Asia-Pacific
Economic Cooperation

Advancing Free Trade
for Asia-Pacific **Prosperity**

SMEs, Competition Law and Economic Growth

ISSUES PAPER No. 10

APEC Policy Support Unit
September 2015

Prepared by:
Cassey Lee and Bernadine Zhang Yuhua*
Asia-Pacific Economic Cooperation Policy Support Unit
Asia-Pacific Economic Cooperation Secretariat
35 Heng Mui Keng Terrace
Singapore 119616
Tel: (65) 6891-9600 Fax: (65) 6891-9690
Email: psugroup@apec.org Website: www.apec.org

Produced for:
Asia-Pacific Economic Cooperation

APEC#215-SE-01.16

* Senior Fellow at ISEAS-Yusof Ishak Institute and Analyst at Policy Support Unit, respectively. The views expressed in this paper are those of the authors and do not necessarily represent those of APEC Member Economies.

This paper will appear in the forthcoming book titled "Competition Law, Regulation and SMEs in the Asia Pacific: Understanding the Small Business Perspective" edited by Michael Schaper and Cassey Lee and published by ISEAS-Yusof Ishak Institute.

EXECUTIVE SUMMARY

SMEs account for over 95 percent of enterprises in APEC economies. There are differences in the concentration of SMEs between developed and developing economies. The role of SMEs in economic growth is best understood within a theoretical framework focusing on firm dynamics and firm size distribution. The entry and exit of small firms is a critical aspect of economic growth. There is some empirical evidence indicating that economic growth is associated with competition law. Micro-level evidence is likely to be needed to investigate how competition law affects SME's role in economic growth.

TABLE OF CONTENTS

LIST OF TABLES

1. INTRODUCTION

The concept of "competition" has a near mythical status in economics. Economists have often used Adam Smith's "invisible hand" to illustrate the point that competition amongst buyers and sellers seeking to maximize their gains also benefits society. Less attention has been paid to Smith's cognizance that sellers can collude to the detriment of consumers. Likewise, Schumpeter has argued that the prospects of market power is also a key driver of innovation. Such contradictory perspectives on the role of competition continue to perpetuate in the modern post-war theories of economic growth as well as the attendant empirical studies. Thus, the role of competition in economic growth is far from clear. To add to the predicament of policy makers and regulators seeking more direct answers, the nature and role of small and medium-sized enterprises (SMEs) in economic growth is likely to be inconclusive and possibly even elusive as well.

Despite the existing knowledge gap, competition laws – legislations promoting market competition - have been implemented in many economies. To date, more than 130 economies around the world have implemented competition laws in one form or another. It is thus useful to reassess what we know about SMEs, competition law and how both are related to economic growth.

The purpose of this paper is to provide a brief synthesis of what is known in the research literature, by examining the theoretical and empirical relationships between SMEs, competition law and economic growth. The paper will attempt to critically reflect on a few key questions. First, what is the nature and role of SMEs in the economy? Second, what role do SMEs play in economic growth? Finally, how does competition law affect this role?

To examine the above issues, this paper begins with a discussion of the nature and role of SMEs in the APEC region. It is followed by an examination of the role of SMEs in economic growth, and then examines whether competition law has an effect on the SME role in economic growth.

2. THE NATURE AND ROLE OF SMES IN APEC ECONOMIES

A key characteristic of all economies is the diverse or heterogeneous nature of firms engaged in business activities. Dimensions of firm heterogeneity include ownership type (number of owners, private vs. state-owned, listed or not listed in the stock exchange), size (number of employees, total revenues, total fixed assets, market value) and performance (total revenues, total profits). Amongst these dimensions, firm size has been a focal point for policymaking. Much attention has been paid to "small and medium-sized enterprises" (SME).

But what is an SME? There is currently no global consensus on how to define such an entity. Several dimensions are used by international bodies such as the International Finance Corporation (IFC) and the European Commission. For example, according to the IFC, an SME is a registered firm qualifying under either two of the three criteria: no more than 300 staff, less than USD 15 million of total assets, or less than USD 15 million of total annual sales (IFC, 2012). According to the European Commission, an SME is a firm with less than 250 employees, and an annual turnover of less than 50 million euro or with an annual balance sheet of less than 43 million euro (European Commission, 2005).

In the Asia-Pacific region there is also no single definition of an SME that is accepted by all economies. Different criteria or combinations of criteria are adopted to characterize SMEs in APEC economies (please see appendix 1). Four often-used criteria are number of employees, annual sales (or revenue, or turnover, or average receipts), assets, and capital (or investment). In certain cases, criteria are specified at a sector level. Furthermore, the definitions of SMEs are not static, as some economies tend to revise their definitions every few years to take into account changing macroeconomic situations.

SMEs account for over 95 percent of enterprises in 18 APEC economies in the region (see Table 1). Depending on the size and structure of the economy, the number of SMEs varies substantially, ranging from just 5,427 in Brunei Darussalam in 2010 to 57,895,721 in Indonesia in 2013. SMEs make up 99 percent of enterprises among half of APEC economies. This includes both developed economies (such as Australia; Canada; Japan; and the United States), and developing economies (Indonesia; Korea; Mexico; Peru; the Philippines, and Singapore). Only in Chile and Papua New Guinea is the share of SMEs in total enterprises below 95 percent, at 84 percent and 92 percent respectively.

