1990s. This structural change implied that *chaebols* were gaining increasing degree of independence in their major investment decisions.

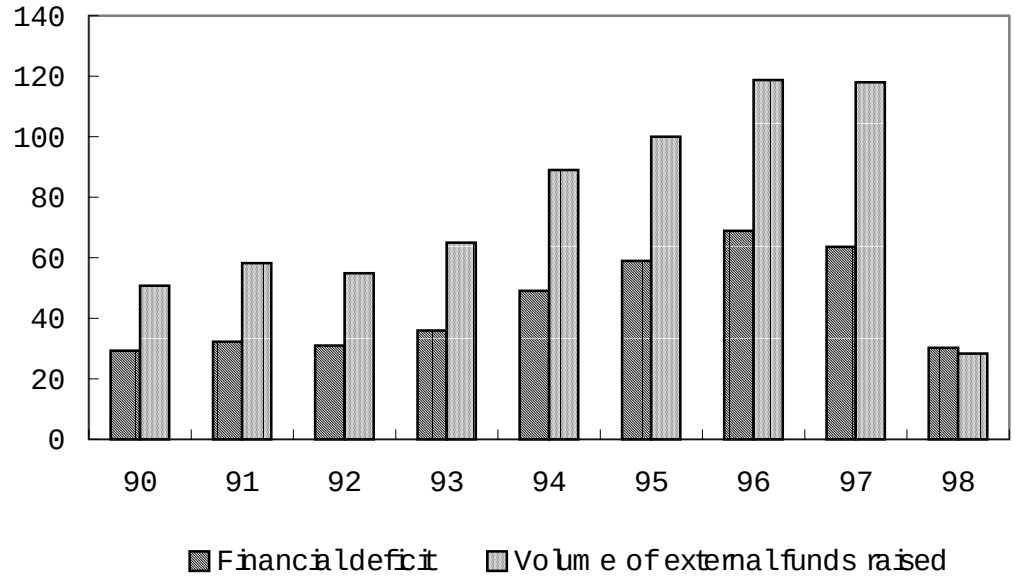
4. Investment Spree in the 90s and Corporate Performance

As emphasized in the introduction, an important objective of the present study is to understand the nature of unusual investment behavior in the 90s focusing on its implications on the risk and efficiency for the Korean economy. Figure 1 above indicates that there has been a major investment spree in the 90s, which lasted up to the onset of the 1997 financial crisis. The share of fixed investment out of GDP was above 35% during the period, which was unusually high from both the historical standard and international standard.[6]

The high investment rate itself could not be a problem as long as the capital invested is used in productive investment since it will contribute to future economic growth. However, the high investment rate may reflect misallocation of resources if the investment were driven by distorted incentives in the absence of appropriate monitoring. Note also that, depending upon the nature of its financing scheme, the investment boom could lead to major structural vulnerability for both the corporate sector and financial system.

Let us first investigate the financing aspect of the investment spree. Figure 3 shows the trend of corporate sector financial deficit and external funds raised during the 90s. It clearly indicates that the financial deficit has been mainly financed by external funds rather than internal funds. Table 5 shows more detailed sources of the external financing during the period.

Figure 3: Corporate Sector Financial Deficit and External Funds Raised
(Trillion won, in current prices)



[6] The average fixed investment ratio during the 1991-95 period was 36.7% in Korea, while the ratio was 15.7% in U.K, 16% in U.S. and 29.7% in Japan.

Table 5: Structure of Corporate Financing in Korea
(External financing, based on flows)

(%)

	1970	1980	1990	1991	1992	1993	1994	1995	1996
Indirect finance	39.7	36	40.9	41.8	36.3	32.8	44.5	31.8	31.3
Borrowing from banks	30.2	20.8	16.8	19.8	15.1	13.7	20.7	14.9	15.7
Borrowing from NBFIs	9.5	15.2	24.1	22.0	21.1	19.0	23.8	17.0	15.6
Direct finance	15.1	22.9	45.2	37.9	41.4	53.3	38.1	48.1	47.0
Commercial paper	0	5	4	-3.8	7.6	14.7	4.9	16.1	17.5
Corporate bonds	1.1	6.1	23	24.2	12.5	15.0	14.2	15.3	16.9
Stocks	13.9	10.9	14.2	15.1	15.9	16.5	14.8	14.4	11.3
Foreign borrowings	29.6	16.6	6.8	4.4	5	-2.3	4.9	8.4	10.2
Others	15.6	24.5	7.1	15.9	17.3	16.2	12.4	11.7	11.5
Total	100	100	100	100	100	100	100	100	100

Note: Others include government loans and trade credits among corporate firms.
Source: Bank of Korea, *Understanding of Flow of Funds in Korea*, 1994

Relative to the 70s and 80s, the financing pattern of corporate firms in the 90s can be characterized as follows. First, as emphasized before, the NBFIs continued to be an important source of indirect financing in this period. The share of NBFI borrowing has been consistently bigger than the share of bank borrowing. Second, direct financing became more important source of financing in the 90s and this was mainly due to the increasing shares of commercial paper and corporate bonds rather than equity financing. Note that the share of commercial paper increased sharply in 1995 and 96, which reflects that not only the corporate balance sheet structure deteriorated in the 90s due to the growing volume of external financing, the maturity structure of corporate debt also deteriorated. Indeed, Table 6 shows that both the mean debt-equity ratio and median short-term debt ratio increased steadily during the 90s. Finally, it is also worthwhile to note that the share of foreign borrowing increased rapidly in the 1994-96 period reflecting the acceleration of financial market opening, which indicates that the corporate sector became increasingly exposed to currency fluctuations.[7]

Table 6: Leverage and Short-term Debt Ratio of Korean Listed Firms

(%)

	1988	1989	1990	1991	1992	1993	1994	1995	1996
Debt-Equity Ratio (mean)	282	264	310	322	337	364	353	378	355
Short-term Debt Ratio (median)	44.3	52.8	50.2	50.2	55.8	56.3	58.6	59.6	58.5

Source: Claessens, et al. (2000)

Then how was the corporate sector performance in the 1990s? A closer look at the corporate sector profitability reveals that the *chaebol* and whole corporate sector suffered from decreasing

[7] Hahm and Mishkin (2000) indicated that the exposure of corporate sector to foreign exchange risk constitutes an important crisis propagation mechanism in emerging market countries. They found that at least 60% of corporate sector foreign currency debt in Korea was not hedged prior to the 1997 crisis. Hahm (2000) also found evidence that, indirectly through the corporate sector, the market values of financial institutions were significantly exposed to currency risk as well as interest rate risk in pre-crisis Korea.

profitability from early 1990s. Table 7 shows return on assets of the Korean corporate sector and indicates that the profitability picture was clearly deteriorating in the 90s relative to the late 80s. Note that the recovery of the return for top five *chaebols* in the 1993-95 period was mainly due to the semiconductor booms, and hence, the lower profitability in the 90s seems to be a structural decrease.

