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# A Report on Enhancing Labour Mobility in the APEC Region

APEC Human Resources Development Working Group

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THE AUSTRALIAN APEC STUDY CENTRE
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# A Report on Enhancing Labour Mobility in the APEC Region

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APEC Project

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# EXECUTIVE SUMMARY

In November 2014, leaders of the 21-member Asia-Pacific Economic Cooperation (APEC) forum, in their quest to further regional connectivity and integration, declared that that "much work needs to be done to ease existing barriers to interaction and mobility and to develop joint endeavours that will support seamless flows of people". This statement highlights the priority that APEC has placed on developing an effective framework to manage and enhance international labour mobility.

A well-functioning international labour market produces strong economic gains and job opportunities. Estimates of the potential gains are in the trillions of dollars and orders of magnitude larger than those from freeing merchandise trade or capital flows.

The APEC region encompasses some of the world's key labour mobility origin (Mexico and the Philippines) and destination (United States, Canada and Australia) economies. APEC government, businesses and communities are keenly aware of the potential benefits of promoting the effective management of international labour mobility to drive growth and development in both source and destination economies and are exploring next step policy options. It is however a multifaceted and complex challenge.

Past research within APEC has identified a wide array of issues for consideration to develop a coherent labour mobility policy framework for the region and work proceeds in multiple APEC fora across this front. Identified challenges include concerns over the loss of skills ('brain drain') from developing economies concerns over poor conditions of work, recognition of qualifications, impacts on employment and wages in receiving economies, and considerations around migration policy settings. Policy options to address these challenges need to be carefully assessed in terms of potential benefits, costs and development implications, and then tested for efficiency through pilot studies.

This report was commissioned to generate additional knowledge about labour mobility in the Asia-Pacific region, at present and over time, to inform APEC member economies' deliberations about options to manage regional demand and enhance worker mobility to optimise potential benefits such as reducing unemployment, boosting productivity, addressing labour force imbalances, and contributing to economic development.

Within the bounds of existing data, the report:

- Describes patterns and trends in international labour mobility both globally and within the APEC region.
- Provides a quantitative analysis of labour flows and their determinants around the world and APEC economies using key baseline indicators.
- Discusses major push and pull factors determining international labour mobility.
- Reviews the global literature, along with policies pertaining to labour mobility in the region.

This report maps current labour flows in the Asia-Pacific region (and globally) and analyses the data via a two tiered approach, suggesting key baseline indicators, in the context of broader economic, demographic and labour market developments in the region. Using advanced panel data econometric techniques to model population flows at the macroeconomic level, the analysis controls for external and unobserved characteristics and focuses on key macroeconomic variables that can affect total and skilled migration at the national level.

This analysis of labour flows shows that approximately half of all foreign workers from developing economies go to other developing economies (South-South flows) and over 70 per cent of those from developed APEC economies live in other developed economies. Since almost all policy attention has been focused on enhancing labour mobility from developing to developed economies, this analysis provides new insights for consideration. It highlights additional issues for consideration such as poverty and the cost of relocation which can constrain mobility and concentrate the circulation of unskilled labour within developing economies. It further considers a number of other characteristics which might be hindering productive flows of labour between developing and developed economies in APEC.

A variety of theoretical models explain population flows, centred on wage differentials between origin and destination economies, with limited focus on the roles of other important factors in explaining labour mobility. The report reviews the major push and pull factors determining international labour mobility, confirming that labour flows respond most to expected increases in income as predicted by economic theory, but also examines the significance of a number of other factors influencing labour mobility decisions, including: increasing costs of living; high levels of government expenditure, low levels of educational opportunity; high levels of imports; demographic pressures; an underdeveloped export market; and unemployment. This report helps fill this gap in our understanding.

This is complemented with a micro-level analysis through three case studies of foreign workers in two developing economies (Peru and Mexico) and one developed economy (United States) that infers the determinants of international population flows and the conditions of mobile labourers at the household level. This focus on labour-sending households in developing economies and foreign workers in developed economies highlights some further key issues affecting the social status of workers moving between developing economies and from developing to developed economies, such as market discrimination based on nationality.

This two-tiered approach to the quantitative analysis allows us to highlight key policy issues, such as trade liberalisation and government expenditure, as well as isolating the effects of microeconomic programs that influence educational attainment, income and wealth.

The report also describes a number of existing policies pertaining to labour mobility in APEC economies, highlighting positive practices in the region. This analysis can usefully inform discussion about lessons that can be learned from these practices and their contributions to regional labour mobility.

Additionally, the report considers recent patterns and trends in demographic changes in APEC economies and potential labour force imbalances, to further inform the development of regional strategy into the future. Demographic developments will be of growing importance for the APEC region as most APEC populations are ageing and each worker will be called on to support a growing number of old age dependents. This may lead to falling living standards and be a factor in pushing labour to move to economies with better economic prospects.

This is an area of policy development that will require significant inputs in coming years. There is a strong need for APEC to support and promote the collation of further data on an ongoing basis to support rigorous analysis of labour mobility trends, costs and benefits. This will strengthen the evidence base needed to develop an effective APEC-specific framework with short to medium strategies to enhance labour mobility. Existing and new initiatives can then be tested against such data and through judicious pilot programs, further data can be gathered and utilised.

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APEC – Asia Pacific Economic Cooperation
ABAC – APEC Business Advisory Council
ADB – Asian Development Bank
ASEAN – Association of South East Asian Nations
AQRF – ASEAN Qualification Reference Framework
CBN – Capacity Building Network
CPI – Consumer Price Index
EPS – Employment Permit System
FDI – Foreign Direct Investment
FTA – Free Trade Agreement
GATS – General Agreement on Trade in Services
GDP – Gross Domestic Product
HRD – Human Resources Development
IPUMS – Integrated Public Use Microdata Series
ILO – International Labour Organization
IME – Instituto de los Mexicanos en el Exterior (Institute for Mexicans Abroad)
IMF – International Monetary Fund
LSPN – Labour and Social Protection Network
MENA – Middle East and North Africa
MOU – Memorandum of Understanding
NAFTA – North American Free Trade Agreement
NSTDA – National Science and Technology Development Agency
OECD – Organization for Economic Co-operation and Development
PIC – Pacific Island Countries
POEA – Philippines Overseas Employment Administration
RBD – Reverse Brain Drain Project
RSE – Recognized Seasonal Employer
SIDS – Small Island Developing States
SME – Small and Medium Size Enterprise
UN – United Nations
WDI – World Development Indicators
WTO – World Trade Organization

# 1. INTRODUCTION

Labour mobility is a high priority in international and regional policy debates. A well-functioning international labour market produces strong economic gains and job opportunities. Addressing mismatches between labour supply and demand allows governments opportunities to contribute to growth and development in source and destination economies.

With Asia Pacific Economic Cooperation's (APEC) increasing focus on regional connectivity and integration, its Leaders declared in November 2014 that "much work needs to be done to ease existing barriers to interaction and mobility and to develop joint endeavours that will support seamless flows of people".

This same sentiment was expressed in the APEC Connectivity Blueprint for 2015-2025 and in the 2015 APEC Human Resources Development (HRD) Ministerial Statement emphasized the significance of promoting the effective management of labour mobility and encouraged further research and dialogue on the issue. The business community of APEC represented by the APEC Business Advisory Council (ABAC) strongly endorse work on enhancing labour mobility and see this as a major challenge for promoting competitive business development across the region. ABAC proposes measures under the 'Earn, Learn and Return' concept.

The focus of this report is on labour mobility in APEC member economies and policies to enhance the net benefits of that mobility. The APEC region is crucial to understanding migration flows internationally because it encompasses some of the world's key labour mobility origin (Mexico and the Philippines) and destination (United States, Canada and Australia) economies. Moreover, it is a region that has become increasingly integrated in recent years via the creation of trade and investment opportunities and regional policies promoting economic integration.

The potential benefits from enhanced labour mobility are huge. Clemens (2011) reviews estimates of the gains from eliminating barriers to labour mobility and finds they would be one or two orders of magnitude larger that the gains from freeing trade and capital flows – often in the range of 50-150 per cent of world GDP, or trillions of dollars. Even elimination of labour mobility barriers for less than 5 per cent of the population is found to bring global gains greater than those from eliminating all policy barriers to merchandise trade and all barriers to capital flows. These claims are supported by the fact that observed international price wedges between labour markets are proportionately greater than those between different goods and capital markets.

Awareness of the potential gains is nothing new. Hamilton and Whalley (1984) also found that annual gains from removing restrictions on labour mobility could easily surpass global output produced in the presence of the restrictions. Moses and Letnes (2004) similarly found that efficiency gains from liberalizing mobility controls could exceed world GDP and had risen substantially from 1977 to 1998.

This report analyses a number of macroeconomic and microeconomic indicators that measure migration flows and highlights issues to inform the ongoing development of policy strategies at national and regional level to realize some of these potential benefits. This report:

- Describes patterns and trends in international labour mobility both globally and within the APEC region.

- Describe recent patterns and trends in demographic changes within the APEC region.
- Reviews and synthesises reports and papers from international organisations and academic bodies on migration.
- Uses existing data sources to provide a quantitative analysis of labour flows and their determinants around the world and APEC economies using key baseline indicators.
- Reviews and advises on the major barriers to labour mobility and recommends approaches to address these barriers.
- Advises on the major push and pull factors determining international labour mobility and offers policy recommendation on that basis.

In the macro-level component we control for external and unobserved characteristics before focusing on key macroeconomic variables that can affect total and skilled migration at a national level. Policy recommendations are inferred from this exercise.

The macroeconomic component of the study focuses on net population flows, as in most other studies, because many of those regarded as temporary, such as foreign students, can add to the population for what may amount to several years. Thus, like permanent residents, they require goods and services, such as food, accommodation and transport, and in many cases contribute to the host economy's labour force. They are, therefore, part of the resident population when considering these and other economic and social impacts (Productivity Commission, 2010).

In the micro-level component, we complement our macro-level findings with an analysis that infers the determinants of international population flows and the conditions of mobile labourers at the household level. This component allows us to focus on migrant-sending households in developing \economies and foreign workers in developed economies.

This two-tiered approach to the quantitative analysis allows us to highlight key policy recommendations, such as trade liberalisation and government expenditure, as well as isolating the effects of microeconomic programmes that influence educational attainment, income and wealth.

The report is structured in nine chapters as follows. The next chapter presents a brief overview of the trends and patterns of international labour movements in APEC member economies. Chapter 3 presents a review of existing policies focusing on agreements on labour mobility in these economies. Chapter 4 discusses the extant international literature on labour movements across the globe. Chapter 5 provides our macroeconomic data analysis, while Chapters 6 and 7 focus on microeconomic-level data from developing economies (Mexico and Peru) and a developed economy (the United States), respectively. Chapter 8 provides a review of macroeconomic and microeconomic policy recommendations. Chapter 9 concludes the report.