Table 1. Number of SMEs and SMEs as a Share of Total Enterprises

APEC economy	No. of SMEs	% of total enterprises	Year
Australia	2,096,548	99.83	2014
Brunei Darussalam	5,427	97.50	2010
Canada	1,244,694	99.76	2014
Chile	854,539	84.23	2013
China	≈ 18,000,000		2014
Hong Kong, China	321,113	98.27	2014
Indonesia	57,895,721	99.99	2013
Japan	3,852,934	99.73	2012
Korea	3,351,404	99.90	2012
Malaysia	645,136	97.30	2011
Mexico	4,193,501	99.80	2013
New Zealand	459,035	97.13	2013
Papua New Guinea	44,285	92.03	2013
Peru	1,513,006	99.45	2013
Philippines	937,327	99.59	2013
Russia	5,588,600	95.50	2013
Singapore	187,719	99.34	2014
Chinese Taipei	1,331,182	97.64	2013
Thailand	2,763,997	97.16	2013
United States	5,707,941	99.68	2012
Viet Nam	324,808	97.64	2012

Source: See Appendix 2

Notes:

1. For Australia, data shown are of mid-year.
2. For Canada, data do not include businesses without a Canada Revenue Agency payroll deduction account.
3. For Hong Kong, China, there is no official definition of a micro enterprise. Data do not cover the entire business units due to incomplete coverage of the Quarterly Survey of Employment and Vacancies. Establishments in the Central Register of Establishments with the same main business registration number (BRN) and engaged in activities of the same industry section are grouped into one business unit for the purpose of calculating the number of SMEs.
4. For New Zealand, data are of February.
5. For Papua New Guinea, data include 32,692 formal SMEs and 11,593 formalized enterprises.
6. For the Philippines, data include only the formal sector of the economy.
7. For the United States, data include only employer firms.

SMEs play an important role in employment creation, as they tend to be more labor-intensive than large enterprises (see Table 2). Based on the latest available data, SMEs employ a majority of the workforce in many economies. Particularly in Canada; Indonesia; Korea; Papua New Guinea; and Thailand, SMEs account for over 80 percent of total employment. It is noteworthy that SME employment in Russia is quite low, at 25 percent in 2013. This might be explained by the large informal sector in Russia, as employment in this domain is not covered by official statistics. In New Zealand, the share of SME employment is also relatively low, at 30 percent in 2013 but this is because the definition for small enterprises is capped at 19 employees.

Table 2. Number of SME Employees and SMEs' Share in Total Employment

APEC economy	No of SME employees	% of total employment	Year
Australia	7,241,000	68.27	2013
Brunei Darussalam	59,179	59.41	2010
Canada	10,034,933	87.10	2014
Chile	3,663,029	42.06	2013
Hong Kong, China	1,313,680	47.10	2014
Indonesia	114,144,082	96.99	2013
Japan	32,167,484	69.72	2012
Korea	13,059,372	87.70	2012
Malaysia	5,135,605	57.50	2013
Mexico	15,297,783	71.40	2013
New Zealand	583,600	30.07	2013
Papua New Guinea	468,502	98.00	2013
Peru	9,530,850	60.77	2013
Philippines	4,770,445	63.69	2013
Russia		25.00	2013
Singapore	2,229,000	65.83	2014
Chinese Taipei	8,588,000	43.85	2013
Thailand	11,414,702	80.96	2013
United States	56,062,893	48.36	2012
Viet Nam	6,740,000	61.55	2012

Source: See Appendix 2

Notes:

1. For Australia, the SME employment and total employment do not cover the financial and insurance sectors, and the general government component of public administration and safety, education and training and health care and social assistance. Data are of mid-year.
2. For Hong Kong, China, there is no official definition of a micro enterprise. Data do not cover the entire employment due to incomplete coverage of the Quarterly Survey of Employment and Vacancies. Employment figures cover three types of employees: 1) individual proprietors, partners and persons having family ties with any of the proprietors or partners and working in the business unit without regular pay, who are actively engaged in the work of the business unit for at least 1 hour on the survey reference date; 2) full-time salaried personnel/employees directly paid by the business unit and working directors of limited companies, both permanent and temporary, who are either at work (whether or not in Hong Kong, China) or temporarily absent from work (viz. on sick leave, maternity leave, annual vacation or casual leave, and on strike) on the survey reference date; and 3) part-time employees and employees on night/irregular shifts working for at least 1 hour on the survey reference date.
3. For New Zealand, data are of February.
4. For Papua New Guinea, SMEs' share in total employment includes 85% labor force that is engaged in the informal sector.
5. For Peru, employment data include public sector, private sector, self-employed and housekeeper.
6. For the Philippines, data include only the formal sector of the economy.
7. For Singapore, data consist of only SMEs in the services and manufacturing sectors, and exclude public administration activities and own account workers (e.g. freelancers, taxi-drivers, hawkers). 2013 data is preliminary, and 2014 data is estimate.
8. For the United States, data include only employer firms.
9. For Viet Nam, employment with private enterprises is used as proxy of SME employment.

SMEs' contribution to the economy (in terms of GDP or value added) is relatively less substantial than employment creation (see Table 3). Only Australia; China; Indonesia; and Japan have their SMEs producing more than 50 percent of its GDP. In 11 other economies, SMEs account for 30 to 50 percent of economic output. An outlier is Papua New Guinea, where SMEs only account for 13 percent of GDP in 2013.

Table 3. Economic Contribution of SMEs

APEC economy	Measure	SMEs' share	Year
Australia	Industry value added	55.72	2013
Brunei Darussalam	Gross value added	17.30	2010
Canada	GDP	27.00	2011
Chile	GDP	18.90	2011
China	GDP	60.00	2014
Hong Kong, China	Value added	41.00	2013
Indonesia	GDP	60.34	2013
Japan	GDP	54.55	2011
Korea	GDP	47.70	2012
Malaysia	GDP	33.10	2013
Mexico	GDP	34.70	2008
New Zealand	GDP	28.43	2011
Papua New Guinea	GDP	13.30	2013
Peru	GDP	41.20	2007
Philippines	Value added	35.67	2006
Russia	GDP	21.00	2013
Singapore	GDP	45.80	2014
Chinese Taipei	GDP	45.12	2011
Thailand	GDP	37.40	2013
United States	GDP	44.60	2010
Viet Nam	GDP	46.00	2013

Source: See Appendix 2

Notes:

1. For Australia, industry value added, instead of GDP, is used to measure SMEs' contribution to economy. The industry value added does not include the financial and insurance sectors and the general government component of public administration and safety, education and training and healthcare and social assistance. Data are of mid-year.
2. For Brunei Darussalam, gross value added is used to measure SMEs' contribution to economy.
3. For Hong Kong, China, there is no official definition of a micro enterprise. Value added is used to estimate SME's contribution to economy. Value added is equal to the gross value of output minus the value of the goods and services used in production, which excludes community, social and personal services.
4. For Malaysia, 2013 data are preliminary.
5. For New Zealand, data are of March 2011.
6. For Papua New Guinea, SMEs' contribution to GDP does not include the large informal sector.
7. For the Philippines, value added is used to estimate SMEs' contribution to economy.
8. For Singapore, 2014 data are estimate.