Table 7: Return on Assets of the Korean Corporate Sector

(%)

	1987-89	1990-92	1993-95	1996-97
All Firms	6.41	3.53	2.06	-0.73
Chaebols	3.93	2.41	1.77	-0.01
1-5 *chaebols*	4.42	2.38	2.62	0.95
6-10 *chaebols*	1.98	1.57	0.84	-0.70
11-30 *chaebols*	4.75	2.98	1.73	-0.29
Independent Firms	6.98	3.75	2.12	-0.88
Small & Medium Firms	6.52	2.68	0.69	-3.82

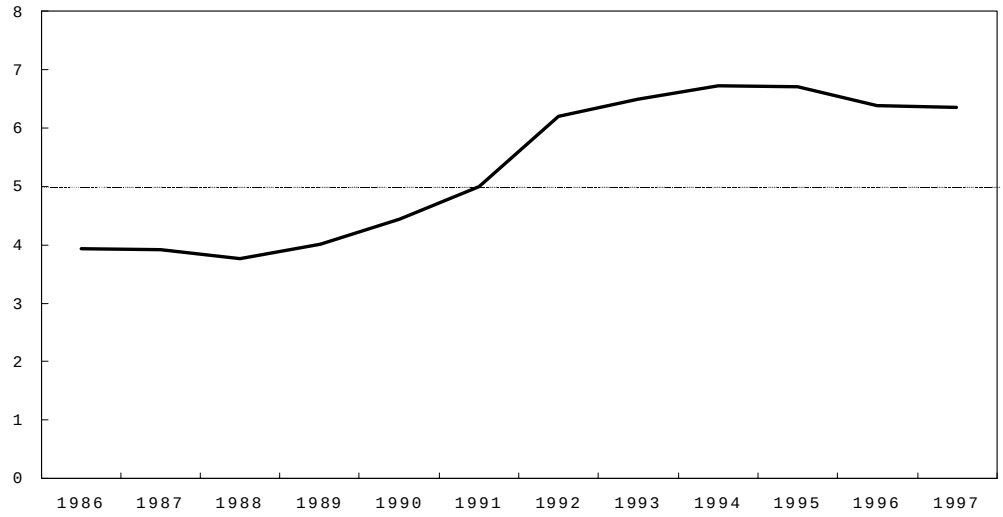
Source: Lee (2000)

The structural decrease in corporate sector profitability implies that the efficiency of investment undertaken may have been deteriorating in the 90s relative to the 80s. One commonly used aggregate measure of investment efficiency is the incremental capital output ratio (ICOR).[8] If capital allocations and investments were efficient, output would grow faster given the same level of investments, and hence, the ICOR should be lower. Figure 4 shows the trend in ICOR computed from previous 5 years' cumulative investments and output changes. Note that it increased to a level around 6 in 1992 and remained at that level since then. Although this is only an aggregate and imperfect measure of investment efficiency, combined with the deteriorating corporate sector profitability discussed above, it indicates that the efficiency of credit allocation may have structurally deteriorated in the 90s relative to the 70s and 80s.[9]

[8] The incremental capital output ratio is the ratio of investment to the change in output, usually measured as cumulative investments relative to the change in output over a period of 5 years or more. For instance, international financial institutions regard an ICOR on the order of 5 or less a 'good' standing, while lending is viewed as dangerous if a country's ICOR is above that level.

[9] For more direct evidence on the efficiency of credit allocations in pre-crisis Korea, see Borensztein and Lee (1998). Borensztein and Lee (1999) also argued that credit appears to have been reallocated in favor of more efficient firms after the 1997 crisis relative to the pre-crisis episode. For *chaebols*' investment behavior in the pre-crisis period, Hahn (1999) reported evidence that *chaebols* in fact preferred riskier businesses anticipating loss protection from the government.

Figure 4: The Incremental Capital-Out Ratio (ICOR)



5. Factors that led to Misallocation of Resources and Structural Vulnerability

Above discussions imply that the efficiency of credit allocation may have been deteriorating throughout the 90s especially for *chaebols*. Given that the investment spree in the 90s has not been driven by the state-controlled commercial banks as in previous investment drives of the 60s and 70s, an important question arises: what factors were behind the corporate financing pattern of the 90s, which led to structural vulnerability and misallocation of resources? We must clarify those factors to understand why financial markets failed to monitor investment behavior of the corporate sector, especially that of *chaebols*. Note again that notable features of the credit allocation in the 90s were first, the rising volume of NBFI intermediated credit flows through either direct borrowings or NBFI intermediated direct financing such as commercial papers, and second, the increasingly shorter maturity structure of corporate debts – both domestic and foreign. Those features are in fact deeply related with the nature of financial liberalization policies and reflect distorted incentives of market participants based upon implicit government guarantee.

5.1. Unbalanced Financial Liberalization and Increasing Vulnerabilities

As noted by Hahm and Mishkin (2000), financial liberalization did play an important role in increasing structural vulnerabilities of the financial system in Korea. In retrospect, the financial liberalization program in Korea revealed quite an unbalanced and asymmetric nature. The first asymmetry came from the unbalanced interest rate regulation across commercial bank and non-bank financial industries. NBFIs were allowed much greater freedom in their management of assets and liabilities and, most crucially, were permitted to apply higher interest rates on their deposits and loans. As shown in Table 8, relatively large deposit interest rate differentials across commercial banks and investment finance companies persisted until mid 90s. The deregulation of interest rates on non-bank financial products, while effectively controlling commercial bank deposit rates, contributed to the rapid expansion of NBFIs throughout the 80s and 90s.

The emergence of NBFIs magnified financial risks for the entire financial system because, first, the NBFIs were not adequately supervised as commercial banks, and second, as noted by Lee et al. (2000), interest rates on short-term NBFI intermediated instruments such as commercial paper were deregulated first. Rapidly growing commercial paper markets led to shortening of corporate debt maturity and duration mismatches for NBFIs. The unbalanced financial liberalization exposed corporate and financial sectors to substantial liquidity risks.

Table 8: Average Interest Rates on Deposits

(%)

	1991	1992	1993	1994	1995	1996	1997
Commercial Bank Time Deposits (6 mon-1 year) (A)	6.0	6.0	5.0	5.0	7.0-9.0	9.3	13.9
Investment Finance Co. Cash Management Account (180 days) (B)	15.0	15.5	11.9	12.9	13.3	11.8	12.6
(B) – (A)	9.0	9.5	6.9	7.9	4.3-6.3	2.5	-1.3

Note: Investment and finance companies were transformed to merchant banking corporations in 1994-96.
Source: Bank of Korea, Monthly Bulletin, various issues

The second asymmetry came from the unbalanced deregulation of capital accounts, which was accelerated in post 1993 period. In 1993, the Korean government expanded list of usage for which financial institutions could provide foreign currency denominated loans. Short-term foreign borrowing by financial institutions was allowed while the government maintained quantity restrictions on long-term foreign borrowing. The unbalanced nature of capital account liberalization also caused rapid increase in short-term external debt ratio and exposed both corporate and financial sectors to substantial foreign exchange liquidity risk.[10]

5.2. Dominance of Chaebol over NBFIs and the Legacy of Government Risk Partnership

Relatively high returns on the NBFIs' financial products apparently contributed to the expansion of non-bank financial industries. However, had the high returns also involved high risks, the expansion of NBFIs would not have been so dramatic. The second important factor was the fact that, at least in ex-ante sense, the risk associated with the NBFIs may not have been so high. The ex-ante low risk was deeply related with the dominance of *chaebols* over NBFIs and the implicit government insurance extended to *chaebols* and financial institutions.

While the influence of *chaebol* over NBFIs had been increasing from the 1980s, its dominance was culminated at the onset of the financial crisis. As of the end of 1998, 70 largest *chaebols* owned 140 NBFIs, which is approximately 30% of the whole NBFIs.[11] The dominance of *chaebol*, especially in the absence of effective supervisory and monitoring scheme, brought about serious conflict of interest problems. In fact many of the NBFIs fell down to private cash vault for *chaebol* with the outbreak of the financial crisis. Lenient supervisory standard and poor monitoring practices resulted in various incidents of illegal and unfair activities where funds of affiliated financial institutions were exploited for ailing subsidiaries.[12]

Note also that the legacy of government guarantee based upon that *chaebols* are too-big-to-fail has been pervasive in the financial market. As can be seen in Table 9, while both the profitability and capital adequacy of the NBFIs affiliated with *chaebol* were systematically lower compared to the

[10] The short-term external liability ratio in Korea increased from 58.8% in 1992 to 65.8% in 1994 and 65.7% in 1995.
[11] The total number of NBFIs at the end of 1997 was 487 excluding leasing companies.
[12] Kim (1999) provides evidence on the negative consequence resulted from the ownership of financial institutions by *chaebols*. Using micro data on corporate and financial firms from 1990 to 1997, Kim found that, controlling other variables, *chaebols* who owned NBFIs borrowed systematically more at lower borrowing costs compared to firms that did not own NBFIs. Kim interpreted this as evidence of unfair fund flows to affiliated companies.

independent NBFIs, the market share of *chaebol*-owned NBFIs increased steadily. This observation implies that not only credit allocations of *chaebol*-owned NBFIs were less efficient, but also that the incentive of financial market participants was severely distorted and there were no effective market monitoring mechanism.