## 2. TRENDS AND PATTERNS OF POPULATION FLOWS

The APEC region contains developed and developing economies, ranging from some of the world's largest and developed economies to smaller emerging economies. Population exchange patterns differ greatly between these nations. The literature suggests that some nations are net recipients of mobile labour, while others should be net migrant senders, depending on relative wages. Table 1 shows the net rates of international population flows per year for APEC economies.

**Table 1.** Net population flows (per year, thousands) 1950-2015

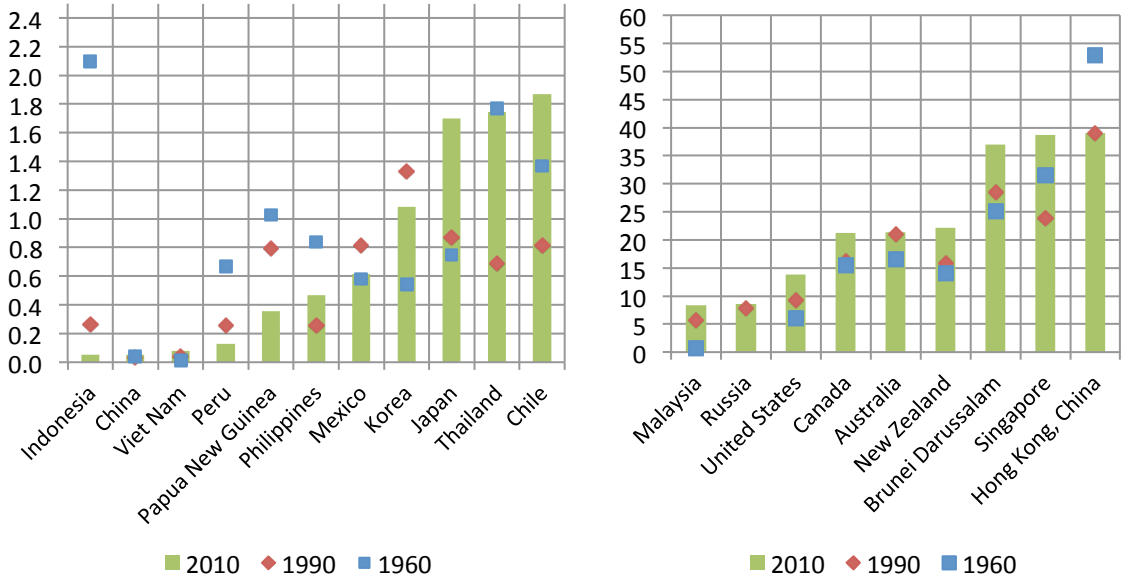
| | 1970s | 1980s | 1990s | 2000s | 2010-15 |
|---|---|---|---|---|---|
| Australia | 50.0 | 112.0 | 87.5 | 181.0 | 205.0 |
| Brunei Darussalam | 1.5 | 0.0 | 0.5 | 1.0 | 0.0 |
| Canada | 121.0 | 125.0 | 146.0 | 228.0 | 220.0 |
| Chile | -16.0 | -10.0 | 15.0 | 23.3 | 40.2 |
| China | -154.5 | -49.5 | -143.0 | -434.5 | -360.0 |
| Hong Kong, China | 46.5 | 24.0 | 75.5 | 0.5 | 30.0 |
| Indonesia | -33.0 | -36.5 | -54.0 | -126.5 | -140.0 |
| Japan | 50.0 | -42.0 | 46.5 | 106.5 | 70.0 |
| Republic of Korea | -61.5 | 75.0 | -115.0 | 24.0 | 60.0 |
| Malaysia | -3.5 | 59.5 | 70.0 | 114.0 | 90.0 |
| Mexico | -178.0 | -328.0 | -263.5 | -325.0 | -104.0 |
| New Zealand | 0.0 | -1.5 | 16.5 | 19.5 | 1.3 |
| Papua New Guinea | -1.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Peru | -3.5 | -26.0 | -65.0 | -135.0 | -50.0 |
| Philippines | -55.5 | -47.5 | -147.0 | -236.5 | -140.0 |
| Russian Federation | 35.0 | 201.0 | 453.0 | 389.0 | 220.0 |
| Singapore | 2.0 | 26.0 | 50.5 | 88.5 | 80.0 |
| Chinese Taipei | - | - | - | - | - |
| Thailand | 69.0 | 84.5 | -51.5 | 39.5 | 20.0 |
| United States | 671.5 | 755.0 | 1292.5 | 1054.5 | 1000.0 |
| Viet Nam | -81.5 | -65.5 | -72.0 | -165.0 | -40.0 |

**Source**: UNDESA (2015) World Population Prospects: The 2015 Revision, Medium Variant

Over 45 years, these economies have had varied experiences with population flows. Some have been net sending economies (China, Indonesia, Mexico, Peru, Philippines, and Viet Nam). Some have changed from net sending to net receiving economies (Chile, Japan, New Zealand, Republic of Korea, and Thailand). The rest have consistently imported labour from other economies. Figure 1 confirms that relatively richer economies, such as Australia, Canada, Hong Kong, New Zealand, Singapore and the United States are net migrant recipients, while other economies are generally net migrant senders. Figure 1 shows the international foreign population stock as a percentage of the population for APEC economies over the period 1960-2010. The total stock of foreign population increased from 22 million in 1960 to 81 million in 2010. Over this period, Japan, Korea and the United States nearly

doubled their foreign population stock, while growth rates of foreign population slowed in Australia, Canada, China, Mexico, Singapore and Thailand in 2010 compared to the 1950s, and reductions were observed in Hong Kong, Peru, Philippines and PNG.

**Figure 1.** Foreign Population Stock, % of population, 1960-2010




**Note**: Economies with less than 1 per cent on the left, with more than 5 per cent on the right
**Source**: WDI (2015)

## 2.1. Globalisation and Population Flows

The impact of globalisation over the last three decades has been generally positive. The economies of APEC have significantly benefited from liberalisation of markets and increased flows of trade, finance, and information, as well as flows of people between economies. Growing international trade in recent years has benefited APEC economies, reinforced by the liberalisation of product and capital markets. The KOF Globalisation Index[1] (Table 2), which measures the economic, social and political dimensions of globalisation has shown a rising trend for APEC economies since the 1970s. China, Indonesia, Philippines, Thailand and Viet Nam's values rose by more than 100 per cent over the period from 1970 to 2012. Lower scores were observed mainly for developed economies. Singapore, Canada, Australia, Malaysia and New Zealand were among the leading globalised economies in 2012.

[1] KOF is the acronym for the German word "Konjunkturforschungsstelle", which means 'business cycle research institute'. A higher value for the index indicates a higher degree of globalisation.

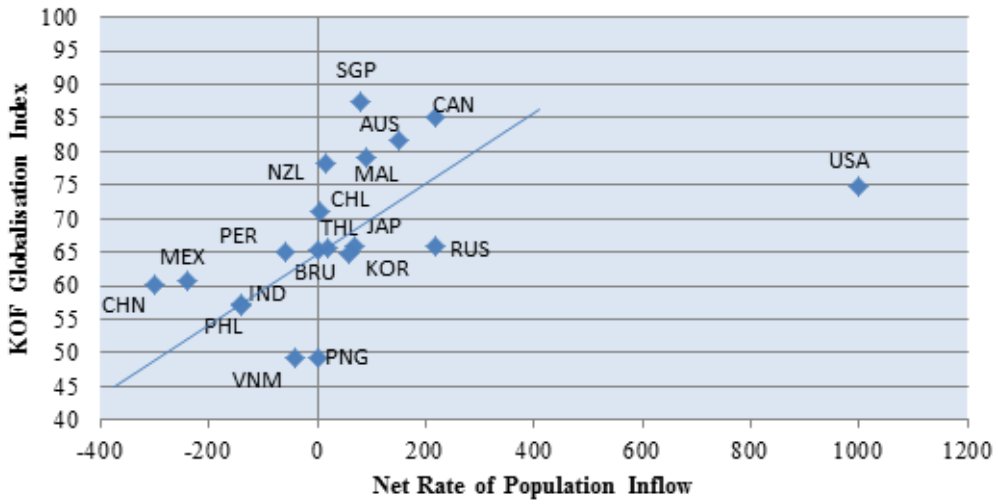
**Table 2.** KOF Index of Globalization for APEC economies

| | 1970s | 1980s | 1990s | 2000s | 2011 | 2012 | % growth 1970s - 2012 |
|---|---|---|---|---|---|---|---|
| Australia | 62.4 | 70.3 | 77.6 | 82.0 | 82.7 | 81.6 | 30.8% |
| Brunei Darussalam | - | 50.0 | 57.2 | 60.8 | 65.2 | 65.4 | 30.8% |
| Canada | 73.7 | 79.4 | 83.8 | 87.1 | 85.4 | 85.0 | 15.4% |
| Chile | 47.3 | 51.2 | 60.5 | 71.2 | 72.0 | 71.1 | 50.4% |
| China | 20.9 | 25.3 | 43.4 | 58.6 | 60.1 | 60.1 | 188.3% |
| Indonesia | 28.4 | 30.7 | 44.2 | 54.7 | 56.8 | 57.4 | 102.2% |
| Japan | 38.5 | 43.5 | 53.0 | 62.6 | 64.6 | 65.9 | 70.9% |
| Republic of Korea | 29.2 | 36.7 | 50.2 | 62.4 | 64.3 | 64.7 | 85.5% |
| Malaysia | 42.6 | 51.7 | 63.7 | 76.4 | 79.3 | 79.1 | 47.7% |
| Mexico | 41.1 | 45.8 | 55.9 | 58.5 | 60.6 | 60.8 | 36.2% |
| New Zealand | 57.5 | 63.7 | 72.1 | 79.2 | 78.9 | 78.3 | 87.6% |
| Papua New Guinea | 32.6 | 35.1 | 36.5 | 42.7 | 49.6 | 49.2 | 90.2% |
| Peru | 34.7 | 36.8 | 43.7 | 60.6 | 65.7 | 65.1 | 50.9% |
| Philippines | 30.0 | 39.0 | 46.3 | 57.0 | 57.0 | 57.1 | 121.4% |
| Russia | - | - | 47.1 | 65.4 | 65.3 | 65.9 | 40.0% |
| Singapore | 61.4 | 74.7 | 82.8 | 87.1 | 88.3 | 87.5 | 42.5% |
| Chinese Taipei | - | - | - | - | - | - | - |
| Thailand | 27.1 | 32.5 | 45.3 | 60.5 | 64.0 | 65.6 | 141.8% |
| United States | 60.0 | 66.4 | 73.2 | 75.9 | 74.8 | 74.8 | 24.8% |
| Viet Nam | 19.1 | 20.8 | 29.6 | 42.4 | 48.1 | 49.1 | 157.5% |

**Note**: % of Growth for Brunei and Russia is for 1980s-2012 and 1990s-2012 respectively
**Source***:* Dreher, Axel (2006): Does Globalization Affect Growth? Evidence from a new Index of Globalization, *Applied Economics 38*, 10: 1091-1110. Data has been updated in 2015.