A breakdown of SMEs by size categories shows that micro and small enterprises are the overwhelming majority in each economy (see Table 4). This is especially true with micro enterprises, who usually make up over 70 percent of SMEs. In 14 APEC economies, micro and small enterprises represent over 95 percent of SMEs. The only two economies that have a larger share of medium enterprises are Brunei Darussalam and Japan, at 33 percent and 13 percent correspondingly.

Table 4. Distribution of SMEs by Size

APEC economy	Medium	Small	Micro	Year
Australia	2.47	9.54	88.00	2014
Brunei Darussalam	33.24	66.76	--	2010
Canada	1.80	41.70	56.30	2014
Chile	3.15	21.05	75.08	2013
Indonesia	0.09	1.13	98.78	2013
Japan	13.24	--	86.76	2012
Korea	2.77	10.14	87.01	2012
Malaysia	3.08	19.96	76.95	2011
Mexico	0.80	3.65	95.55	2013
Peru	0.20	4.70	95.20	2013
Philippines	0.40	9.26	90.34	2013
Russia	0.25	4.20	95.56	2013
Singapore	4.68	15.66	79.66	2013
Thailand	0.48	99.52	--	2013
United States	1.70	22.20	75.70	2009
Viet Nam	2.50	30.00	67.50	2011

Source: See Appendix 2

Notes:

1. For Australia, data shown are of mid-year.
2. For Canada, data do not include businesses without a Canada Revenue Agency payroll deduction account.
3. For Singapore, data consist of only SMEs in the services and manufacturing sectors, and exclude public administration activities and own account workers (e.g. freelancers, taxi-drivers, hawkers).
4. For the Philippines, data include only the formal sector of the economy.
5. For the United States, data include only employer firms.

Within any economy, there are a few sectors that have a large proportion of SMEs, such as wholesale and retail trade; professional, scientific and technical services; and manufacturing (see Table 5). Depending on the structure of the economy, the concentration of SMEs also differs. Wholesale and retail trade have the largest number of SMEs in 11 APEC economies, accounting for 18 percent to 48 percent of total SMEs. In other economies, sectors with the largest number of SMEs are: construction in Australia (16 percent); agriculture in Indonesia (49 percent); rental, hiring and real estate services in New Zealand (22 percent); and professional, scientific, and technical services in the United States (13 percent). A distinction of concentration of SMEs exists between developed economies and developing economies. In developed economies, the top three sectors with the largest number of SMEs constitute less than 50 percent of total SMEs, while in developing economies, the top three sectors represent over 50 percent (and in fact often over 70 percent) of all SMEs.

Table 5. Concentration of SMEs in APEC Economies

Share of SMEs	Highest 1		Highest 2		Highest 3		Sum %
	Sector	%	Sector	%	Sector	%	
Australia (2014)	Construction	16.1	Professional, Scientific and Technical Services	11.9	Rental, Hiring and Real Estate Services	10.8	38.9
Brunei Darussalam (2010)	Wholesale and Retail Trade	34.7	Other Service Activities	13.3	Manufacturing	12.6	60.7
Canada (2012)	Wholesale and Retail Trade	18.8	Construction	11.6	Professional, Scientific and Technical Services	11.5	41.9
Chile (2013)	Wholesale and Retail Trade; Repair of Motor Vehicles, Motorcycles and Personal and Household Goods	37.6	Real Estate, Renting and Business Activities	10.2	Transport, Storage and Communications	9.9	57.7
Hong Kong, China (2014)	Import/Export Trade and Wholesale	35.5	Retail	14.3	Professional and Business Services	13.4	63.2
Indonesia (2012)	Agriculture	49.0	Trade, Hotel, and Restaurant	27.0	Transportation and Communication	6.9	82.9
Japan (2012)	Retail Trade	18.0	Accomodations and Food Services	14.1	Construction	12.1	44.2
Korea (2012)	Wholesale and Retail Trade	27.9	Transportation	20.1	Accommodation and Food Service Activities	10.8	58.7
Malaysia (2011)	Services	90.1	Manufacturing	5.9	Construction	3.0	98.9
Mexico (2013)	Trade	48.3	Private Services no Financial	38.1	Manufacture	11.5	97.9
New Zealand (2013)	Rental, Hiring & Real Estate Services	21.8	Agriculture, Forestry & Fishing	14.6	Professional, Scientific & Technical Services	10.9	47.3
Peru (2013)	Trade	45.9	Services	39.0	Manufacture	9.6	94.4
Philippines (2013)	Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	46.4	Accommodation and Food Service Activities	13.6	Manufacturing	12.5	72.5
Russia (2013)	Trade	39.6	Real Estate, Rent Services	20.2	Construction	11.6	71.4
Chinese Taipei (2013)	Services	79.9	Industrial	19.2	--	--	99.1
Thailand (2012)	Wholesale, Retail Trade, Repair of Motor Vehicles	43.6	Manufacturing	17.7	Hotel and Restaurants	11.1	72.4
United States (2012)	Professional, Scientific, and Technical Services	13.4	Other Services (except Public Administration)	11.6	Retail Trade	11.3	36.2
Viet Nam (2011)	Services	66.5	Industry and Construction	30.1	--	--	96.6

Source: See Appendix 2

Notes:

1. For Australia, data shown are of mid-year.
2. For Canada, data do not include businesses without a Canada Revenue Agency payroll deduction account.
3. For New Zealand, data shown are of February.
4. For Singapore, data consist of only SMEs in the services and manufacturing sectors, and exclude public administration activities and own account workers (e.g. freelancers, taxi-drivers, hawkers).
5. For the United States, data include only employer firms.

There are also sectors that have a relatively low number of SMEs (see Table 6). These include electricity, gas, water and waste services; mining and quarrying; and agriculture, forestry, and fishery. In half of APEC economies, mining and quarrying and electricity, gas, water, and waste services have less than one percent of total SMEs. Agriculture, forestry and fishery also has a lower share of SMEs, usually below three percent (although two notable exceptions can be found in Indonesia and New Zealand, which have a higher proportion of SMEs in these fields). In the sectors of public administration and safety (defence), international organizations and foreign organizations, there are also few SMEs, usually no more than one percent.