Table 9: Market Share, ROA and Capital Adequacy of *Chaebol* Affiliated NBFIs

Market Share of Top 5 *Chaebol* affiliated NBFIs Out of Total NBFI Deposits	1997.3 18.6%	1998.3 29.6%
Return on Assets of NBFIs (accounting year 1997)	*Chaebol* affiliated -0.47	Independent -0.37
Capital Adequacy of NBFIs (1998.3) Merchant Banks BIS Capital Ratio Security Co. Net Operating Capital Ratio	*Chaebol* affiliated 5.4 164.7	Independent 6.3 234.2

Source: Kim and Lee (1999) and Kim (1999)

Then, why had the government allowed dominance of *chaebol* over NBFIs and pursued financial liberalization in such an unbalanced manner? It is possible that policy makers in the initial financial liberalization period had not been fully aware of the potential problems. However, the government in the 90s seemed to recognize the potential risks.[13] Notwithstanding the recognition, the government policy was often captured by the interest group. As noted above, faced with the shift in the traditional relationship, *chaebol* was looking for an alternative source of financing which was not subject to government control. As argued by Lee, et al. (2000), the unbalanced financial liberalization may have resulted from the endogenous response of *chaebol* who had actively lobbied to increase the scope of NBFIs and liberalize their related businesses first.

6. Policy Lessons and Concluding Remarks

Given that mismanagement of the paradigm shift from traditional state-controlled resource allocation mechanism to a more market-based system has caused structural vulnerability of the Korean economy, we can draw couple of policy lessons from the Korean experience.

In the management of paradigm transitions, three factors seem to be important. First, it is critical to break off the legacy of implicit government insurance extended in the development era. The distortion of incentives based on the expectation of future bailout causes significant misallocation of resources for the economy. In this regard, early resolution of insolvent corporate firms and financial institutions is critical. To minimize regulatory forbearance, it is also important to have a politically independent supervisory system and the accountability of supervisory authority needs to be strengthened.

[13] According to the 'New Economy' blueprint of the Kim Young Sam government released in July 1993, the government planned to introduce explicit ownership regulations to non-bank financial industries and tried to reinforce financial supervision to minimize potential negative consequences of the dominance of *chaebol*. Political pressures may have played a non-trivial role behind the fact that this policy plan was not subsequently implemented.

Second, the Korean case highlights the importance of strengthening financial supervision over the non-bank financial industries. As in commercial banking industry, prudential regulations such as prompt corrective action need to be introduced and strictly applied. To cope with the conflict of interest problem resulting from the ownership of NBFIs by corporate firms, it is also critical to strengthen governance scheme and monitoring mechanism for the NBFIs. Dynamic fit and proper test should be applied to large shareholders for their qualification and internal monitoring mechanism such as compliance and external director systems needs to be strengthened. If it takes time to upgrade supervisory and governance practices, temporary introduction of explicit ownership regulation should be considered.

Finally, financial liberalization needs to be designed carefully and implemented in a more orderly and systematic manner. It is important to have a transparent and clear liberalization agenda so that political influence could be minimized. The importance of strengthening prudential supervision while pursuing liberalization cannot be overstated. Financial institutions should be adequately capitalized by the global standard, and the risk management capability of both financial institutions and corporate firms needs to be upgraded with capital account liberalization. The risk implication of detailed liberalization measures should be carefully probed before actual implementation.

References

Amsden, Alice (1989), *Asia's Next Giant: South Korea and Late Industrialization*, Oxford University Press.

Borensztein, Eduardo and Jong-Wha Lee (1998), "Credit Allocation and Financial Crisis in Korea," International Monetary Fund Working Paper WP/99/20

Borensztein, Eduardo and Jong-Wha Lee (1999), "Was There a Credit Crunch or Credit Reallocation? Chaebols and Non-Chaebols in the Korean Financial Crisis," mimeo.

Cho, Yoon-Je (1989), "Finance and Development: The Korean Approach," *Oxford Review of Economic Policy*, Vol. 5, No. 4, Winter.

Cho, Yoon-Je and Joon-Kyung Kim (1997), *Credit Policies and the Industrialization of Korea*, Korea Development Institute Press.

Claessens, Stijn, Djankov, Simeon, and Larry H. P. Lang, (2000), "East Asian Corporations – Heroes or Villains?" World Bank Discussion Paper No. 409.

Hahm, Joon-Ho and Frederic S. Mishkin (2000), "The Korean Financial Crisis: an Asymmetric Information Perspective," *Emerging Markets Review*, Vol.1, pp. 21-52.

Hahm, Joon-Ho (2000), "Interest Rate and Exchange Rate Exposure of Korean Financial Institutions: Implications for the Propagation of Financial Crisis," mimeo, Yonsei University.

Hahn, Chin-Hee (1999), "Implicit Loss-Protection and the Investment Behavior of Korean *Chaebols*: An Empirical Analysis," *KDI Journal of Economic Policy*, Vol. 21, No. 1, pp. 3-52. (in Korean)

Kim, Chung-Yum (1990), *A Thirty-year History of Korean Economic Policy: A Memoir*, Seoul, Joong-ang-Ilbo-sa.

Kim, Joon-Kyung (1999), "Policy Directions to Improve Ownership Structure of Financial Institutions," mimeo, Korea Development Institute. (in Korean)

Kim, Se-Jin and Dong-Gull Lee (1999), "Agenda of Financial Restructuring," a paper presented at the Korea Money and Finance Association workshop on *Improving Software of Financial Industry*, June.

Lee, Byoungki (2000), *Han-Kook Gi-Up-Eui Too-Ja Haeng-Tae* (*Investment Patterns of Korean Corporate Firms)*, in Korean, Korea Economic Research Institute, December.

Lee, Chung H. (1992), "The Government, Financial System and Large Private Enterprise in the Economic Development of South Korea," *World Development*, Vol. 20, No. 2, pp. 187-97.

Lee, Chung H., Lee, Keun and Kangkoo Lee (2000), "*Chaebol*, Financial Liberalization, and Economic Crisis: Transformation of Quasi-Internal Organization in Korea," mimeo, University of Hawaii.

Nam, Sang-Woo (1984), "Korea's Stabilization Efforts since the Late 1970s," KDI Working Paper No. 8405, Korea Development Institute.

Park, Yung-Chul (1993), "The Role of Finance in Economic Development in South Korea and Taiwan," in Alberto Giovannini, ed., Finance and Development: Issues and Experience, Cambridge: Cambridge University Press, pp. 121-157.

Yoo, Seong Min and Youngjae Lim (1999), "Big Business in Korea: New Learning and Policy Issues," Korea Development Institute Working Paper No. 9901, February.

RECENT FINANCIAL SECTOR REFORMS IN AUSTRALIA

Mr Michael Willcock, Minister Counsellor
Australian Treasury

The regulatory framework for the Australian financial system, like that of many economies, has generally reflected evolutionary change over a number of years, interspersed by occasional episodes of more thorough-going change. This paper focuses on the changes that have taken place in Australia over the last five years, that is, since the Government established the Financial System Inquiry (FSI) in June 1996. In particular, it reviews —

- the FSI's mission and vision — what the Government asked the FSI to do, its conclusions about the forces driving change in the financial system and the regulatory philosophy developed from those conclusions;

- the changed institutional arrangements for regulating Australia's financial system recommended by the FSI;

- some further reforms currently being debated to the ways that financial intermediaries and market operators are licensed and conduct their business; and

- experience to date with these changes, including some tentative conclusions.