It can be expected that a rising globalisation index leads to more labour flows, thus turning the economy from net sending to net receiving status. This phenomenon is represented in Figure 2, which shows a scatterplot relating the Globalisation Index to Net Overseas Population Flows in APEC economies for 2012. As the figure reveals, the higher the globalisation index, the more labour the economy receives. The United States scores the highest labour inflow levels among economies in this sample.

**Figure 2.** Net Population Flows and Globalization Index for APEC economies, 2012




**Source***:* UNDESA (2015); Dreher (2006); Authors' calculations

## 2.2. Demographic Trends

APEC economies are currently experiencing rapid transformation of their populations, leading to significant impacts on labour mobility across economies. This is creating major challenges for policymakers due to likely economic impacts on consumption, disposable income, savings and investment. As the developed world looks to developing economies to fill the shortage of working age population, wage differentials and migration policies, as well as economic growth and other demand (pull) and supply (push) conditions will be crucial both for sending and receiving economies (Wilson *et al*. 2012). Table 3 shows historical, current and future demographic trends to 2030 for APEC member economies. According to the United Nations (UN) medium fertility population projections, strong growth rates are expected in Malaysia, Philippines, Australia, and PNG. Shrinking population will be a major concern for the governments of Japan, Thailand and Russian Federation. China and the Republic of Korea will experience slowing growth rates. Other economies are predicted to follow a modest path of population growth until 2050.

**Table 3.** Total population and projections, mln, 1950-2050

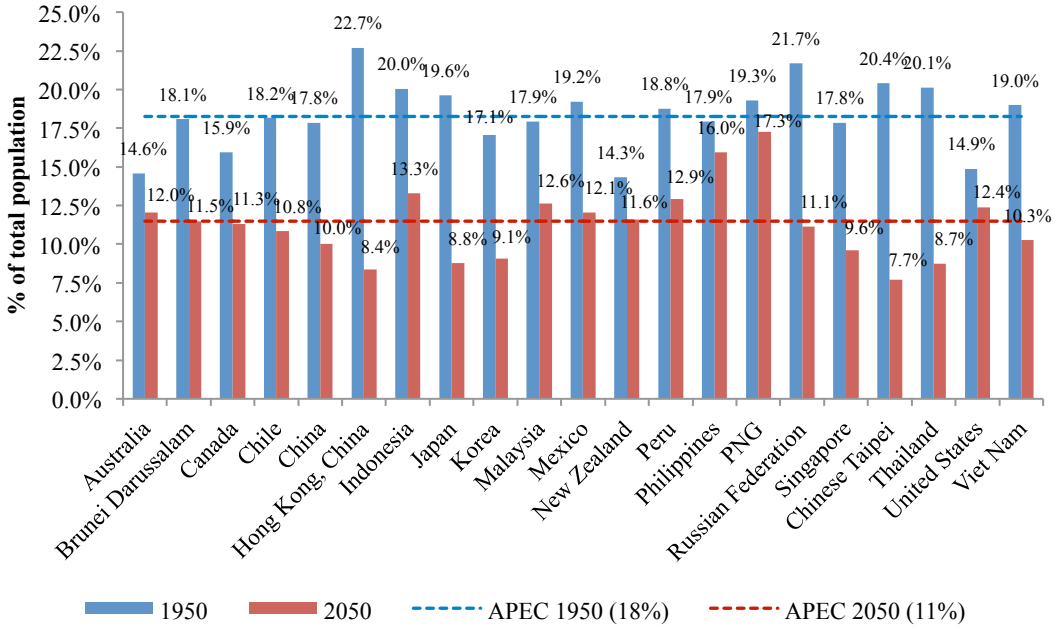
| | 1950 | 1970 | 1990 | 2010 | 2030 | 2050 | % of growth 2010-2015 |
|---|---|---|---|---|---|---|---|
| Australia | **8.2** | **12.9** | **17.1** | **22.4** | **28.3** | **33.7** | **50.4%** |
| Brunei Darussalam | **0.0** | **0.1** | **0.3** | **0.4** | **0.5** | **0.5** | **25.0%** |
| Canada | **13.7** | **21.4** | **27.7** | **34.1** | **40.6** | **45.2** | **32.6%** |
| Chile | **6.1** | **9.6** | **13.2** | **17.2** | **19.8** | **20.8** | **20.9%** |
| China | **543.8** | **814.4** | **1165.4** | **1359.8** | **1453.3** | **1385.0** | **1.9%** |
| Hong Kong, China | **2.0** | **4.0** | **5.8** | **7.0** | **7.9** | **8.0** | **14.3%** |
| Indonesia | **72.6** | **114.1** | **178.6** | **240.7** | **293.5** | **321.4** | **33.5%** |
| Japan | **82.2** | **103.7** | **122.2** | **127.4** | **120.6** | **108.3** | **-15.0%** |
| Republic of Korea | **19.2** | **31.4** | **43.0** | **48.5** | **52.2** | **51.0** | **5.2%** |
| Malaysia | **6.1** | **10.9** | **18.2** | **28.3** | **36.8** | **42.1** | **48.8%** |
| Mexico | **28.3** | **53.0** | **86.1** | **117.9** | **143.7** | **156.1** | **32.4%** |
| New Zealand | **1.9** | **2.8** | **3.4** | **4.4** | **5.2** | **5.8** | **31.8%** |
| Papua New Guinea | **1.7** | **2.4** | **4.2** | **6.9** | **10.0** | **13.1** | **89.9%** |
| Peru | **7.6** | **13.2** | **21.8** | **29.3** | **36.5** | **41.1** | **40.3%** |
| Philippines | **18.6** | **35.8** | **61.9** | **93.4** | **127.8** | **157.1** | **68.2%** |
| Russian Federation | **102.8** | **130.4** | **148.1** | **143.6** | **133.6** | **120.9** | **-15.8%** |
| Singapore | **1.0** | **2.1** | **3.0** | **5.1** | **6.6** | **7.1** | **39.2%** |
| Chinese Taipei | **7.6** | **14.8** | **20.4** | **23.2** | **23.3** | **20.4** | **1.4%** |
| Thailand | **20.6** | **36.9** | **56.6** | **66.4** | **67.6** | **61.7** | **-7.1%** |
| United States | **157.8** | **209.9** | **254.5** | **312.2** | **362.6** | **400.9** | **28.4%** |
| Viet Nam | **24.9** | **43.8** | **68.9** | **89.0** | **101.8** | **103.7** | **16.5%** |

**Note**: Population Estimates and Projections (Medium fertility) by UN Population Division
**Source***:* United Nations (2015); Data for Chinese Taipei: National Development Council, "Population Projections for Chinese Taipei:" (1950, 2015).

Demographic changes will be accompanied by variations in the age structure. Bloom et al. (2000), for example show that a decline in working age share has a negative effect on economic growth. Figure 3 depicts expected changes in the 15-24 age group. The figure shows substantially higher population shares of 15-24 year olds in less developed economies than in developed economies. This is explained by a reduction of infant mortality but with

mothers still having high fertility rates, leading to a larger share of children and young adults in the population. This is known as the 'youth bulge' (Fuller and Hoch, 1998). While a young population can provide a demographic dividend for the economy, it can at the same time create problems for policymakers as this group is prone to various types of risk-behaviour such as smoking, drinking, and drug use (East-West Center, 2002) and high risk of unemployment. Over the course of 1950 to 2050 a higher than average reduction in the 15-24 age group is predicted for Canada, Chile, China, Hong Kong, Japan, Russia, Singapore, Thailand and Viet Nam. The average share in this age group of the total population of APEC economies is expected to decline from 18% in 1950 to 11% in 2050.

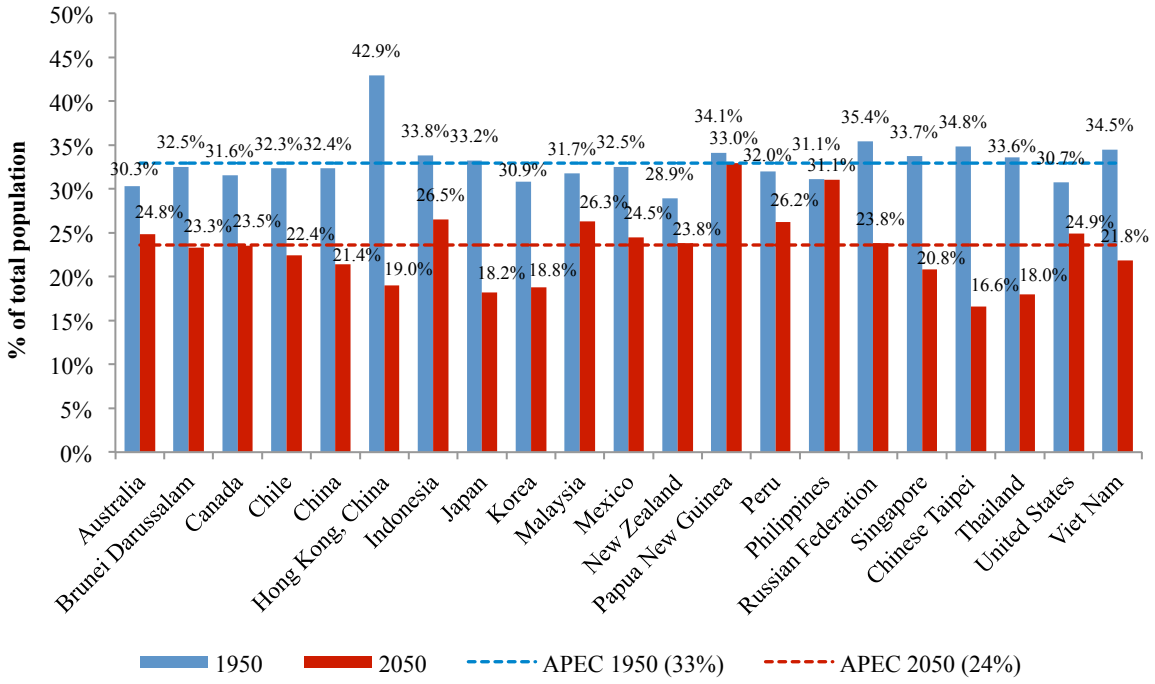
**Figure 3.** Population projections for APEC economies (Age group 15-24)




**Source**: United Nations (2015); Data for Chinese Taipei: National Development Council, "Population Projections for Chinese Taipei:" (1950, 2015).