In summary, SMEs are significant players in the economy, although there is some diversity in the presence and share of contribution across various dimensions such as sectors, level of development, and economy size. The next question is: what role do they play in economic growth?

Table 6. Sectors with Lowest Share of SMEs in APEC Economies

Share of SMEs	Lowest 1		Lowest 2		Lowest 3		Sum %
	Sector	%	Sector	%	Sector	%	
Australia (2014)	Electricity, Gas, Water and Waste Services	0.27	Public Administration and Safety	0.35	Mining	0.39	1.02
Brunei Darussalam (2010)	Mining and Quarrying	0.63	Human Health and Social Work Activities	0.72	Information and Communication	1.73	3.08
Canada (2012)	Mining, Quarrying and Oil and Gas Extraction	0.88	Forestry, Fishing and Hunting	1.21	Information, Culture and Recreation	2.93	5.01
Chile (2013)	Extra-territorial Organizations and Bodies	0.00	Public Administration and Defence; Compulsory Social Security	0.02	Private Households with Employed Persons	0.04	0.06
Hong Kong, China (2014)	Mining and Quarrying; Electricity and Gas Supply, and Waste Management; and Construction Sites	0.40	Transportation, Storage, Postal and Courier Services	2.53	Manufacturing	3.17	6.10
Indonesia (2012)	Electricity	0.03	Mining	0.58	Construction	2.23	2.84
Japan (2012)	Electricity, Gas, Heat Supply and Water	0.02	Mining and Quarrying of Stone and Gravel	0.04	Compound Services	0.09	0.15
Korea (2012)	Manufacturing	0.01	Agriculture and Forestry	0.02	Fishing	0.05	0.09
Malaysia (2011)	Mining & Quarrying	0.05	Agriculture	1.04	--	--	1.09
Mexico (2013)	Other activities	2.13					2.13
New Zealand (2013)	Mining	0.13	Electricity, Gas, Water & Waste Serves	0.21	Public Administration & Safety	0.21	0.56
Peru (2013)	Fishing	0.24	Mining	0.64	Agricultural	1.59	2.47
Philippines (2013)	Electricity, Gas Steam and Airconditioning Supply	0.10	Mining and Quarrying	0.10	Water Supply, Sewerage Waste Management and Remediation Activities	0.14	0.34
Russia (2013)	Agriculture	3.20	Transport, Communication	6.70	Other	8.50	18.40
Chinese Taipei (2013)	Agriculture	0.90	--	--	--	--	0.90
Thailand (2012)	International Organizations and Foreign Organizations	0.01	Public Administration and Defence; Compulsory Social Securities	0.01	Fishing	0.05	0.06
United States (2012)	Utilities	0.10	Unclassified	0.12	Management of Companies and Enterprises	0.33	0.56
Viet Nam (2011)	Agriculture, Forestry and Fishery	0.98	Others	2.40	--	--	3.39

Source: See Appendix 2

Notes:

1. For Australia, data shown are of mid-year.
2. For Canada, data do not include businesses without a Canada Revenue Agency payroll deduction account.
3. For New Zealand, data shown are of February.
4. For Singapore, data consist of only SMEs in the services and manufacturing sectors, and exclude public administration activities and own account workers (e.g. freelancers, taxi-drivers, hawkers).
5. For the United States, data include only employer firms.

3. SMES AND ECONOMIC GROWTH

As economic growth is a long-term phenomenon, theories of economic growth and the accompanying empirical work have primarily focused on macro-level factors such as demographic changes, capital accumulation and technological innovation. Even though micro-level theorizing of economic growth can be seen in some of the early works of the founding fathers of economics, macro-type growth theories became de rigueur with the emergence of Keynesian-based growth theories à la Swan-Solow and Harrod-Domar. However, this macro-micro dichotomy has been eroded in recent years.

Since the 1980s, trade and growth theories have been increasingly fashioned using a heterogeneous firms framework. This approach incorporates micro foundations which assume a population of heterogeneous firms. More recently, growth models with heterogeneous firms makes it possible to dwell on the relationship between firm size and economic growth. The greater availability of micro data (such as at plant level or establishment level) has also brought about more empirical work on micro-level productivity dynamics.

Firm Size Distribution

A starting point of analysis is what does a "typical" firm size distribution look like? Whilst many of the recent studies incorporating firm size distribution dates back to 2003/2004, the preoccupation with this topic dates back to the 1930s. There is a consensus within the empirical literature that firm size distribution is skewed in which large firms account for a disproportionately higher share of total employment or output (Sutton, 1997). However, small firms typically account for more than 90 percent of total business establishments (Schaper, 2006; Schaper et al, 2008).

Over the years, research on firm size distribution has focused on two major aspects. First, scholars have attempted to formally characterize the density function or the heavy tail portion of firm size distributions. A number of candidates have been proposed such as Gibrat, Pareto, and Zipf. Second, attempts have been made to theorize the processes that yield the observed firm size distribution. In many cases, the stochastic process used to model the observed firm distribution has very much depended on the postulated formal characterization of the firm size distribution.

However, despite the need to ensure consistency between firm size distribution and the process that generates it, an economic explanation would require models with additional features that take into account micro-level determinants of firm dynamics. Aspects of such dynamics should include entry, exit, growth, and decline. Generally speaking, firm dynamics are determined by two broad classes of factors: internal and external.

Internal factors include entrepreneurship, managerial talent, human capital, management practices, organizational structure and ownership structure (Lucas, 1978; Bloom et al, 2010). External factors include market competition, access to financing, market/industry regulations, R&D, exporting and other factors related to investment climate. In reality, the effects of internal and external factors cannot be isolated from each other – there are interactions between these factors. Such interactions underlie the differences in performance by firm size.

Firm Size Distribution and Economic Growth

A key point in the earlier section on SMEs in APEC economies is that SMEs dominate in terms of number of establishments but less proportionally in terms of GDP. The latter fact might be construed as supporting a view that SMEs are less important than large firms. This may not entirely be true. This issue can analyzed by examining the sources of growth at the micro-level.