FSI's task

The FSI was charged with —

- analysing the forces driving changes in the Australian financial system since the early 1980s, in particular, technological development; and

- recommending regulatory arrangements that would 'best ensure an efficient, responsive, competitive and flexible financial system to underpin stronger economic performance, consistent with financial stability, prudence, integrity and fairness'.[1]

The assumption underlying the Government's commissioning of the FSI's work, and informing the FSI's recommendations, is that financial sector developments which enhance the efficiency, responsiveness, competitiveness and flexibility of the financial system will have the effect of boosting economic performance. The FSI considered that many of the benefits to the financial system arising from enhanced levels of efficiency, responsiveness, competitiveness and flexibility would be passed onto the system's users and, hence, ultimately be reflected in improved economic performance. For example, the FSI stated[2] that the 'efficiency of the financial system affects every business and individual in the nation', and that 'very large efficiency gains and cost savings …could be released from the existing system through improvements to the regulatory framework' and continuing structural change in the financial sector driven by technology and innovation. However, the FSI did not explicitly examine what this year's APEC Economic Outlook Special Report will examine, the relationship between financial sector development and economic growth. Rather, it considered the ways in which the financial sector's efficiency, responsiveness and so on could be improved.

[1] *Financial System Inquiry Final Report (FSI Report)*, AGPS, 1997, p vii
[2] ibid p 2

Drivers of change

The FSI identified some forces reshaping Australia's financial system, including —

- Changes in customer needs and profiles
    - The role of the financial system in the economy is deepening as households increase their financial asset holdings and their borrowings, reflecting increasing wealth and changing needs due to the ageing of the population and life cycle changes (greater job mobility, changes in family structures, shifts in work-leisure preferences).
    - Changing customer behaviour promotes a more competitive market — customers are better informed and more willing to try different products, weakening traditional supply relationships, while greater use of alternative technologies increase customer choices.
- Technological innovation
    - Innovations in processing, storing and communicating information revolutionise how financial activities are performed. These make it easier to access markets and products domestically and internationally, allowing a better match between customer needs and product features and reducing costs as there are lower entry barriers for new suppliers.
- Changing regulatory requirements and framework
    - The financial sector is also re-shaped as it reacts to other Government reforms, such as in the taxation system, retirement incomes policy, competition policy reforms which have led to the sale of government stakes in financial institutions and policy changes ('deregulation') which further integrate the Australian economy into the global marketplace.
- Structural changes in markets and industry sectors
    - Financial sector businesses, facing increased competition and seeking greater efficiency, re-structure their operations — cross subsidies of unprofitable activities (eg in the form of widespread bank branch networks) decrease, and alternative forms of service delivery are embraced.
    - Financial markets are becoming more globalised, especially at the wholesale level, but increasingly at the retail level too.
    - Customer demands, greater competition and increasing globalisation of markets, as well as innovations in product design and distribution, have blurred boundaries between different categories of products and different classes of institutional providers. While some providers focus on specialist services, others aim to provide a package of total financial services to any customer, anywhere. Conglomerates operating throughout the world present new customer choices and new regulatory challenges.
    - As capital markets have grown and become deeper, there has been a trend towards disintermediation, with a shift in the balance from intermediaries to markets. This trend has been reinforced by changes in demand for household savings. The retirement income needs of an ageing population mean that the

proportion of financial assets taking the form of market claims rather than products offered from the balance sheets of financial intermediaries has been increasing (as witnessed by the rate of growth of pension/superannuation funds and products).

Purposes of financial regulation

In light of these trends in the financial sector, the FSI developed a philosophy of financial regulation, considering why, where and how such regulation should be applied. It found that —

- The general case of regulation is founded in market failure, where efficient market outcomes are inhibited (such as the risk of systemic instability, or the problem of information asymmetry).

- Specialised financial system regulation is required to ensure market participants act with integrity and consumers are adequately protected in their financial dealings. Specialised regulation is required because of the complexity of financial products, the adverse consequences of breaching the financial promises these products give rise to, and the need for low-cost ways to resolve disputes.

- Some parts of the financial system need prudential regulation where the intensity of financial promises, and hence the risks of market failure, are greatest. But this type of regulation should not be imposed across the entire financial system, nor should prudential regulation extend to some form of government guarantee of any financial promises.

FSI recommendations

The FSI made 115 recommendations. Rather than looking at them in detail, it is sufficient to note their general direction.

The FSI estimated that the total cost to users of Australia's financial system in 1995 was approximately $41 billion.[3] Hence even a small 10 percent improvement in efficiency would translate into cost savings for the economy in excess of $4 billion per annum.

To achieve these savings in ways that are consistent with the regulatory philosophy it had identified, the FSI recommended a combination of measures for —

- More regulatory neutral treatment of competitors from different institutional sectors, to encourage those who are most efficient;

- Reducing barriers to entry, to promote more contestable markets;

- Having arrangements for the conduct of regulation which are more responsive to market changes, to facilitate innovation and new entry;

- Reforming conduct and disclosure rules, to lower costs and promote competition.

A fundamental change in the institutional arrangements of financial system regulation was proposed.

[3] ibid p 202

- Before FSI, Australia had several regulators focused on specific financial sector institutions, namely the Reserve Bank of Australia supervising the banking industry; a State-based prudential regulatory network to supervise mutually owned deposit takers such as credit unions; a separate regulator of insurance companies and superannuation (pension) funds; and a securities regulator which also administered companies regulation. Mirroring this institutional regulatory structure, similar products were subject of varying requirements depending on which institution was offering the product.

- The FSI recommended the creation of two new financial system regulators responsible for regulating financial sector participants on functional lines – a prudential regulator concerned with the financial safety of market participants, and a market integrity regulator concerned with market conduct and consumer protection issues in the financial system.

The Government accepted these recommended institutional changes.

- On 1 July 1998, it created the Australian Prudential Regulatory Authority (APRA) to undertake financial safety, or prudential, regulation of banks, insurance companies, superannuation funds and, from 1 July 1999, mutually owned entities such as friendly societies, building societies and credit unions which had previously been the subject of supervision by Australia's states.

- The Australian Securities and Investments Commission (ASIC) was also created on 1 July 1998 to regulate disclosure for securities and other retail financial products; supervise market conduct by financial service providers in their dealings with retail investors; supervise financial exchanges; administer companies regulation, including incorporation, governance, insolvency and liquidation, and takeovers; and provide consumer protection in the financial sector, by ensuring compliance with disclosure and conduct obligations to prevent fraud.[4]

A shorthand description of the difference in regulatory focus between these two regulators is that ASIC focuses on ensuring that those, especially retail investors, engaging in individual financial transactions can do so with confidence about the integrity of the providers' conduct and with adequate information to facilitate informed judgments; while APRA is concerned with the health of each prudentially regulated institution to ensure that it can meet its obligation to its customers collectively, and hence to the whole community.

The separation of these two regulatory tasks by the creation of APRA and ASIC was designed to ensure that each regulator focuses clearly on its primary objectives, and to ensure clearer lines of accountability for the performance of the regulatory task.

[4] The Payment System Board (PSB) was also established within the Reserve Bank of Australia to promote the safety, stability, greater competitiveness, and efficiency of the payments system.

Implementing FSI reforms

The FSI recommended a staged approach to the implementation of its 115 recommendations. What follows looks at a subset – the implementation of the recommendations relating to ASIC's regulatory task of market integrity and consumer protection in the financial sector, which has been undertaken under the Corporate Law Economic Reform Program.