International migration is strongly concentrated in the age groups of 15 to 34 which are shown in Figure 4 below. The reduction of population in this age group is more pronounced than age group 15-24, with the average proportion of this age group falling from 33% in 1950 to 24% in 2050. As shown in Figure 4, the largest drop among net sending economies (China, Indonesia, Mexico and Philippines) is expected in China, which could even transition to a net receiving economy if a sufficient combination of slower productivity growth, lower wage growth, and higher rate of ageing occurs there relative to other economies. Conversely, the Philippines will overtake every other economy in terms of exports of labour by 2050 due to its higher population growth rate resulting in a more minor reduction in the share of 15-34 year olds. However, a favourable policy environment in the Philippines could also lead to higher economic growth due to the demographic dividend and thus reduce the number of people seeking work in other economies.

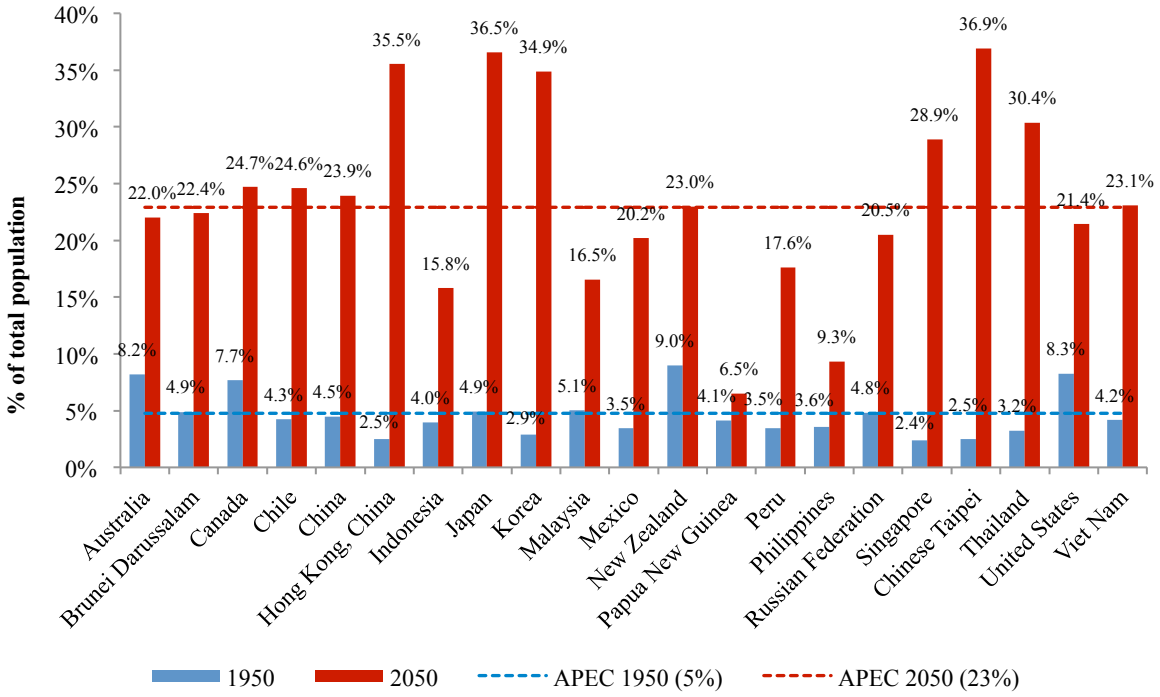
**Figure 4.** Population projections for APEC economies (Age group 15-34)




**Source**: United Nations (2015); Data for Chinese Taipei: National Development Council, "Population Projections for Chinese Taipei:" (1950, 2015).

In reviewing the structure of population across APEC economies, special attention should be given to an ageing population, which is mainly attributed to a falling fertility rate and longer life expectancy. Figure 5 reveals that the share of population aged 65+ (considered 'old age') will rise to unprecedented levels in many APEC economies by 2050. Approximately one third of the population will be in this category in Japan, Hong Kong, Korea, Thailand and Singapore; and roughly one fourth of the population is expected to be old age in Canada, Chile, China, Viet Nam, New Zealand, Brunei and Australia; one fifth is predicted for USA, Russia, Mexico and Peru by 2050 with remaining economies exhibiting lower shares. These demographic trends will have significant impacts on government budgets and the economy as a whole, accompanied by a falling share of the productive working population that will have to bear extra costs for pensions, social security and health care.

**Figure 5.** Population projections for APEC economies (Age group 65+)

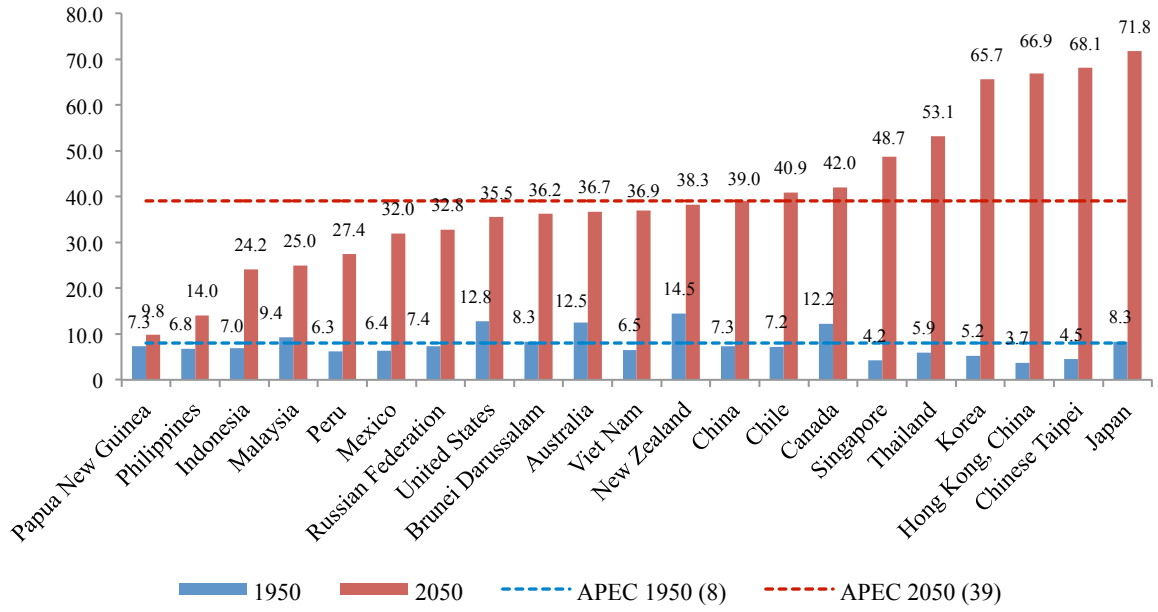



**Source**: United Nations (2015); Data for Chinese Taipei: National Development Council, "Population Projections for Chinese Taipei:" (1950, 2015).

United Nations projections of the old age dependency ratio and total dependency ratio for 1950 and 2050 are reported in Figure 6 and Figure 7. Ageing will reach extreme levels in Japan, Hong Kong, Korea, Thailand and Singapore. On average 1.4 people of working age will have to support each aged person 65+ in Japan economically, 1.5 people in Hong Kong and Korea, 1.9 people in Thailand, and 2.05 people in Singapore by 2050 compared to 12 people in Japan, 27 people in Hong Kong, 19 people in Korea, 17 people in Thailand, and 24 people in Singapore in 1950. Roughly 2.5 to 3.5 working age people will be supporting each elderly person in Canada, Chile, China, New Zealand, Viet Nam, Australia, Brunei, USA, Russia and Mexico by 2050 compared to 7 to 15 people in 1950. A smaller burden is expected for the working age populations in PNG, Philippines, Indonesia and Malaysia.

Some argue that the burden of ageing population will be less pronounced due to a falling share of population of the 0-15 age group as well. Figure 7 represents the total dependency ratio. In 10 APEC economies, the total dependency ratio will exceed its 1950 levels by 2050, whereas the other half will experience reductions. Nevertheless, it is worthwhile to note that major government expenditures are larger for older age people compared to young population (rising health costs are likely to more than offset education savings). Thus, the impact of rising old age dependency should not be underestimated.

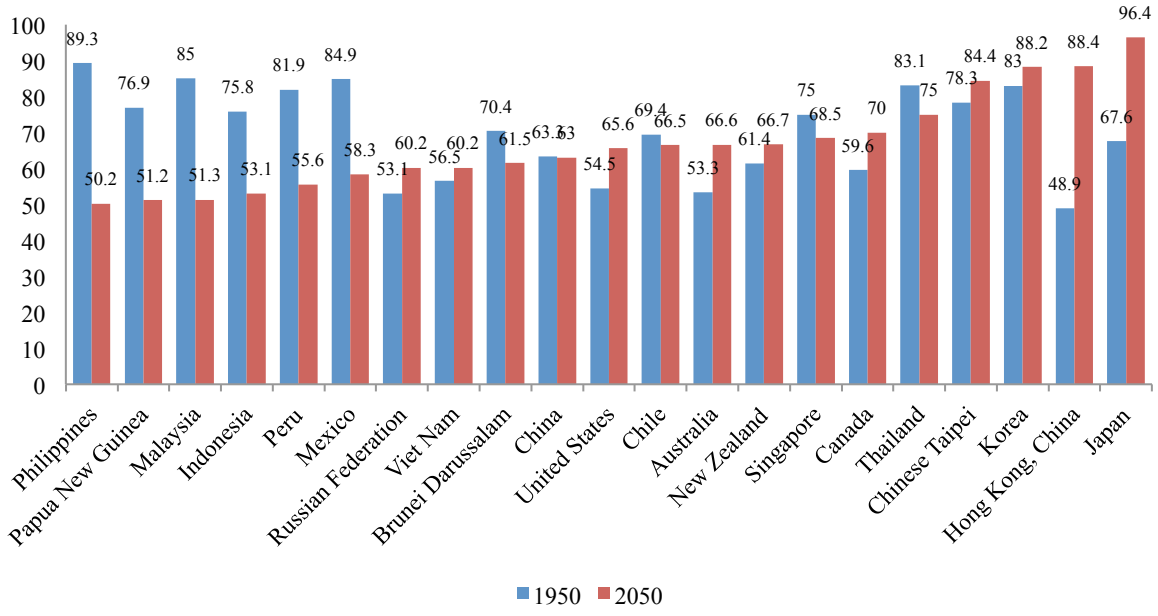
**Figure 6.** Old-age dependency ratio (ratio of population aged 65+ per 100 population 15-64)




**Source**: United Nations (2015); Data for Chinese Taipei: National Development Council, "Population Projections for Chinese Taipei:" (1950, 2015).

**Figure 7.** Total dependency ratio

(ratio of population aged 0-14 and 65+ per 100 population 15-64)




**Source**: United Nations (2015); Data for Chinese Taipei: National Development Council, "Population Projections for Chinese Taipei:" (1950, 2015).