Economic growth is a dynamic process in which more outputs are produced due to factor (capital and labor) accumulation and technological change (innovation). At the micro-level, this can take place through existing firms expanding their production (including introducing new products), and new firms entering the market and commencing production.

However, the focus on output expansion misses the point of reallocation of resources (e.g. capital and labor) from less to more efficient firms. This takes place when inefficient firms reduce their output or exit the market. Thus, selection effect – that is, the replacement of inefficient firms by more efficient ones – is thus an important aspect of economic growth. Reallocation and selection effects have been emphasized much in the recent literature (Foster et al, 2001, Bartelsman et al 2013). Estimates from the US manufacturing sector suggest that around 15-20 percent of all job creation and destruction can be attributed to the entry and exit of firms. A key determinant and predictor of exit is productivity. Two other facts are important. First, there is also strong evidence of a positive relationship between productivity and firm size (Bartelsman et al 2013). Second, the firm turnover rate (entry-exit or churning rate) is generally higher amongst smaller firms. These observations suggest that SMEs play a crucial role via selection and reallocation in the economy.

Another issue worth reflecting is the role that SMEs might play in economic growth through innovation. There is evidence that R&D rises proportionately with firm size (more specifically business unit size) (Wesley, 2010). In the attempts to find the link between firm size and growth at the sectoral level, Pagano and Schivardi (2003) suggests that the positive correlation between firm size and productivity growth is strengthened by R&D activities. Taken at face value, this implies that large firms have a bigger role in generating economic growth via innovation. More recent studies paint a more complex picture. First, the study by Li and Rama (2015) has suggested that a more comprehensive firm sample might weaken the correlation between firm size and productivity. Second, Aghion and Griffith (2005), a firm's distance to the technology frontier could be a more important factor.

How Competition Law Affect SMEs' Role in Economic Growth

When discussing the role of competition law in economic growth, it is worth remembering the difference between competition policy and competition law. Most definitions suggest that competition law is a subset of competition policy. The latter includes government regulations and other policies (e.g. trade policy) that affect the degree of competition in domestic markets. In a sense competition law is more focused and is constrained by provisions within various enacted statutes.

The empirical evidence linking competition law to economic growth is very sparse. This is partly due to methodological difficulties. As Baker (2003) has noted, it is difficult to quantify the deterrence effects of competition law. Thus, most studies have employed a cross-economy analysis. However, such studies are constrained by the availability of comparable international data on competition law, especially as it relates to the performance of antitrust regimes in areas

such as enforcement. One of the earliest studies to do this was Hylton and Deng (2007), who collected data on the coverage of competition laws in 102 economies. Their study did not look at the relationship between competition law and economic growth per se, but instead examined how competition law was related to the degree of competition. The authors found a positive association between the scope of competition law and the intensity of competition.

Voigt (2009) attempted to analyze the correlation between competition and productivity (measured as total factor productivity, or TFP in short). Competition was proxied by four composite variables measuring competition law's position and provisions, the use of economic approach, and the independence of competition agencies. There was some evidence on the relationship between competition law and TFP though they were not very strong. Voigt (2009) also suggested that the quality of institutions might matter. This is related to political rights, civil liberties and government effectiveness – factors that can influence the independence of competition agencies.

These findings are supported by Ma (2011) in a study involving 101 economies. In this study, the effectiveness of competition law enforcement could be indirectly shaped by institutional factors such as government effectiveness and rule of law. A more recent study by Petersen (2013) has also reaffirmed the positive links between competition law and economic growth after ten years.

Another potential indirect approach is to investigate the link between competition law and levels of entrepreneurship within one or more economies. This is particularly relevant given that new firms (entrants) are likely to be SMEs. Schaper et al. (2010) undertook an empirical cross-economy analysis involving 21 economies. Two proxies for competition law were used, namely the range and effectiveness of competition law. Entrepreneurship was measured by the proportion of the adult population that had begun a business. This study found that no discernible correlation between competition law and entrepreneurship could be detected, possibly due to the difficulty in effectively measuring such concepts as entrepreneurship and competition law.

On balance, these studies do provide a limited body of cross-economy evidence that there can be a positive relationship between competition law and economic growth. However, none of the existing empirical studies have examined how SME-related provisions or enforcement of competition law is related to economic growth.

4. CONCLUSION

Small and medium-sized enterprises clearly play an important role in the economy. This is evident irrespective of the many ways in which "SME" has been defined by economies. Within the context of the entire spectrum of firm size distribution, there are clearly differences between SMEs and large firms. Their relative contribution to economic growth is likely to differ across sectors. Within a sector, reallocation and selection effects are important drivers of economic growth. SMEs in particular play a crucial role in the entry-exit process. How competition law affects SMEs role in economic growth is not entirely clear at this point. Part of this problem is due to the availability of measures and data on competition law and factors such as entrepreneurship and entry-exit dynamics. It is also related to how competition law is framed and enforced which depends on the guiding economic framework i.e. Schumpeterian (dynamic) competition or neoclassical (static) competition.

REFERENCES

Acs, Zoltán J.; Morck, Randall; Yeung, Bernard (1999). "Productivity growth and firm size distribution", in Entrepreneurship, Small and Medium-Sized Enterprises and the Macroeconomy. Cambridge University Press.

Aghion, Philippe and Rachel Griffith. (2005). Competition and Growth: Reconciling Theory and Evidence. MIT Press.

Aghion, Philippe, Nick Bloom, Richard Blundell, Rachel Griffith and Peter Howitt. (2005). "Competition and Innovation: An Inverted-U Relationship," Quarterly Journal of Economics, 120: 2 (May), 701-728.

Baker, Jonathan B. (2003). "The Case for Antitrust Enforcement," Journal of Economic Perspectives, 17(4): 27-50.

Bartelsman, Eric, John Haltiwanger and Stefano Scarpetta, (2009). "Measuring and Analyzing Cross-country Differences in Firm Dynamics," in Producer Dynamics: New Evidence from Micro Data, edited by Timothy Dunne, J. Bradford Jensen, and Mark J. Roberts, University of Chicago Press.

Bartelsman, Eric, John Haltiwanger and Stefano Scarpetta, (2013). "Cross-Country Differences in Productivity: The Role of Allocation and Selection," American Economic Review, American Economic Association, 103(1), 305-34.