Under that Program, the first set of changes to Australian corporate laws to implement some of the FSI recommendations were made in March 2000, revamping the rules applying to —

- takeovers – to increase the efficiency of the market for corporate control;
- fundraising – to improve the quality of disclosures and to reduce the cost of fundraising activities by SMEs; and
- accounting standards – to facilitate the harmonisation of Australian standards with international standards so as to help reduce the cost of cross-border investment and fundraising.A further stage in implementing FSI recommendations relating to corporate laws has been the development of the Financial Services Reform Bill. This Bill, which is currently before the Australian Parliament, will produce the following key reforms —

- a single, streamlined licensing and disclosure regime for all financial service providers;
- a harmonised licensing regime for financial markets and clearing and settlement facilities;
- a consistent and comparable disclosure regime for most financial products.

Wide coverage: These reforms will apply to all financial products —

- Securities and derivatives
- Managed investment products
- Life and general insurance
- Superannuation products
- Deposit accounts
- Non-cash payment facilities
- Foreign exchange transactions (other than pure money changing).

This wide coverage is required to remove unnecessary distinctions between financial products, which have lead to regulatory arbitrage in the financial services industry, increasing costs and consumer confusion.

Single licence: The proposed new single licensing regime for intermediaries will replace the existing multiple regulatory systems, including those for securities dealers and investment advisers, life and general insurance agents and brokers, futures brokers and foreign exchange dealers.

Licensees and their representatives will be subject to a harmonised set of conduct and disclosure obligations in their dealings with retail investors. These obligations include —

- Suitability requirement for advice to retail clients, requiring advisers to ensure that their advice is suitable to the needs and circumstances of their clients.

- Disclosure via Financial Services Guide (FSG) & Statement of Advice (SOA) which must detail information about, in the case of the FSG, the nature of the adviser's services offered and information about associations and relationships that might influence the provision of the adviser's service and, in the case of the SOA, provide in writing an account of the advice given and the basis for that advice.

- In particular, clients must have disclosed to them the fees, charges and commissions that they will be liable for in relation to the adviser's services.

Comparable product disclosure: The new product disclosure regime applying to all products other than securities will require directed disclosure of about 10 specified items, where they are relevant to the particular financial product. This will allow potential investors to compare the features, risk profile, costs and other aspects of individual products so that they are better placed to make an informed decision.

The reforms also provide for a single financial markets licensing regime to replace the seven different licences that can currently apply to the operators of markets for securities, futures and other financial products as well as a single regime for the licensing of clearing and settlement facilities.

These reforms are designed to deliver —

- Streamlined, more efficient regulation by reducing regulatory overlap and compliance costs, to the benefit of both the regulator and financial sector participants.

- Greater certainty and transparency, so that the regulator has a clearer focus on its regulatory task, and industry participants have a better understanding of how and why regulation applies to them.

- Increased competition in the provisions of financial services by breaking down the protective regulatory barriers to entry for existing participants and facilitating entry by new entrants.

- Increased consumer confidence, by providing a clearer framework for consumers' dealings with financial service providers, consistent disclosures in relation to financial products to promote better investor understanding and facilitate comparison, and a consistent framework of consumer protection.

Implementation of these reforms planned for later this year – will be another step in improving the efficiency and competitiveness of Australia's financial services sector, improving its flexibility and responsiveness to changing market structures and customer needs, and providing cheaper and better quality financial services.

Australia's experience with financial sector reforms

It is still too soon to draw firm lessons from the recent Australian experience with financial sector reform — most of the reforms have not been in place for long, and others are yet to be implemented.

- Pursuant to a recommendation of the FSI, the Government has established the Financial Sector Advisory Council, comprising senior financial industry executives, to monitor the financial sector under the new regulatory framework. The Advisory Council is due to report to the Government in 2003 on the outcomes of the reforms after assessing the efficiency and global competitiveness of the Australian financial sector, and the cost-effectiveness and relevance of the regulatory framework for the financial sector.

- The Advisory Council has developed a series of indicators to benchmark the performance of the financial sector and its regulatory framework so that it will have a sound basis for the report it is due to make to the Government.

While that work is continuing, some trends and tentative conclusions that can already be noted include the following.

- Financial sector reform takes time. It is now 5 years since the Government commissioned the FSI and, while many of its recommendations have been implemented, there are still some outstanding. This is not surprising given the complexity of the subject matter; the range and diversity of interest groups; the high stakes involved; and the competition for attention among issues on the public policy agenda.

- Financial sector reform is an iterative process. There is no final perfect state of regulatory arrangements to be attained. Those arrangements need to be finetuned from time to time as the financial sector that they apply to adapts and changes in response to emerging trends. Where the underlying realities of the financial sector drift far from the paradigm for which that sector's regulatory arrangements have been designed, finetuning may be insufficient, and fundamental reform of the regulation may be required to suit the new reality.

    - Because of the risks of getting it wrong, reform proposals need to be grounded in careful analysis. Nonetheless, *prima facie*, incremental change to existing systems and requirements is usually better than dramatic change.

    - Occasionally circumstances will prompt a re-examination of the adequacy of existing arrangements, such as with the recent appointment of a royal commission of inquiry following the collapse of a large Australian general insurer.

- It is important to have a clear understanding of the proper role of the regulatory framework. All financial products by their nature involve exposure to a degree of risk. An efficient financial market will manage, allocate and price this risk, rewarding those willing to bear it. Government regulation of financial markets cannot remove this risk, and will stifle the market's efficiency if it aims to do so. Rather, regulation must balance the objectives of maintaining efficient, dynamic and competitive financial markets with ensuring the continuing stability and integrity of the financial system.

    - A "one-size-fits-all" approach to regulation, involving externally prescribed rules and standards, is less and less relevant to today's dynamic and complex financial services industry. Regulation is more effective and responsive when it specifies the regulatory outcomes that participants are responsible for delivering, and ensures that the right incentives are in place for participants to discharge that responsibility.

- The efficacy of reforms – quantifying whether they are working properly and what difference they have made – is difficult to assess. Quantitative measures cannot provide the full picture. Indeed, it is very difficult, if not impossible, to make firm links between the introduction of particular reforms, such as the recent FSI reforms, and outcomes in the

financial sector, let alone the wider economy. This is because outcomes in the financial sector are affected by so many other influences, the pervasive effects of the introduction of new technologies and globalisation being only two.[5] Accordingly, inevitably, qualitative assessments will also need to be made when reviewing the impact of any particular set of reforms.

- However, on the basis of the financial reforms which Australia undertook in the 1980s, a leaner, more effective financial system brings many benefits to its users, the most direct and transparent of which – the reduction of cost – accrues to consumers. A more efficient financial system also benefits the wider economy as it releases resources for more efficient uses, hence enhancing the global competitiveness of that economy.[6]

[5] Moreover, it is hard to postulate, for the purposes of comparison, a base case of what the state of the financial sector, or of the wider economy, would have been like if the financial regulatory framework had been left unchanged.

[6] Chapters 15 and 17 of the *FSI Report* stocktake the benefits accruing to the financial system and the economy, respectively, as a result of financial system deregulation reforms in Australia starting in 1983.

RECENT FINANCIAL MARKET DEVELOPMENTS IN THE CHILEAN ECONOMY

Mr Christian Johnson, Senior Economist,
Central Bank of Chile

I'd like to thank the organizers for this invitation to speak about the Chilean economy focusing on the more recent financial developments.

Let me begin saying that Chile's financial stability risks remain low, and the outlook is stable, and let me summarized my presentation saying that during the last decade the Chilean financial system showed great adaptation to unexpected real and financial shocks. Now, domestic macro conditions are propitious towards maintaining financial stability for the future, even when the regional environment is riskier. **Banks** have a substantial capital to cushion unexpected losses. Their exposure to market and liquidity risks is low. **Corporations** have reduced their exposure to currency risk, their debts to equity ratios remain within safe limits, and profits are improving. However, **small and medium firms and households** show some signs of financial stress, although they pose no risk to financial stability, they affect the speed of recovery of investment, employment and consumption.

Let me go through these issues with some detail.