The demographic changes described above are extraordinary and will impact on income and consumption, savings and investment, as well as governments' abilities to support future economic growth (Wilson et al., 2012). While some argue that ageing population problems can be solved by raising retirement ages, increasing participation rates of women and improving productivity, the burden of ageing cannot be eliminated altogether and such efforts will likely only partially offset the effects. Addressing the dependency imbalance across APEC economies under current arrangements will not lead to significant changes in working age population. Thus, accommodative policies in labour mobility are required for more balanced growth (Clemens, 2011) and to address population shocks during a transition to a new steady state.

## 2.3. Remittances

Remittances of earnings from overseas workers to developing economies are receiving increasing attention in academic and policy circles (see for example, de-Haas and Rodriguez, 2010). Remittance inflows worldwide are estimated to be at around US$400 billion and have become the largest source of external financing for a large number of developing nations (Ratha, 2005). Remittances make up, on average, 5 per cent of GDP in developing economies. Among developing economies in the APEC region, remittances make up around 2 per cent of GDP.

Some authors have highlighted that the macroeconomic effects of remittances to developing economies can sometimes be negative. For example, remittances have been found to increase inflation (Narayan et al., 2011). Moreover, Amuedo-Dorante and Pozo (2004) find evidence that remittances can cause the exchange rate to appreciate, thus hurting the (usually labour-intensive) export sector. Posso (2012) finds evidence that remittances can have a negative labour force participation effect by increasing the reservation wage of recipients (the wage at which they are willing to enter the labour force).

However, by and large, rising remittances to developing economies have positive macroeconomic effects. Page and Plaza (2006), for instance, show that remittances are positively correlated with growth in host economies. Moreover, there is now evidence to indicate that remittance inflows increase health and education, while lowering inequality and poverty (World Bank, 2006). Therefore, remittances are now seen as not only an indispensable part of economic survival, but also as a source of social protection and a powerful tool in poverty alleviation (Hansen 2012; Jimenez and Brown 2013).

Development economists have generally found that labour mobility (mainly international labour mobility) provides large benefits to the poor in developing economies through remittance flows. In addition, remittances provide capital to generate new enterprises (Posso, forthcoming), with positive employment outcomes. The World Bank (2006) also found that remittances directly increase the income of recipients, which helps smooth household consumption, especially in response to adverse events, such as crop failure or a health crisis.

Remittance inflows may exceed foreign direct investment, portfolio flows from financial markets, and official development assistance for some developing economies, amounting to a substantial portion of their imports and a nontrivial fraction of GDP. However, although generally assumed to be beneficial, remittances are not necessarily associated with an increase in domestic investment or a more efficient allocation of domestic investment. Some remittance recipients rationally substitute unearned remittance income for labour income and, since labour and capital are complementary goods in production, this can negatively affect

capital accumulation. Statistical analysis by the International Monetary Fund (IMF) finds no statistically significant effect of remittances on GDP growth (IMF 2008).

Table 4 and Figure 8 show that remittance inflows have benefited many economies in the APEC region, particularly Mexico, the Philippines and China. It is not surprising that these economies have a large number of their labour forces residing and working in other nations.

**Figure 8.** Remittance inflows, 1995 and 2013

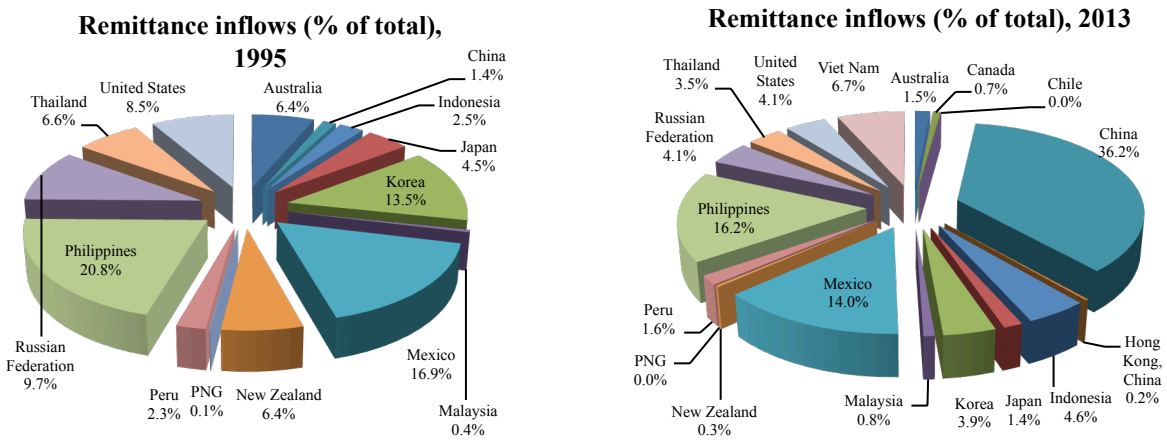



**Table 4.** Remittance inflows (% of GDP)

| | 1990-1995 | 1996-2000 | 2001-2005 | 2006-2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|
| Australia | 0.55% | 0.49% | 0.40% | 0.15% | 0.18% | 0.16% | 0.16% |
| Brunei Darussalam | - | - | - | - | - | - | - |
| Canada | - | - | 0.08% | 0.08% | 0.07% | 0.07% | 0.07% |
| Chile | 0.00% | 0.02% | 0.01% | 0.00% | - | - | 0.00% |
| China | 0.05% | 0.16% | 0.39% | 0.98% | 0.84% | 0.70% | 0.64% |
| Hong Kong, China | - | 0.08% | 0.11% | 0.15% | 0.14% | 0.14% | 0.13% |
| Indonesia | 0.20% | 0.64% | 0.91% | 1.31% | 0.82% | 0.82% | 0.88% |
| Japan | 0.02% | 0.03% | 0.03% | 0.03% | 0.04% | 0.04% | 0.05% |
| Republic of Korea | 0.75% | 0.94% | 0.84% | 0.56% | 0.55% | 0.54% | 0.49% |
| Malaysia | 0.25% | 0.28% | 0.55% | 0.64% | 0.42% | 0.43% | 0.45% |
| Mexico | 1.00% | 1.19% | 2.08% | 2.45% | 2.02% | 1.97% | 1.83% |
| New Zealand | 1.87% | 1.17% | 1.16% | 0.29% | 0.28% | 0.27% | 0.25% |
| PNG | 0.38% | 0.25% | 0.19% | 0.08% | 0.14% | 0.09% | 0.10% |
| Peru | 0.78% | 1.25% | 1.59% | 1.98% | 1.58% | 1.45% | 1.34% |
| Philippines | 4.92% | 7.59% | 12.31% | 11.44% | 10.29% | 9.84% | 9.82% |
| Russia | 0.89% | 0.63% | 0.41% | 0.37% | 0.32% | 0.29% | 0.32% |
| Singapore | - | - | - | - | - | - | - |
| Chinese Taipei | - | - | - | - | - | - | - |
| Thailand | 0.89% | 1.19% | 1.00% | 0.84% | 1.32% | 1.29% | 1.47% |
| United States | 0.02% | 0.03% | 0.04% | 0.04% | 0.04% | 0.04% | 0.04% |
| Viet Nam | - | 3.98% | 4.57% | 6.68% | 6.35% | 6.42% | 6.42% |

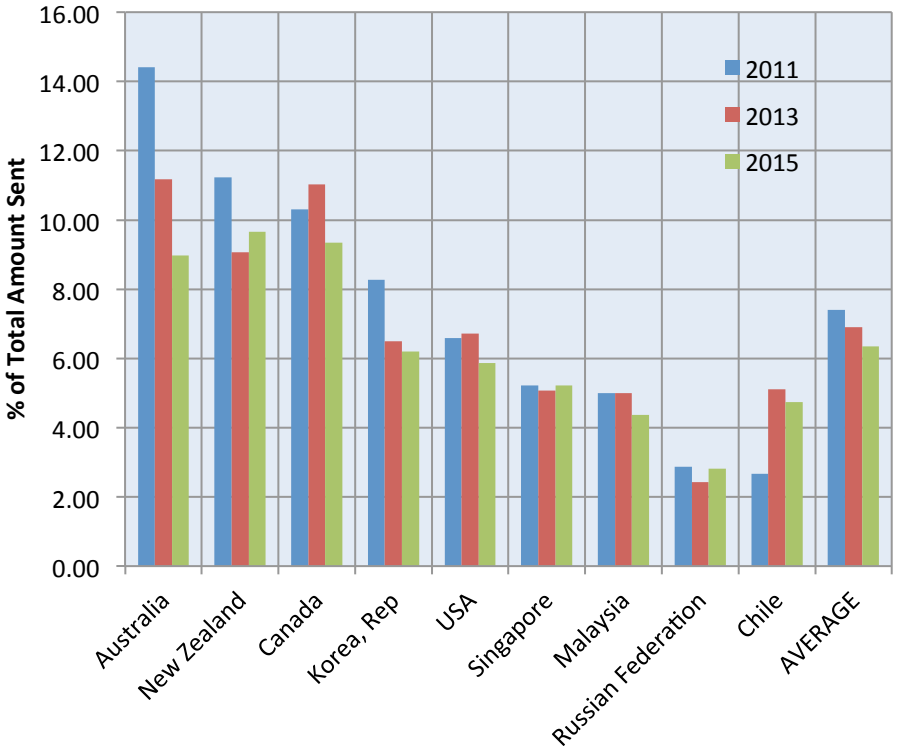
**Source**: World Bank (2015)

As mentioned above remittances comprise a major source of income for low income households in some developing economies. Yet, a substantial amount of the transfers are held back by service providers. Thus, it is equally important to address the transaction costs of sending money by international workers. Lower costs of transmitting money may deliver positive economic impacts on consumption, savings and investment both at macro and household levels, helping to promote growth and reduce poverty.

In 2009 at the L'Aquila summit, G8 economies adopted an objective to reduce the global average cost of migrant remittances from 10 to 5 percentage points in 5 years which later became known as '5x5 objective' (World Bank, 2014). This was further endorsed by establishment of a Development Action for Remittances by G20 economies in 2010 and renewal of the commitment in 2011 and 2014.

Figure 9 shows the average cost of sending $200 USD from selected APEC economies including money transfer operators, generally with above average cost and banks with lower than average costs. The figure shows the average cost of sending money overall decreased from 7.4% in 2011 to 6.4% in 2015 due to technological progress and policy initiatives. Australia, New Zealand and Canada fall behind the target with average costs around 10%, although Australian costs reduced from 14.4% to 9% between 2011 and 2015. Korea and USA are heading towards the target, while Singapore, Malaysia, and Russian Federation recorded less than 5%. Average fees increased from 2% to 5% in Chile from 2011 to 2015.

**Figure 9.** Price of Remittances in Selected APEC Economies, 2011- 2012




***Note**: Cost of sending equivalent of $200 USD. Each year is based on the first quarter of the year.
**Source**: World Bank's Remittance Prices Worldwide Database, World Bank (2014)

While a reduction in cost of remittances is on the agenda of G20 through National Remittance Plans, further work by APEC members not in the G20 bloc would be beneficial to enhance economic progress and change lives of households in low income economies.