Bloom, Nicholas, and John Van Reenen.2006. "Measuring and Explaining Management Practices Across Firms and Countries." Centre for Economic Performance Discussion Paper 716.

Bloom, Nicholas, and John Van Reenen. 2007. "Measuring and Explaining Management Practices Across Firms and Countries." Quarterly Journal of Economics, 122(4): 1341–1408.

Nicholas Bloom,, Aprajit Mahajan,, David McKenzie,, John Roberts. 2010. Why Do Firms in Developing Countries Have Low Productivity?. American Economic Review 100:2, 619-623.

Cohen, Wesley. (2010). "Fifty Years of Empirical Studies of Innovative Activity and Performance," in Handbook of the Economics of Innovation, Volume 1, edited by Bronwyn H. Hall, Nathan Rosenberg. North Holland.

European Commission, (2005) "The New SME Definition – User Guide and Model Declaration", available at
http://ec.europa.eu/enterprise/policies/sme/files/sme_definition/sme_user_guide_en.pdf

Foster, Lucia, John C. Haltiwanger, and C. J. Krizan. (2001). "Aggregate Productivity Growth: Lessons from Microeconomic Evidence." In New Developments in Productivity Analysis, edited by Charles R. Hulten, Edwin R. Dean, and Michael J. Harper, 303–63. National Bureau of Economic Research Studies in Income and Wealth, vol. 63. Chicago: University of Chicago Press.

Foster, Lucia, John Haltiwanger, and Chad Syverson. (2008). "Reallocation, Firm Turnover, and Efficiency: Selection on Productivity or Profitability?" American Economic Review, 98 (1): 394–425.

Holmes, Thomas and James Schmitz. (2010). "Competition and Productivity: A Review of Evidence," Annual Review of Economics, 2: 619-642.

Hsieh, Chang-Tai and Peter J. Klenow. (2009). "Misallocation and Manufacturing TFP in China and India," Quarterly Journal of Economics, 124 (4), 1403-1448.

Hylton, Keith and Fei Deng. (2007). "Antitrust Around the World: An Empirical Analysis of the Scope of Competition Laws and Their Effects," Antitrust Law Journal, 271-341.

IFC (2012), "Interpretation Note on Small and Medium Enterprises and Environmental and Social Risk Management", available at http://www.ifc.org/wps/wcm/connect/de7d92804a29ffe9ae04af8969adcc27/InterpretationNote_SME_2012.pdf?MOD=AJPERES

Li, Yue and Martin Rama. (2015). "Firm Dynamics, Productivity Growth, and Job Creation in Developing Countries: The Role of Micro- and Small Enterprises," World Bank Research Observer, 30(1), 3 – 38.

Lucas, Robert. (1978). "On the Size Distribution of Business Firms." Bell Journal of Economics, 9(2): 508–23.

Ma, Tay-Cheng. (2011). "The Effect of Competition Law Enforcement on Economic Growth," Journal of Competition Law & Economics, 7(2), 301-334.

Pagano, Patrizio and Fabiano Schivardi. (2003). "Firm Size Distribution and Growth," Scandinavian Journal of Economics, 105(2), 255-274.

Petersen, Niels. (2013). "Antitrust Law and the Promotion of Democracy and Economic Growth," Journal of Competition Law & Economics, 9(3), 593-636.

Schaper, Michael. (2006). "Distribution Patterns of Small Firms in Developed Economies: Is There An Emergent Global Pattern?" International Journal of Entrepreneurship and Small Business, 3(2), 183-189.

Schaper, Michael, Anne Clear, and Geoff Baker. (2010). "Competition Policy and Entrepreneurship Development: Some International Comparisons" European Competition Law Review, 6, 226-230.

Schaper, Michael, Leo Paul Dana, Robert Anderson and Peter Moroz. (2008). "Distribution of Firms by Size: Observations and Evidence from Selected Countries," International Journal of Entrepreneurship and Innovation Management, 8(6), 718-726.

Sidak, J. Gregory and David J. Teece. (2009). "Dynamic Competition in Antiturst Law," Journal of Competition Law and Economics, 5(4), 581-631.

Sutton, John. (1997). "Gibrat's Legacy," Journal of Economic Literature, 35(1), 40-59.

Syverson, Chad. (2004). "Product Substitutability and Productivity Dispersion." Review of Economics and Statistics, 86(2): 534–50.

Syverson, Chad. (2011). What Determines Productivity? Journal of Economic Literature, 49(2), 326-65.

Voigt, Stefan. (2009). "The Effects of Competition Policy on Development – Cross-Country Evidence Using Four New Indicators," Journal of Development Studies, 45(8), 1225-1248.

Zhang, Yuhua Bernadine. "SMEs in the APEC Region", APEC Policy Support Unit, Policy Brief No. 8 (3 December 2013), available at http://publications.apec.org/publication-detail.php?pub_id=1484

APPENDIX 1: SME DEFINITIONS IN APEC ECONOMIES

		Employees	Sales / Revenue	Assets	Capital / Investment	Sector
Australia	Micro	< 5				
	Small	5-19				
	Medium	20-199				
Brunei Darussalam	Micro	1-5				
	Small	6-50				
	Medium	51-100				
Canada	Small	1-99				
	Medium	100-499				
Chile	Micro		< UF 2,400			
	Small		UF 2,400 – UF 25,000			
	Medium		UF 25,001 – UF 100,000			
China	SME		≤ RMB 20 million			Agriculture, Forestry, Animal husbandry and Fishery
		< 1000	≤ RMB 400 million			Manufacturing
			≤ RMB 800 million			Construction
		< 200	≤ RMB 400 million			Wholesale Businesses
		< 300	≤ RMB 200 million			Retail
		< 1000	≤ RMB 300 million			Transportation
		< 200	≤ RMB 300 million			Warehousing
		< 1000	≤ RMB 300 million			Postal
		< 300	≤ RMB 100 million			Hotel service, Catering
		< 2000	≤ RMB 1 billion			Information transmission
		< 300	≤ RMB 100 million			Software and Information service
			≤ RMB 2 billion			Real estate
		< 1000	≤ RMB 50 million			Estate management
		< 300	≤ RMB 1.2 billion			Leasing and business service
Hong Kong, China	SME	< 50				Non-manufacturing
		< 100				Manufacturing
Indonesia	Micro	1-4	< IDR 300 million	< IDR 50 million		
	Small	5-19	< IDR 2.5 billion	< IDR 500 million		
	Medium	20-99	< IDR 50 billion	< IDR 10 billion		