First, domestic macro conditions are favorable towards maintaining financial stability in the foreseeable future.
We expect 4% to 5% GDP growths for these couple of years, with a growth trend of almost 6%. Inflation is under control at 3.5%, we have no fiscal or external imbalances, with a floating exchange rate system fully active since September 1999, and domestic interest rates at historical lows across the whole term structure.

However, international macro and financial conditions are riskier.
We are facing a slowdown of the world economy, with greater financial volatility and faster contagion to emerging markets, but with some evidence of differentiation on Chilean sovereign spread.

Through the Asian crisis the financial system showed great elasticity to absorb significant real and financial shocks without threats to financial stability. Banks built up substantial capital base to cushion for unexpected losses, and the profitability of the financial system is improving. Exposure to currency, interest rate, and liquidity risks in the banking sector are very small, and non-performing loans and provisions are starting to decline, while domestic credit is growing, but mainly to large firms.

In the corporate sector, debt-equity ratios remain within safe limits and slightly declined in year 2000. Profitability is improving, and there exists an increased reliance on domestic financing through bonds and banking credit.

Through the 90´s, as large corporations went abroad to finance their investments needs, fast growth of credit to households and small and medium firms was available. However, the sharp deceleration of the economy increased bankruptcy probability and unemployment risks for this sector. As a result, Government created programs for refinancing small firms' cash flows and liabilities. Now, consumer credit remains stagnant and mortgage credit continues recovering slowly.

Let me mention some Structural Issues to think about.
There persists small volume of trading and liquidity in domestic markets, especially in the stock market. Pension funds exit the domestic stock market to invest abroad, and we have seen an increased concentration of ownership of stocks.

Mergers and Acquisitions in Pension Fund system leave the industry in the hands of a few players. Prospects for two large mergers in the banking sector lead to an increased concentration of the industry, and we are facing cross ownership of banking, pension funds and insurance companies all over the system.

Among the most recent reforms to address these problems are:
1. Eliminate restrictions to foreign investors.
2. The new law on corporate governance that protects minority stockholders.
3. Exempt foreign investors of the capital gains tax.
4. Flexibility on the regulatory requirements to list new firms in the stock market.
5. The creation of **Consolidated Supervision** by the three agencies: *Superintendence of Financial Instruments*, *Superintendence of Banking Institutions*, and *Superintendence of AFP*.
6. Open up pensions fund industry to other financial agents like banks and insurance companies.

In an emerging economy like Chile, the key point is to increase flexibility in all markets. We have been working on that in recent years following a careful, gradual approach, to make sure that we put in place the necessary prerequisites to introduce additional flexibility with minimum costs. An example of this approach is the way in which we moved first from limited exchange rate flexibility to a wider band and then to a full, clean floating system. **This was done only after the Central Bank had put in place hedging instruments in the market, had stimulated banks to do likewise, and had established currency mismatch regulations in the financial sector. Also, incentives were provided to the financial sector to take into consideration currency mismatches of their client when evaluating their risks.**

The Central Bank has not intervened at all in the forex market since floating, and interest rate policy has not been based on an exchange rate target consideration but rather on the achievement of the inflation target. Even when the volatility of the peso-dollar exchange rate increased after floating, it is still one of the most stable among floaters.

A clean float, once settled, makes removing exchange restrictions easier and less risky, and the remaining financial restrictions in Chile were eliminated definitely last April, among them: the **Reserve Requirement** to short term flows.

The main authorities are convinced that flexibility is the key policy approach to face a changing world. However, flexibility can be made fully operational only on the basis of strong fundamentals. In fact, from the **financial sector** point of view, exchange rate flexibility implies taxing the capacity of the financial system to adapt, as well as that of private enterprise to adjust. Moving towards exchange rate flexibility implies a structural change, as the costs of exchange rate risk coverage fall upon the private sector, rather than the Central Bank or the government. To be successful, a change of this magnitude requires strong fundamentals.

Today, Chilean macroeconomic policy is defined by a monetary policy based on inflation targeting, the free float of the Chilean peso and a fiscal policy guided by rules. We expect that this policy set-up, together with well-established strong institutions in all areas will help us to maneuver in an increasing financially interconnected world.

SESSION IV: REGIONAL ECONOMIC OUTLOOK

(Chair: Mr Peter Martin; Speakers: Mr Kunio Saito and Mr Stan Shipley; and Panelists: Dr Shuhei Shiozawa, Mr Wang Tong-san, Mr Will Melick and Mr Kwok-chuen Kwok)[*]

Mr Saito expected an economic turnaround to be due by the end of 2001. He attributed the current downturn to the substantial inventory adjustments and the weakness in investment activities. However, he forecast that the current downswing in the IT cycle would come to an end by the second half of 2001, as downward inventory adjustment would soon complete and production would resume expansion. That would also be helped by policy adjustments, such as interest rate cuts and tax cuts. In the medium term, Mr Saito noted two extremes in the region. Growth of China and India would continue to accelerate as policy reforms stimulated private economic activities and foreign direct investment, and opened up the economies leading to closer integration with the global system. On the contrary, Japan had been going through a market-induced process of downsizing and down-pricing. While this would eventually help restore its competitiveness, the process would be deflationary in the short-term. Other Asian economies would be positioned between these two extremes, growing at a high rate but slower than those recorded before the crisis.

In response to a floor comment about political uncertainties and growing attention on China, Mr Saito said that more attention should be directed to India, another economy that had tremendous potential and did have the policies to realise such potential. Mr Saito's optimism about India was however queried by another floor participant, who pointed out that India's liberalisation process was hampered by politics and its IT industry remained an OEM-type structure. Basically, Mr Saito agreed to these comments associated with India and expected that there were many other challenges too. Yet, he recognised India's continuous efforts to open up the economy and to de-regulate the economic system though progress was slow. He treated the steady and high growth rate of India, at 6%, in recent years as evidence of improvement.

Mr Shipley described the current situation as the darkest at dawn and things would get better soon. He expected the US economy to turnaround by the fourth quarter of 2001. He noted that corporate profits were going down. However, better economic growth, better productivity and reined-in labour costs would boost profits back to its growth path in 2002. His team projected a 15%–20% profit growth in 2002 and 2003. He considered consumer spending to be the key for turning the economy around and that it would be fuelled by interest rate cuts, tax cuts, and capital gains from the stock market. Moreover, the strong desire for home-ownership would continue to give an important support. However, the real key to economic prospects over the next three years would be capital spending. Better economic growth with better profits would lead to an increase in capital spending and thus help sustain economic expansion throughout 2002 and 2003. All in all, Mr Shipley forecast US' GDP growth to return to a growth path of 4%.

Apart from that, Mr Shipley also noted the continued current account deficit and capital account surplus in the United States. He was concerned that this scenario would not be sustainable. Also, he cited a study that found depreciation of US dollar would only have minimal effect on US inflation rate though this could significantly undermine the competitiveness of the European

---

[*] Mr Peter Martin, Treasury, New Zealand
Mr Kunio Saito, Director, IMF Regional Office for Asian and the Pacific
Mr Stan Shipley, Director, Global Securities Research and Economics Group, Merrill Lynch & Co
Dr Shuhei Shiozawa, Director for International Economic Affairs, Cabinet Office, Japan
Mr Wang Tong-san, Director, Chinese Academy of Social Sciences
Mr Will Melick, Senior Economist, Council of Economic Advisers, US
Mr Kwok-chuen Kwok, Regional Chief Economist, Standard Chartered Bank

counterparts.

Dr Shiozawa then went through some details of the newly adopted policies to revitalise the economy. *Firstly*, the government called for the final disposal of non-performing loans (NPLs) and doubtful loans. This would be assisted with other measures such as facilitating the disclosure of financial conditions of companies, monitoring major banks' progress in disposing NPLs, strengthening the power of the Resolution and Collection Corporation, and enhancing employment services and social securities to alleviate the associated negative impacts. *Secondly*, structural reforms would be undertaken to promote privatisation, encourage a social system that would shift emphasis from savings to liquid investments, create a tax system that encouraged start-ups and business creation, promote IT revolution, strengthen welfare and insurance, encourage human capital development, create a barrier-free infrastructure, support local independence and revitalisation, and fiscal reform. These policies would help the Japanese economy to recover in due course though the economy had to endure very slow growth in the next two to three years.