# 3. A REVIEW OF EXISTING POLICIES

This section provides a brief overview of existing policies on labour mobility in the APEC region. The aim of the section is to discuss key policy themes from the perspectives of both source and host economies. The section also discusses multilateral actions on social protection and recognition of professional qualifications.

## 3.1. Host economy perspective

Economic opportunity is the key driver of most decisions by workers to travel overseas for employment. However, some authors argue that lifestyle factors, cultural considerations, access to health and education, as well as political and social stability also play a key role in attracting labour (Productivity Commission, 2010). This is not to say, however, that government policies have no effect. Indeed, many workers go abroad to escape political and social repression. Simultaneously, host economy conditions can also play a pivotal role. In most cases, labour mobility policies are geared toward attracting two types of workers: (i) workers who conform to the economy's comparative advantage and (ii) low-wage service industry employees (where locals are less likely to work).

Turning first to the issue of comparative advantage, Japan, Korea and Chinese Taipei have permitted the entry of overseas workers in small segments of small and medium-scale manufacturing. Similarly, Malaysia and Thailand have admitted large numbers of foreign workers into labour-intensive industries. Australia has adopted policies where workers who meet certain skill shortages earn more points and are therefore more likely to qualify for permanent residency or work visa requirements. Australia, Canada, the US, and New Zealand have adopted policies that incentivise students to study in those economies, by allowing them to stay in the economy on a temporary basis after their studies. In many instances, students who focus on high-demand areas obtain permanent residency in those nations after a few years of work, as a stepping stone to labour mobility.

Such policies may generate perverse incentives for potential foreign workers to engage in educational programmes that increase their likelihood of getting residency, while ignoring their competitive advantage and vocational inclinations. Furthermore, such policies could limit the entrance of labourers with entrepreneurial aptitudes who work in an industry that is currently not growing. Finally, these policies could benefit from focusing on industries that may generate high growth in the future rather than already demonstrated high-growth sectors.

For example, export-oriented industries that focus on the extraction of natural resources are subject to large terms of trade fluctuations that are a function of international commodity demand as well as domestic and international policies. Programmes that focus on attracting foreign labour for these high performance industries often ignore future economic trajectories that could potentially lower demand for labour. In fact, across the APEC region, structural change that came about from unprecedented levels of economic growth in some economies significantly changed the structure of demand for labour (Akkemik, 2007).

One way around this issue is to adopt policies similar to those of Singapore. Singapore maintains a comprehensive 'brain gain' policy, which is almost unique within the APEC region (Chia, 2008). Professional and skilled foreigners seeking employment in Singapore require an Employment Pass, which is valid for up to 5 years (and renewable) and firms that hire foreign workers do not have to incur additional tax penalties.

Furthermore, focusing on policies that attract workers to industries where locals do not want to work is probably more sensible. Manning (2002), for example, notes that three East Asian APEC economies – Singapore, Hong Kong and Chinese Taipei – developed well managed policies which allowed contract guest workers to enter under specific programmes, which also limited the number of illegal foreign workers. For example, Singaporean work permits have attracted a steady inflow of labour. By 2010 the total foreign workforce made up approximately 40 per cent of Singapore's total workforce (Phua et al., 2012). As opposed to traditional policies from developed economies that focus on attracting skilled workers, work permit holders in Singapore are usually low-wage workers in low or semi-skilled manual jobs, including women employed as live-in domestic workers (Phua et al., 2012). Note however that overseas workers are intended to be 'temporary' labour inflows. For example, the ability of guest workers in Singapore to change jobs and employers is regulated. As a result, some workers are changing jobs and staying illegally (Chia, 2008).

New Zealand's Recognized Seasonal Employer (RSE) Programme also specifically targets unskilled-workers. The RSE is a lottery that allows temporary entry of mainly low-skilled Pacific Islander workers to the horticulture and viticulture industries, where New Zealand faces supply-side labour constraints (ILO, 2014). The development effects of this scheme seem important- a recent evaluation report of the RSE programme found that some participants used remittances to pay school fees, support family members, purchase equipment, vehicles, land, and build homes, and invest in income-generating activities among other uses (Evalue Research 2010).

Similarly, Australia operates the Seasonal Worker Programme which commenced on 1 July 2012. It is a Pacific-focused programme designed to provide small island economies with opportunities for economic development. The programme provides eligible citizens from eligible economies with an opportunity to undertake low and unskilled seasonal work in Australia. From 1 July 2015, the annual cap on the number of workers participating in the Seasonal Worker Programme was removed so that employers could more easily access seasonal labour when they are unable to source labour locally for particular sectors. Removing the annual cap on programme places means that the number of seasonal workers who come to Australia is determined through employers' unmet need for labour as demonstrated through labour market testing.

Korea has a similar policy in place through its Employment Permit System (EPS) (ILO, 2010). The Korean government signed a Memorandum of Understanding (MOU) with the governments of Bangladesh, Cambodia, China, Indonesia, Kyrgyzstan, Mongolia, Myanmar, Nepal, Pakistan, the Philippines, Sri Lanka, Thailand, Timor-Leste, Uzbekistan, and Viet Nam in order to reduce the costs of international labour mobility. The aim is for a more centralised method of recruiting workers in origin economies and helping them to travel to Korea under a formal employment programme. The EPS sets a quota for workers from each nation and then operates to match those workers to jobs in small and medium size enterprises (SMEs) in industries within the manufacturing, agriculture, livestock and construction sectors. Workers selected for the programme in each economy spend time with an instructor to improve their language abilities, learn about Korean culture and their rights as international workers. Workers are able to participate in a migrant return programme toward the end of their stay in Korea. This programme is yet to be formally evaluated.

The Trans-Tasman Travel Arrangement between Australia and New Zealand in 1973 and other bilateral agreements such as the Tans Mutual Recognition Agreement and other measures contribute to facilitating a "common" labour market in the two economies.

The United States Diversity Immigrant Visa (Green Card Lottery) specifically targets natives of economies deemed to have low rates of immigration to the United States and as such may be seen as implicitly discriminating against foreign workers from nations that may have greater cultural connections to the United States and thus a greater diaspora from that nation. Taking into account that networks are important determinants of labour market success, immigrants from economies with a large presence in the recipient economy may perform significantly better and make larger contributions to their adopted land.

In general, host economy policies should aim at ensuring employing firms and recruitment agencies avoid displacement of local workers or upgrade their skills through training, while providing equitable wages and safe working conditions for the foreign workers. Information asymmetries and other market failures that create divergence between social and private costs or benefits may be addressed through levies on firms that employ foreign workers (possibly to finance retraining of displaced local workers) and supporting rights of those foreign workers. Facilitating repatriation of foreign workers periodically and at the end of their contracts can also help to maximize the net benefits of labour mobility.

In recently publicly released details of the Trans Pacific Partnership Agreement the 12 APEC economies agree on ratification of the agreement to protect and enforce labour rights to improve working conditions and living standards and to strengthen cooperation between parties. Recently concluded bilateral trade, investment and economic agreements of Australia with China, Japan and Korea also incorporate provisions impacting on labour mobility. In the China Australia FTA it is agreed that Australia's existing visa arrangements including the 457 visa program will continue to be the basis for implementing Australia's commitment on labour mobility. This is aimed assisting employers to address labour shortages by bringing in genuinely skilled workers where they cannot find as appropriately skilled Australians. The Australian agreement with Japan provides that each party shall encourage (their) competent authorities and professional bodies to recognise qualifications of services suppliers obtained in the other party. In the agreement with Korea the parties provide for the enhancement of cooperation on trade-related aspects of labour issues and each preserves its policy stance to maintain national laws.

## 3.2. Source economy perspective

Recruiting agencies, potential employers, workers, and governments all suffer from incomplete or asymmetric information. To address these lacunae, governments in source economies can make information available about recruitment processes, jobs, regulations, and mobility costs for their workers heading overseas, and protection of their welfare while working abroad.

Creating disincentives for rent seeking in the recruitment process is a particular challenge. Related to labour mobility outcomes, remittances have become an important source of external financing for developing economies, and although there is some evidence that they can cause exchange rates to appreciate, there is also overwhelming evidence that they have positive effects at both the micro and macroeconomic levels. Changes in technology and international regulation of financial flows have made it easier to send money home but more importantly made it easier to channel these remittances through formal financial systems.

As a result, some economies have begun initiatives to maximise the performance of their overseas workers in foreign labour markets to increase remittance inflows back home. For example, the Viet Nam Government has adopted a policy to push job training and orientation for workers before getting a job abroad. The programme includes basic knowledge on Viet Nam's regulations and policies on overseas labour, law and customs of recipient economies and topics on work disciplines (Chia, 2008).

Similarly, the Philippines government provides mechanisms to protect the rights of migrant workers. The Philippine Overseas Employment Administration (POEA) grants licenses to recruitment agencies, regulates and monitors their performance, and prosecutes illegal recruiters. Furthermore, all departing temporary workers receive mandatory life and personal accident insurance (Chia, 2008).

The Mexican Government's 3x1 programme, similarly, seeks to enhance infrastructure and service development, such as health and education, culture and recreation, and communications through migrant remittances. In 2008, a 1x1 Migrant Business Fund was established to provide subsidised loans to Mexicans in the US who wish to invest in Mexico.

Acknowledging that people travel internationally for employment and send money back is an important step. It is also important for economies to acknowledge that many international workers do wish to maintain ties with the origin economy and local communities. Thailand has taken advantage of this through its Reverse Brain Drain Project (RBD), to replace and increase skills temporarily overseas. According to the ILO (2015), the RBD was established within Thailand's National Science and Technology Development Agency (NSTDA) in 1997. Initially, a Reverse Brain Drain Committee was appointed by the Thai Cabinet to administer and supervise the Project. Under the Committee's policy and guidelines, a number of overseas Thai professionals returned to Thailand to collaborate on a variety of research projects. Around 35 such projects were initiated before RBD began to shift its emphasis to short-term visits involving knowledge sharing, seminars and technology transfer workshops. The Project facilitates and coordinates technology and knowledge transfers through short-term visits of overseas Thais and the development of institutional linkages between Thai agencies and Thais abroad. Through e-newsletters, RBD also disseminates information about Thailand's science and technology needs among its network of overseas Thai professionals, Thai government agencies, academic communities and the industrial sector.

## 3.3. Bilateral actions

Cooperation between labour source and host economies plays an important role in addressing information shortages, informal or undesired labour flows, and problems in enforcement of labour mobility regulations, particularly when private and social returns to labour mobility diverge. The International Labour Organization (ILO) hosts a Good Practices database on labour migration policies and programmes. The database summarises a set of good policies that could potentially enhance migratory flows between economies, although the aim of most policies is to improve upon existing conditions for international migrants.