		Employees	Sales / Revenue	Assets	Capital / Investment	Sector
Japan	Micro	≤ 20				Manufacturing and Others
		≤ 5				Wholesale Trade
		≤ 5				Service Industry
		≤ 5				Retail Trade
	SME	≤ 300			≤ JPY 300 million	Manufacturing and Others
		≤ 100			≤ JPY 100 million	Wholesale Trade
		≤ 100			≤ JPY 50 million	Service Industry
		≤ 50			≤ JPY 50 million	Retail Trade
Korea	SME		≤ USD 150 million			Manufacturing (6 sectors) Electrical equipment, clothing, bag/shoes wood pulp/paper, primary metal, furniture
			≤ USD 100 million			Manufacturing (12 sectors) Cigarette, automobile, chemical, metal processing food, textile, lumber, oil refinery, rubber/plastic electronic/computer/video/ communication machine/equipment, other transportation equipment
						Agriculture/forestry/fishing wholesale and retail electrical/gas/water works
						Mining, construction
			≤ USD 80 million			Manufacturing (6 sectors) Beverage, printing machine/duplicator, medicine/medical products, nonmetallic mineral, medical service/ precision, other product manufacturing
						Transportation
						Waste water treatment, environmental conservation
						Publication/information service
			≤ USD 60 million			Repair and other personal service
						Business support service
						Science and technology service
						Healthcare/social welfare
						Arts/sports service
			≤ USD 40 million			Lodging/restaurant
						Finance/insurance
						Education service
						Real estate/lease
Malaysia	Micro	< 5	< MYR 300,000			Manufacturing
		< 5	< MYR 300,000			Services and Other Sectors
	Small	5-75	< MYR 15 million			Manufacturing
		5-30	< MYR 3 million			Services and Other Sectors
	Medium	75-200	< MYR 50 million			Manufacturing
		30-75	< MYR 20 Million			Services and Other Sectors
Mexico	Micro	0-10	≤ MXN 4 million			Industry, Trade, Services
	Small	11-50	≤ MXN 100 million			Industry, Services
		11-30	≤ MXN 100 million			Trade
	Medium	51-100	≤ MXN 250 million			Industry
		31-100	≤ MXN 250 million			Trade
		51-100	≤ MXN 250 million			Services

		Employees	Sales / Revenue	Assets	Capital / Investment	Sector
New Zealand	SME	≤ 19				
		≤ 50				
Papua New Guinea	Micro	< 5	< PGK 200,000		< PGK 200,000	
	Small	< 20	< PGK 5,000,000		< PGK 10,000,000	Manufacturing, construction and engineering
	Medium	< 100	< PGK 20,000,000		< PGK 20,000,000	
	Micro	< 5	< PGK 200,000		< PGK 200,000	Agriculture, tourism, forestry, fisheries, service and other sectors
	Small	< 40	< PGK 5,000,000		< PGK 5,000,000	
	Medium	< 100	< PGK 10,000,000		< PGK 10,000,000	
Peru	Micro		≤ 150 UIT			
	Small		≤ 1,700 UIT			
	Medium		≤ 2,300 UIT			
Philippines	Micro	1-9		≤ PHP 3 million		
	Small	10-99		> PHP 3 million – < PHP 15 million		
	Medium	100-199		> PHP 15 million – < PHP 100 million		
Russia	Micro	1-15	≤ RUB 60 million			
	Small	16-100	≤ RUB 400 million			
	Medium	101-250	≤ RUB 1 billion			
Singapore	Micro		< SGD 1 million			
	Small		≥ SGD 1 million – < SGD 10 million			
	Medium		≥ SGD 10 million – < SGD 100 million			
	SME	< 200	< SGD 100 million			
Chinese Taipei	Micro	< 5				
	SME	< 200			≤ TWD 80 million	Manufacturing, Construction, Mining, Quarrying
		< 100	≤ TWD 100 million			Other Sectors
Thailand	Small	≤ 50		≤ THB 50 million		Manufacturing
		≤ 50		≤ THB 50 million		Services
		≤ 25		≤ THB 50 million		Wholesale
		≤ 15		≤ THB 30 million		Retail
	Medium	51-200		> THB 50 million – ≤ THB 200 million		Manufacturing
		51-200		> THB 50 million – ≤ THB 200 million		Services
		26-50		> THB 50 million – ≤ THB 100 million		Wholesale
		16-30		> THB 30 million – ≤ THB 60 million		Retail
United States	Small	< 500				most Manufacturing and Mining industries
			< USD 7.5 million			Non-manufacturing
Viet Nam	Micro	≤10				Agriculture, forestry and fishery; Industry and construction; Commerce and services
	Small	11-200			≤VND 20 billion	Agriculture, forestry and fishery
		11-200			≤VND 20 billion	Industry and construction
		11-50			≤VND 10 billion	Commerce and services
	Medium	201-300			> VND 20 billion – ≤ VND 100 billion	Agriculture, forestry and fishery
		201-300			> VND 20 billion – ≤ VND 100 billion	Industry and construction
		51-100			> VND 10 billion – ≤ VND 50 billion	Commerce and services

Source: Zhang, Yuhua Bernadine. "SMEs in the APEC Region", APEC Policy Support Unit, Policy Brief No. 8 (3 December 2013), available at http://publications.apec.org/publication-detail.php?pub_id=1484; and Appendix 2.