On the concerns that inadequate political support and the weak economy could be obstacles for the restructuring programme, Dr Shiozawa responded that the implementation of the restructuring programme was conducted in a non-traditional way of Japanese politics, i.e. a top-down and leadership way. This would require strong public support for the leadership of the Prime Minister. Indeed, public support for Mr Koizumi, Prime Minister of Japan, was as high as 90%, despite only a 30% or 40% support for the leading Liberal Democratic Party. Yet he agreed that public support could decrease drastically with the continued deteriorating economic condition and that could put undue pressure on the restructuring process. Hence, whether the restructuring programme could succeed or not would depend very much on the patience of the people in tolerating a short-term recession.

Mr Wang gave a brief account of China's economic performance from 1996 to 2000. During the period, many reforms had been carried out, including reforms of state-owned enterprises, financial system, fiscal and taxation system, foreign trade, the grain circulation system, housing system, governmental institutions, and social security system. The Party Central Committee targeted to double the GDP in 2000 by 2010. There would, however, be challenges in the next five to ten years. These included inappropriate industrial structure and non-coordinated local development, relatively low quality and low competitiveness of products in the international market, problems of the socialist market economy, comparatively backward state of science, technology and education, and relatively weak innovative ability, shortage of important resources such as water and fuels and the deterioration of the ecological environment, growing employment pressure and increasing income gap, accidents and disasters, corruption and bureaucracies, and poor public order.

Mr Wang was asked if his forecasts had taken into consideration China's accession to WTO. In this connection, he stated that the overall impact of China's accession to WTO was difficult to measure. He mentioned three complications. *Firstly*, the impact of the accession would only become apparent gradually. In his view, changes would not be significant in the next three to five years. *Secondly*, the benefits would tend to vary from region to region. Coastal areas in the eastern part of China would benefit sooner than areas in the middle and western part of China. *Thirdly*, the impact would also vary from sector to sector. Textiles and some light industries would feel the positive impact more immediately than other industries like agriculture and telecommunications. The WTO impact on the latter two might even be negative in the initial years.

Mr Wang saw stimulating domestic investment and consumption the key to sustainable growth in the years ahead. He noted that the share of external trade and especially exports of light industrial products in GDP had declined since the Asian financial crisis. Helped by government fiscal stimulus measures, investment and consumption grew by 20.0% and 11.1% in May 2001, significantly higher than the 15.1% and 10.3% growth in the first quarter of 2001.

Mr Kwok noted that Hong Kong, China was experiencing a cyclical downturn induced by the external environment. In fact, the product mix of Hong Kong, China's exports had sheltered the economy from being hit by the rapidly slowing technology sector. The six interest rate cuts in US had helped alleviate pressure from the global downturn. Nevertheless, the strong currency was hurting the economy, which was still undergoing the adjustment process after the Asian financial crisis. Although Hong Kong, China would benefit from the strong growth in China through tourism and financial market activities, there would be challenges, such as competition from Shanghai, Shenzhen and other cities in China. Looking forward, Hong Kong, China should continue to promote tourism, put effort in logistic management, and strengthen its status as a financial centre.

On concern about Asia being divided into two parts, North and South, due to the growing importance of China, Mr Kwok seemed to see this kind of argument overstated. He commented that even though trade between China and South-east Asia had been growing very rapidly, it had started with a very low base. Besides, foreign direct investment in China just accounted for a tiny proportion of global foreign direct investment. Furthermore, the current downturn had led to a fall in commodity prices, affecting many of these ASEAN economies relying on exports of natural resources. Yet, a cyclical upturn will raise commodity price again, channelling wealth to these economies.

In respect of the projection of an early recovery in the United States, **Mr Melick** raised four issues that might need attention. These included how long would be the lag and how effective the 275 basis points rate cut would have in a new economy, whether the US consumers would spend the money from the tax cuts, whether the earning forecasts remained too optimistic, and whether protectionist measures would put stress on US major trading partners like China and Japan.

Mr Martin, the chair of the panel discussion, was asked about the motivation of New Zealand in negotiating free trade agreement or closer economic partnership agreement with Asian economies, like Singapore and Hong Kong, China. Mr Martin reckoned that this was a good strategy to build effective economic links, particularly with complementary economies that could provide entry into much bigger markets in North Asia. In another part of the discussion, he also reminded that trade was not a zero-sum game and trade would benefit the economies involved and hopefully the people who took part.

The implication of the new economy paradigm on the business cycle, such as the speed and characteristics of the adjustments in coping with the ups and downs was also asked from the floor. Mr Melick highlighted again that the on-going consensus forecasts were made on the basis of rapid adjustment. With new management systems, like just-in-time inventory management, he expected a shallower cycle and a quicker rebound. Citing from a study of his firm, Mr Shipley noted that the inventory cycle in 1990s was roughly half of that in 1970s. Similarly, the whole capital investment cycle was also shortened by 30% over the period. These showed that nowadays economies could adjust to business shocks at a faster pace.

REGIONAL ECONOMIC OUTLOOK

Mr Kunio Saito, Director
IMF Regional Office for Asian and the Pacific

This session is about the outlook for Asian economies, and I have been asked to lead off the discussion. So I would start by saying that this is a difficult subject to talk about at this juncture when we are expecting an economic turnaround. What I believe, and what I would like to argue this afternoon, is that the present economic slowdown will be short-lived. It will come to an end toward the latter part of this year, and thereafter growth will gradually accelerate to potential over the medium term. The fears of global recession or of another financial market crisis, expressed by some people, are therefore unfounded. However, the economic situation remains weak at present, and almost all incoming data point to further weakening, instead of a turnaround. The situation will worsen further before it starts improving.

So, I am afraid, my presentation is not going to be very straight-forward and is not going to be easy to follow. I will first review the recent developments—that is a continuing weakening of the global and regional economies—and then discuss the likely developments in the remainder of this year and the next—that is the expected economic turnaround and a return to faster growth. I will also discuss risks to this scenario and policy requirements to cope with the risks. Finally, I would like to make a few brief remarks about the growth prospects for Asian economies over the medium term.

Recent developments.

So, let me start with a brief review of recent developments, first in major industrial economies and then within the region.

The slowdown has been most notable in the **United States**, where growth declined from 5 percent for 2000 as a whole to an annualized rate only slightly above 1 percent in the first quarter of this year. A further slowdown is expected for the second quarter by many private forecasters. Underlying this slowdown were sizable inventory contractions and a weakening of business investment, reflecting falling corporate earnings and weakening business sentiment. Private consumption has so far remained relatively strong, but many forecasters fear consumption growth too may slow, reflecting the negative wealth effect of falling asset prices.

Japan's growth in recent years has not been very impressive, as growth turned negative in the first quarter, and is likely to remain so in the second. Among other things, this fall is attributable to declining external demand, and continuing weaknesses of investor and consumer sentiment. Prime Minister Koizumi has succeeded in improving the government's standing in the public polls—from 8 percent to over 80 percent—but this improvement has not yet been translated into a strengthening of private confidence.

Contrary to some people's hopes, **Europe** is not an exception to the present global economic slowdown. In recent months, Europe has seen falling orders, rising inventories, and, despite the weak euro, slowing export growth. This weakening growth in Europe has been accompanied by rising inflation. In part this seems to have reflected supply factors—higher oil and food prices—but it nevertheless complicates overall economic management.