It is well known that the United States hosts a significant number of Latino workers. The biggest proportion (approximately 30 per cent) of workers from this group of nations comes from Mexico. The governments of the two economies have initiated a number of policies that aim to improve the labour mobility experience. For example, in the 1990s the Secretary of Foreign Affairs of Mexico initiated a programme targeting Mexicans abroad to strengthen their ties with Mexico and to support the health and education infrastructure within diasporic

communities. In 2003, this initiative gave rise to the Institute for Mexicans Abroad (*Instituto de los Mexicanos en el Exterior* (IME)).

IME brings together relevant stakeholders in Mexico and the United States to discuss the challenges and opportunities confronting Mexicans abroad. It coordinates stakeholder activities; organises seminars and conferences on migration; and makes recommendations and implements programmes for communities abroad. It incorporates the emigrant community into socio-political processes in Mexico to ensure both the inclusion of emigrant concerns into State policies and their continued interest, and investment, in Mexico's development.

IME's programmes includes *Tu Vivienda en México* (Your Home in Mexico), which seeks to encourage and promote the purchasing of homes in Mexico by the diaspora population and *Ventanilla de Salud* (Health Window), a health information programme that benefited over 1 million people in 2012 (ILO 2015).

Such programmes may be useful in economies with relatively large diasporas from particular economies. For example, New Zealand which hosts large numbers of Tongan and Samoan migrants might benefit from the availability of a similar programme.

## 3.4. Multilateral actions

The International Labour Organization (ILO) has adopted three conventions that are relevant for the protection of international workers (United Nations, 2013). The Convention concerning *Migration for Employment* (Revised 1949) (No.97); the *Convention concerning Migrations in Abusive Conditions* and the *Promotion of Equality of Opportunity and Treatment of Migrant Workers* (Supplementary Provisions) (No. 143); and the *2011 Convention concerning Decent Work for Domestic Workers* (No. 189) (United Nations, 2013). In the following section, we briefly discuss these important multilateral instruments.

A. The 1949 Convention concerning *Migration for Employment* covers recruitment and working conditions' standards for migrant workers. It establishes the principle of equal treatment of international workers and nationals with regard to laws, regulations and administrative practices that concern living and working conditions, remuneration, social security, employment taxes and access to justice. As of 30 November 2015, 49 ILO Member States out of 186 had ratified ILO Convention No. 97 (ILO, 2015).
B. The 1975 Convention concerning *Migrations in Abusive Conditions and the Promotion of Equality of Opportunity and Treatment of Migrant Workers* was the first multilateral attempt to address irregular international labour flows and to call for sanctions against people traffickers. It emphasized that UN Member States are obliged to respect the basic human rights of all international workers, including irregular ones. Furthermore, it also provided that lawfully present foreign workers and their families should be entitled to both equal treatment and equality of opportunity, such as equal access to employment and occupation, trade union and cultural rights and individual and collective freedoms. As of 30 November 2015, 23 ILO Member States out of 186 had ratified Convention No. 143 (ILO, 2015).
C. The 2011 Convention concerning *Decent Work for Domestic Workers* entered into force in 2013. This is the first multilateral instrument to establish global labour standards for domestic workers, guaranteeing them the same basic rights as other workers. The convention establishes that domestic workers, regardless of their

> migration status, have the same basic labour rights as those recognized for other workers. This includes factors such as reasonable hours of work, a limit on payment in-kind, clear information on the terms and conditions of employment, as well as respect for fundamental principles and rights at work, including freedom of association and the right to collective bargaining. As of 30 November 2015, 22 ILO Member States out of 186 had ratified Convention No. 189.

In total, two of the ILO's 186 Member States – Italy and the Philippines – (or less than one per cent of ILO Member States) have ratified all three instruments.

There have, however, been more successful initiatives. For example, the Office of the High Commissioner for Human Rights' 1990 *International Convention on the Protection of the Rights of All Migrants Workers and Members of Their Families* is the third and most comprehensive international treaty on the rights of international workers. It establishes international definitions for categories of international workers and formalises the responsibility of States in upholding the rights of international workers and members of their families (United Nations, 2013). By 2013, 47 Member States (out of a total of 193 United Nations Member States) had ratified the convention. They collectively host 17 million international workers, which constitutes approximately 7 per cent of the global international labour force. However, according to the United Nations (2013), none of the States Parties to the 1990 Convention were major international-worker receiving economies. Furthermore, only six of them hosted more than one million international migrants.

Overall, 87 economies have ratified at least one of the three instruments regarding international labour movements. Among these economies, only two, New Zealand and Philippines belong to the APEC region. It is important for more APEC economies to look toward these initiatives in order to better streamline movements of workers under transparent and fair conditions as well as facilitate the development of effective social protection systems which was one of the key highlights of the 2014 APEC Human Resource Development Joint Ministerial Statement.

Nonetheless, a number of APEC economies, through their membership of ASEAN have adopted the ASEAN Declaration on the *Protection and Promotion of the Rights of Migrant Workers*. This declaration was adopted by ASEAN heads of state in Cebu, Philippines in 2007. The Declaration calls on economies of origin and destination to ensure the dignity of migrant workers by outlining their obligations in the areas of: (i) protection from exploitation, discrimination, and violence; (ii) labour relocation governance; and (iii) the fight against trafficking in persons. The aim of these policies is to ensure the fair treatment of workers and would not necessarily discriminate in favour of or against a certain type of worker.

Overall, however, policies for managing international labour movements under ASEAN are confined to high-skilled workers (ILO and ADB, 2014). The free movement of skilled professionals under ASEAN is partly driven by the requirements of the 1995 ASEAN Framework Agreement on Services, which includes provisions for the movement of natural persons (ILO and ADB, 2014). Even though this could potentially include any form of labour mobility, the current provisions mainly refer to business visitors for sales negotiations, natural persons on a temporary basis, and intra-company transfers of executives, managers and other high-skilled professionals accompanying foreign direct investment.

According to the ILO and the Asian Development Bank (ADB) (2014) the main tools for achieving labour mobility under ASEAN are likely to be the Mutual Recognition

Arrangements (MRAs), which establish the skills or experience relevant professionals need to gain certification in another economy and ultimately to work abroad.

In support of the MRAs, ASEAN is developing the ASEAN Qualifications Reference Framework (AQRF) to enable qualifications to be compared across Member States and provide a benchmark for current national qualifications frameworks (ILO and ADB, 2014).

To date, MRAs have been completed for six general occupations: engineering; nursing; architecture and surveying; medical practitioners; accountants; and tourism professionals. Importantly, MRAs differ in the approaches they employ (ILO and ADB, 2014).

Generally speaking, APEC economies have restricted their efforts to the movements of skilled workers. APEC has agreed on measures that facilitate the mobility of skilled workers, investors and entrepreneurs. More specifically, APEC aims to (i) simplify short-term entry arrangements for business visitors; (ii) streamline processing for skilled persons seeking temporary residence; (iii) develop transparent regulatory arrangements to allow for seamless cross border movement; and (iv) develop Mutual Recognition Agreements (MRAs) for specific professions and occupations. For example, provisions on the recognition of qualification in the Japan Australia FTA are relevant examples of how APEC economies seek to enhance skilled labour mobility.

The APEC Business Advisory Council has proposed a labour mobility framework to address business needs for the APEC region. The framework, called the 'Earn, Learn, Return' Model is patterned after a system employed in the global shipping industry and would target a new labour category called the 'APEC Worker'. It notes that in the long term, better-targeted vocational training, higher rates of female labour force participation, and changes in retirement practices will be required, as will region-wide regulatory convergence for recruitment, placement, and deployment of workers and a framework of new services aimed at the mobility and distant location of APEC overseas workers.

A growing number of workers are turning to employment agencies for job opportunities beyond their home economy. Concerns have been raised about the growing role of unscrupulous employment agencies, informal labour intermediaries and other operators acting outside the legal and regulatory framework (ILO, 2015). In response, the International Labour Organization launched a global 'Fair Recruitment Initiative' in 2014 to help prevent human trafficking and forced labour; to protect the rights of workers, including migrant workers, from abusive and fraudulent practices during the recruitment and placement process; and reduce the cost of labour migration and enhance development outcomes for migrant workers and their families, as well as for economies of origin and destination (ILO, 2015).

The World Bank (2014a) has suggested that governments in labour-receiving economies should consider flexible approaches such as levies on recruitment firms and employing firms to manage demand for foreign workers and reduce displacement of local workers. Policies supporting equal treatment for foreign workers would help avoid incentives to displace local workers with lower cost foreign ones, while where displacement does take place the negative effects can be countered with training to upgrade skills of local workers.

ABAC's Earn, Learn, Return proposal and the work cited above by the ILO point to the importance to both source and recipient economies of the priority of agreements for the mutual recognition of qualifications as a means of reducing barriers to labour mobility. The seamless movement of skilled labour enhances economic efficiency in host economies by

encouraging efficiencies in the delivery of services, increasing productivity, and for the source economy it increases the potential for larger remittance flows. These benefits have been recognised in a number of APEC statements:

- APEC Human Resource Development Ministerial Action Plan (2015 – 18) which gave priority to skills mapping and addressing skills shortages, the identification of opportunities for improving recognition of qualifications and competencies and to build on the experiences of other international forums.
- APEC Connectivity Blueprint which encourages professional skills and labour mobility through benchmarking qualifications in transport and logistics and the expansion of bilateral and multilateral mutual recognition agreements in the region.
- Joint APEC Capacity Building Network (CBN) and APEC Labour and Social Protection Network (LSPN) workshop in Boracay, Philippines, which proposed effective recognition of skills, fair recruitment practices and social security and the protection of mobile workers.

## 3.5. Summary of Barriers to labour mobility

In general, host economies tend to implement different migration and labour market policies for unskilled or semiskilled and skilled or professional migrant workers. Most of these policies are favourable towards inflows of more skilled workers and restrictive towards the less skilled. As shown in regional and global migration trends over the years, the political, social and economic contexts in which these policies are developed could facilitate or restrict the flow of labour across nation borders. Whilst many economists have focused on the influence of labour market conditions on migration policies, political and social (cultural, religious, age, education and ethnicity) factors are also key considerations in policy making. This may be reflected through language requirements or policies that target diaspora (or their descendants) returnees, particularly those who may contribute investments, entrepreneurial or professional skills, and networks of business contacts.

Proficiency in the host economy official language(s) has been identified in a number of studies as one of the major impediments to international labour mobility and integration. It is commonly used by receiving economies to pre-select migrating workers by assessing their capability to successfully integrate in the labour market (International Organisation for Migration, 2013; OECD, 2007). For example, two of the largest migration receiving economies in the APEC region, Australia and Canada, have immigration frameworks "…that involves some selection of immigrants on the basis of skills deemed to favour labour market integration such as age, educational attainment and knowledge of the host economy language" (OECD, 2007; 19). Migrating workers may also self-assess and consider the cost (in terms of labour market outcomes and social interaction) of relocating to economies where there are cultural and linguistic differences.