Notes:

1. For Australia, a small business is an actively trading business with 0-19 employees. Actively trading businesses are businesses that have an ABN and are actively remitting in respect of a GST role. Non-employing businesses are sole proprietorships and partnerships without employees, and are considered as small businesses by the Australian Bureau of Statistics (ABS). The employment size ranges are based on "headcount", rather than a measure of full-time equivalent persons. ABS also recognizes that an employment based sizing measure may not be applicable to businesses in certain sectors, such as agriculture, and that financial measures, based on turnover or asset holdings for example, may also be used to classify businesses as SMEs. On certain occasions, small businesses could also be defined by annual turnover.
2. For Canada, SMEs do not include the category of "indeterminate", which are businesses without a Canada Revenue Agency payroll deduction account. The workforce in the "indeterminate" category include contract workers, family members, and/or business owners.
3. For Chile, there is no unique definition of an SME. The Ministry of Planning and Cooperation (MIDEPLAN) defines SMEs based on the number of persons employed using data from the National Socio-economic Survey (CASEN), while the Ministry of Economy (MINECON) defines SMEs based on the level of annual sales using data from the Internal Tax Service (SII). Unidades de Fomento (UF) is a unit of account indexed to the Consumer Price Index; the average of the daily values for 31 August 2012 of one UF was CLP 22,549.68. SMEs in Chile are firms with annual sales up to UF 100,000. Financial institutions define SMEs by the loan size.
4. For China, SMEs are defined by number of employees and operating income. Sector specific definitions for micro, small, and medium enterprises are also available.
5. For Indonesia, the definition of an SME can vary throughout the economy. The State Ministry of Cooperatives and SMEs defines SMEs based on net assets, excluding land and buildings, and annual sales. Statistics Indonesia (BPS) defines SMEs based on employment.
6. For Malaysia, SMEs can be defined based on either total annual sales or revenue or on the number of full time employees. A business only need to fulfil one criteria to be qualified in the size group of SMEs.
7. For New Zealand, SMEs are not officially defined. However, enterprises with fewer than 20 employees have traditionally been used and referred to as small enterprises, e.g. in amendments to the Employment Relations Act.
8. For Peru, the value of Applicable Tax Unit for the year 2013 was equal to USD 1,369.
9. For the Philippines, SMEs can be defined based on either total assets, or on the number of employees.
10. For Singapore, SMEs are defined as enterprises with operating receipts not more than SGD 100 million or employment not more than 200 workers for all sectors. Medium enterprises are defined as enterprises with operating receipts between SGD 10 million and SGD 100 million, or enterprises with operating receipts more than SGD 100 million and employment not more than 200 workers.
11. For Chinese Taipei, SMEs are defined based on either sales revenue or paid-in capital depending on the sector. Other agencies may define SMEs based on the number of regular employees. Other sectors includes Agriculture, forestry, fisheries, animal husbandry; Water, electricity, gas; Wholesale and retail; Transportation; Warehousing and communications; Hotel and restaurant operations; Finance and insurance; Real estate and leasing; Industrial and commercial services; and Social and personal services.
12. For Thailand, fixed assets, excluding land and property, are used.
13. For the United States, SMEs are defined based on either the number of employees or average annual receipts or average assets depending on the sector, with specific size standards for all for-profit industries. Size standards based on the number of employees range from 100 to 1,500 employees, size standards based on average annual receipts range from USD 5.5 million to USD 38.5 million, and for depository institutions and credit card issuing companies, a small enterprise is with less than USD 500 million in average assets.
14. For Viet Nam, SMEs are defined based on registered capital at business registration agencies and/or on the average number of annual permanent employees.

APPENDIX 2: DATA SOURCES FOR SMES

- **Australia**: Small Business Policy Unit, The Treasury, Australian Government; Australian Bureau of Statistics, Counts of Australian Businesses (including Entries and Exits, June 2010 to June 2014) and Australian Industry 2012-2013.
- **Brunei Darussalam**: Department of Economic Planning and Development, based on Economic Census 2007 and 2011.
- **Canada**: Small Business Branch, Industry Canada, Government of Canada; Statistics Canada, Labor Force Survey.
- **Chile**: Internal Revenue Service; Chile Central Bank.
- **China**: On the Issuance of Classification Standards for SMEs, jointly issued by the Ministry of Industry and Information Technology, the National Bureau of Statistics, the National Development and Reform Commission, and the Ministry of Finance.
- **Hong Kong, China**: Census Register of Establishments, Quarterly Survey of Employment and Vacancies, Quarterly Employment Survey of Construction Sites, conducted by Census and Statistics Department of Hong Kong, China.
- **Indonesia**: State Ministry of Cooperatives & SMEs, Indonesia.
- **Japan**: New Small and Medium Enterprise Basic Law, Small and Medium Enterprise Agency, Ministry of Economy, Trade and Industry.
- **Korea**: Small and Medium Business Administration and Small & Medium Business Corporation, Korea.
- **Malaysia**: SME Annual Report 2011/2012 and 2013/2014 by SME Corporation Malaysia; Census of Establishments and Enterprises 2005 and Economic Census 2011 by Department of Statistic Malaysia.
- **Mexico**: Official Gazette of the Federation; National Institute of Statistics and Geography, INEGI.
- **New Zealand**: Statistics New Zealand Business Demography February 2012 and February 2013, Statistics New Zealand National Accounts 2010 and March 2011, Ministry of Business, Innovation & Employment.
- **Papua New Guinea**: Department of Trade Commerce and Industry; Tebbutt Research, Report for SME Baseline Survey for the Small-Medium Enterprise Access to Finance Project; Small Business Development Corporation Survey; Carolyn Blacklock, PNG SME Definition and Market Snapshot.
- **Peru**: Ministry of Production, DIGECOMTE; Ministry of Labor; SUNAT.
- **Philippines**: National Statistics Office and Small and Medium Enterprise Development Council Resolution.
- **Russia**: Rosstat; Federal Tax Service of Russia.
- **Singapore**: Department of Statistics, Singapore; Economic Development Board, Singapore; Spring Singapore.
- **Chinese Taipei**: White Paper on SMEs, Chinese Taipei; Industry, Commerce and Service Census; Small and Medium Enterprise Administration, Ministry of Economic Affairs, Chinese Taipei.
- **Thailand**: Ministry of Industry, Thailand; Office of SME Promotion of Thailand; the Office of National Economic and Social Development Board, Thailand.
- **United States**: Small Business Size Standards, Small Business Administration, United States; Country Business Patterns.
- **Viet Nam**: Agency for Enterprise Development, Ministry of Planning and Investment.