Asian economies have been affected significantly by the global slowdown, through two main channels. First, the weakening of equity prices in industrial country markets, especially in the U.S., has led to an almost simultaneous weakening in Asian equity prices, which, in turn, has

undermined investor confidence and thus investment growth. Second, and perhaps more importantly, the global slowdown, especially of the U.S., has resulted in a sharp slowdown of Asian exports, and in some cases a fall in exports. External factors have had a stronger impact, as can be expected, on those economies that are more open and more closely integrated into the global economy, and more specifically, on those that rely on IT and electronics exports to U.S. markets. Accordingly, growth rates of Korea, Taiwan POC, Hong Kong SAR, Malaysia, and Singapore declined sharply in the first quarter of this year—to an annual rate of 2 to 4 percent—and are likely to remain low in the second quarter. In contrast, China's growth has continued to be strong—at about 8 percent in the first quarter. So has been India's growth—at an estimated rate of about 6 percent, about the same as in the last few years.

It is worth noting that the availability of external funds does not seem to have been a factor responsible for the economic slowdown in most Asian economies. The recent slowdown in capital inflows appears to be a result—rather than a cause—of the economic slowdown.

Beyond the external factors that I just mentioned, there were some country-specific factors that have been responsible for the recent economic slowdown. These include, most importantly, uncertainties arising from political transitions, or potential transitions. This factor was significant earlier in the year in some countries—such as the Philippines—and is still crucial in some others—including Indonesia.

The global slowdown is, of course, something the world has been aware of and concerned about for some time. The IMF, for example, reflected the slowdown in its *World Economic Outlook* published last April. In that publication, the estimated global growth for 2001 was revised down to about 3 percent from about 4 percent that had been forecast in October last year. The estimated growth for the U.S. was halved from 3 percent to 1.5 percent, and that for Japan, from 1.8 percent to 0.6 percent. The growth of Asia outside Japan in 2001 was estimated to average about 6 percent, almost one percentage point lower than had been envisaged last October (Figure 5).

Outlook for the remainder of 2001 and 2002

Despite these downward revisions, the WEO projections in April forecast **a rebound** in the latter part of this year and a return to faster growth in 2002—to almost 4 percent for the world as a whole. The projected rebound is based on two premises. First, the present downswing in the IT cycle was assumed to be over by the second half of the year—downward adjustments of inventories and production capacities would therefore be completed by that time, and the industry would resume expanding with a far-reaching positive impact on other sectors. Second, policy adjustments undertaken by major industrial economies to support demand growth were assumed to start showing their impact in the second half of the year[1]. Efforts toward structural reform, which are expected to continue in all countries, including Asian countries, were also thought likely to help improve the investment climate.

One question that can be asked at this juncture is whether, in light of still weakening economic conditions, these premises still hold, and the economies will rebound as expected. My answer is affirmative. The IT and electronics industries go through a cycle of frequent booms and busts, a characteristic of a new and dynamic industry. But every time they go down, they have successfully adjusted their inventories and production lines, and come back to resume strong expansion. I believe that the same will happen this time too. I am also optimistic about the

[1] As is widely known, monetary policy has been eased in the U.S. and, to a lesser extent, in Japan and Europe. The Federal Reserve has cut the interest rate five times this year by 2.5 percentage points to 4 percent, and Congressional agreement has been reached to cut personal income tax rates. In Japan, the Bank of Japan has adopted a new monetary policy framework, with a higher quantitative target for reserve money and a more explicit time frame to deal with deflation. And in Europe, the European Central Bank lowered the interest rate in May, and income tax reductions have been implemented in some countries.

effectiveness of supportive financial policies, especially of monetary easing in the U.S. I am aware some people argue high corporate leverage and increased household debt could limit the effectiveness of lower interest rates in the U.S.[2], but I believe that monetary easing, combined with income tax cuts, will in time provide a strong impetus for an economic rebound in the latter part of this year, or early next. The U.S. rebound will induce a wave of rebounds elsewhere—I am sure that everybody would agree with this.

Another question may be what can be done if the economies continue to weaken over the summer and the expected rebound later this year is delayed? This unfortunate situation, in my view, will call for additional supportive policies. In particular, further lowering of interest rates could be considered in both the US and Europe. In Japan, the Bank of Japan could fully utilize its new policy framework and provide sufficient liquidity to prevent the economy from falling into a vicious cycle of deflation.

With or without additional policies, I believe that the economies will start to rebound at around the turn of the year. However, this is likely to be a moderate U-shaped rebound. The moderate rebound, and the sharper-than-expected economic weakening in the first half, will require, in my view, a further downward **revision in estimated growth** rates for this year and perhaps for next year also. The IMF staff is currently working on these possible revisions, which will be included in its next *World Economic Outlook* paper, which will be made available to the public next September.

Medium-term outlook

Let me now move to Asia's **medium-term growth outlook**. I must admit that I am a bit hesitant to do this, because the IMF is rather short-sighted and our forecasts usually cover only up to 18 months. But I believe that discussions in this session would not be complete without going into the medium term. So let me make a few personal observations.

First, Asia's growth leaders have changed over the years—from Japan and the NIE's, to the NIE's and ASEAN countries, and now perhaps to **China and India**. Like their predecessors, accelerated growth in China and India has resulted from, among other factors, policy reform to stimulate private economic activity, including FDI, and more generally, to open up their economies and integrate them more closely into the global system. The reform, and the resultant rise in investment, have enabled the late starters, like China and India, to utilize the abundance of human capital, the advantage late starters have initially. Large inflows of FDI, and underlying relative exchange rate movements over the longer term, have also helped. So have the country specific factors, such as China's entry to the WTO and India's emergence as one of the world's software centers.

Consequently, I believe medium-term growth in both China and India will remain at the same high rates as in the last several years, if not higher.

Second, **Japan** is at the other extreme. Its economy in recent years has been characterized by, among other things, the loss of competitiveness as an investment destination, large FDI outflows, stagnant domestic investment, and weak growth. At the same time, it has been going through a market-induced process of downsizing and down-pricing, which will eventually help restore its competitiveness but is deflationary in the meantime. The Government of Prime Minister Koizumi seems to have public support for pushing ahead with reforms of highly regulated areas as well as the financial and corporate sectors. This will have positive long-term effects, but will also have a deflationary impact in the short run. So, Japan's growth, even after the rebound that I mentioned earlier, will likely remain low. The government has recently indicated that growth will be below 2

[2] Some also argue that in Japan, the Bank of Japan's new monetary policy framework may not be implemented as intended, and in Europe, the interest rate cut was modest to start with.

percent in the next few years and thereafter will rise to only 2–3 percent—and these projections appear to be accepted by an increasingly wide group of people.

Third, medium-term growth in **most other Asian countries** is likely to fall between these two extremes. This would imply that most economies would still enjoy high rates of growth—averaging perhaps 5–7 percent over the medium term. It may also imply, for a number of economies, a growth rate somewhat lower than that achieved before the Asian crisis. One important factor accounting for the lower growth will be the short-term negative impact of financial and corporate restructuring that these countries will continue to have to go through—a legacy of the crisis.

Conclusion

I would now like to conclude by pointing out two major policy challenges that I believe the region must address in order to sustain rapid growth.

The first is to continue forcefully with financial and corporate restructuring, despite some short-term effects. I just mentioned that forceful pursuit of financial and corporate restructuring is crucial to restoring investor confidence and to ensuring the expected economic turnaround. The restructuring, and the resultant strengthening of the financial and corporate sectors, is also essential for sustained rapid growth over the medium term.

Second, it is important to maintain policies to facilitate free flows of goods and capital, and more generally to integrate the region's economies into the global system. As I mention earlier, the region has benefited from a process in which a group of countries adopted, in succession, these policies and emerged as the region's growth leaders. This process facilitated a sharp rise in interregional trade and improved region-wide allocation and use of resources. Clearly this process needs to be continued, including by resisting temptations to protectionist moves.

I believe that the region will find ways to meet these challenges, and I remain cautiously optimistic about the region's future.

Thank you.