Lack of recognition of foreign qualifications is, perhaps, the major barrier to modern international labour mobility. It does not only restrict the physical movement of workers, but also the virtual supply of labour and skills in the global marketplace. Furthermore, as the International Organisation for Migration (2013; 27) argues, in Europe the lack of recognition of foreign qualifications has resulted in "…a widespread underutilization of migrant human capital", skills mismatch and loss of productivity. In their Ministerial Action Plan (2015-2018), APEC Human Resources Development Ministers recognised these challenges and called for initiatives to improve the recognition of qualifications and skills. As discussed

earlier, Mutual Recognition Agreements are now in place in the ASEAN region to support mobility and improve labour market outcomes for mobile workers.

Technological upgrading (e.g., robotics, automation, and overseas relocation through FDI of labour-intensive industries, as from Japan) or outsourcing labour-intensive tasks from supply chains may also serve partly to reduce demand for labour imports, although at the risk of industrial hollowing out. Policies to raise the labour force participation rate through, for example, raising the retirement age or increasing availability of child care for working women also can reduce demand for imported labour. Singapore has used levies on the employers of foreign workers and firm-level quotas to raise the relative attractiveness of local workers. Limited access to social safety nets for foreign or temporary workers, or limits on international transferability of retirement or other social benefits may also put foreign workers at a comparative disadvantage.

In some economies foreign workers may be required to undergo expensive and intrusive medical tests (such as for HIV), pay for passports and visa, pay to register their work contracts, pay for pre-departure briefings, show return air tickets, and provide proof of education or other skills. For poor, unskilled workers such costs can be prohibitive and are additional to those charged by recruiters.

In some instances, these challenges are exacerbated by ineffective labour migration management frameworks which could result in the proliferation of unauthorised recruitment and cross-border channels. At the 6$^{th}$ APEC Human Resources Development Ministerial Meeting (Ha Noi, 6 September 2014), Ministers emphasized "…the significance of promoting the effective management of labour mobility and encourage, including on a sectoral basis, further research and dialogue on this issue." Improving the management of the circulation of workers around the APEC region is central to the APEC Business Advisory Council's 'Earn, Learn, Return' model, including a proposal for a sector-based 'APEC Worker Card' to facilitated regional governance of the movement of workers from selected sectors.

Lack of access to social protections by migrant workers has been a long-standing concern, including potential adverse impact on inclusive growth, productivity and the general wellbeing of workers. At the 6th APEC Human Resources Development Ministerial Meeting, Ministers called upon APEC to consider ways that the region "could enhance the protection of migrant workers' rights through a balance of responsibilities across economies." In source economies, policies are generally aimed at protecting workers' rights, facilitating labour outflows to ease domestic unemployment, or to raise inflows of remittances in hard currency, both through training or other pre-departure preparation and through facilitation of returning financial flows with savings and investment schemes. Workers may not be allowed to accept employment contracts that do not meet minimum standards as determined by their home government, accept employment in some economies, or work overseas if below a certain age. Governments offering dual citizenship and special treatment for returned workers can also encourage future relocations. Economies that are sources of major FDI flows also tend to promote temporary relocation of skilled labour in functions that are complementary to the FDI. The WTO's General Agreement on Trade in Services (GATS) covers all skill levels of service suppliers, but members' commitments are generally limited to covering the higher skilled workers. Current APEC measures, such as the Business Travel Card Scheme, are similarly aimed at facilitating mobility of business persons and do not extend to the movement of workers. Some regional trade agreements among APEC members go beyond

GATS to include, for example, full national treatment and market access for service suppliers (Australia-New Zealand CER), commitments on visas (NAFTA), facilitated market access for certain groups (NAFTA, APEC), separate chapters concerning all temporary labour movement including that related to investment (Japan-Singapore Economic Partnership Agreement or movement of natural persons and labour standards (US-Singapore FTA), and extension of WTO treatment to non-WTO members (AFTA) (Chia 2006).

The biggest barriers are often informational asymmetries. In an attempt to address some such barriers, agreements on mutual recognition of professional qualifications are becoming more common. Box 1 below summarises some of the more common barriers.

**Box 1: Barriers to labour mobility**

- Rigid and complex entry working visa systems; quotas.
- Geographical distance, relocation costs and ineffective repatriation processes.
- Absence of bilateral or multilateral arrangements on the recognition of skills and professional qualifications.
- Poor labour market conditions – e.g. low wages, limited or lack of access to social protection and labour market integration programmes.
- Tax disincentives.
- Absence of bilateral or multilateral arrangement on the portability of social security benefits.
- High unemployment rate and low employment prospects in receiving economy.
- High remittance costs, unreliable and insecure remittance services.
- Differentials in labour market outcomes for different groups of migrant workers.
- Week regulation of recruitment agencies, and lack of clear authority and communication among multiple government entities.

# 4. LITERATURE REVIEW

International labour mobility has attracted the interest of scholars, policymakers, and citizens across the world for many years. The central premise behind this mobility is that people move for a variety of reasons, but mainly to seek new opportunities, new lands, new freedoms or to escape from persecution or economic stagnation (Posso and Clarke, 2014).

Economists have assembled a number of theoretical models to explain population flows both domestically and internationally. Two economic models are commonly employed to analyse population flows in developing economies. The first is the dual sector, or Lewis model (Lewis, 1954); the second is the Harris-Todaro model (Harris and Todaro, 1970). Both models depict a transition in which labour from a traditional agricultural sector transits to a modern industrial (manufacturing) sector in response to wage differentials. At the international level, the theory explains that workers may move from economies where labour is abundant relative to capital to economies where labour is relatively scarce and which are characterised by a higher market wage. Consequently, rational workers have an incentive to move from low-wage to high-wage economies (Ruyssen 2013).

Over time, the transition of workers across sectors will narrow productivity differentials between the sectors- increasing marginal productivity and wages in agriculture whilst driving down productivity and wages in manufacturing – thereby driving down real wages in the modern sector relative to the traditional one. Eventually, the wage rates of the two sectors equalise. The simple nature of these models is based on the observation that an individual's choice to relocate either internationally or domestically is primarily a function of marked differences in labour market opportunities between either two economies or urban and rural sectors (Posso and Clarke, 2014). On a global scale, many workers from poor nations with low average wages are looking to go to richer economies with relatively higher average wages. In other words, developed nations attract workers from developing nations (Hugo, 2008).

This simple intuition can be used to explain international migration flows of skilled or unskilled workers. Assuming again that workers decide to relocate based on wage differentials, the effect on the labour recipient economy's wages will ultimately depend on whether the new workers are more or less skilled than the average domestic worker in that economy. Borjas (2003), for example, shows that inflows of unskilled workers will depress unskilled wages in the recipient economy. Nonetheless, these inflows also allow many industries to fill important labour shortages and, therefore, have prevented numerous firms from closing shop. This is particularly true in richer nations characterised by older populations and lower fertility rates (Hugo, 2008).

Inflows of skilled workers, on the other hand, are often associated with employment generation and increased productivity in recipient economies (Regets, 2001). However, mobility of skilled labour often results in perverse outcomes by depriving sending communities of their most energetic and best prepared- the 'brain drain' (Bhagwati and Hamada, 1974). Moreover, as observed in Europe, skilled migration can also result in skills mismatch and underutilisation as highly educated workers, notably from developing economies, are often employed in medium-skilled occupations (OECD, 2012; 2014). All of this warrants important policy consideration, while also explaining why APEC economies have made more progress toward facilitating mobility of skilled, rather than unskilled, workers (Huelser and Heal, 2014).

Empirical evidence suggests that while wage differentials are important, the relocation decision is also based on a balance between 'push' and 'pull' factors. Push factors include, for instance, unemployment, environmental degradation, schooling opportunities, democratic considerations, and cost-of-living problems in the regions of origin. Pull factors are those that draw the migrants to a particular destination. For example, Borjas (1989) argues that the relocation decision is based on the comparison between discounted expected payoffs and costs of relocation to alternative international destinations. Aggregate labour flows between economies are then the sums of individual moves undertaken on the basis of individual cost-benefit estimations. Borjas (1989) also argues, however, that non-economic factors such as political orientation, level of education, and other policy variables also enter the mobile workers' implicit cost-benefit calculations and have an important impact on the size of population flows.

There may also be pull factors back to the economy of origin, such as the desire to live close to and support one's family – Pacific Islanders in Australia and New Zealand, for instance, have been found to have strong links to their home economies and plans to return back home (Connell and Lea, 2002). Additionally, there may be push forces in destination regions, as foreign workers often return home due to economic and social hardships there (Lucas, 1997). These tendencies encouraging return are recognized and supported by the proposed ABAC 'Earn, Learn, Return' model. Given these tendencies, therefore, programmes that support cyclical international mobility may be beneficial.

Overall, there can be many factors influencing labour mobility decisions. Empirical studies have found evidence for a variety of them. For example, looking at population flows to fourteen OECD economies by economy of origin between 1980 and 1995, Mayda (2007) finds that improvements in mean income in destination economies significantly increase the size of emigration rates. However, declining levels of GDP per worker in the origin economy is almost always found to be statistically insignificant. Additionally, she finds that inequality in the source and host economies affects the size of emigration rates. Finally, she finds that demographics matter – the younger the share of the origin economy's population, the higher are out flows.

Similarly, looking at bilateral migration flows into Germany from 86 African and Asian economies over the period 1981-1995, Rotte and Volger (1998) find that labour mobility into Germany was driven by wage differentials. However, the authors also found that an inverse U-shaped relationship between development and population flows existed, suggesting that as economies grow richer from a poor base, outflows are likely to rise. Surprisingly, the authors found a negative effect of trade relations on population flows, which they suggested may stem from people leaving closed economies which are usually poorer and more politically repressive.

There are a number of crucial by-products of both domestic and international labour mobility. For instance, labour mobility often leads to urbanisation, by which the urban sector serves as an additional resource for rural development (Skeldon, 1997). In essence the urban sector extends local resources and helps hedge rural households against risk. Therefore, labour mobility can help to relieve poverty in the rural sector. Policies that are aimed at restricting population flows may be counterproductive and not in the best interests of the rural poor. However, rapid-scale urbanisation, resulting from rural-urban flows can also result in serious environmental, economic and social problems associated with the generation of shanty-towns or marginalised townships (Posso and Clarke, 2014). This is a reminder that labour mobility

is not always a purely international issue and that there needs to be coherence between policies for domestic mobility and those for international movements.

## 4.1. Gender and mobility

There is currently little information available about the characteristics of the average foreign labourer. In terms of demographic characteristics, the gender and skill composition of international labour is important. According to Athukorala (2004), by the late 1990s female labourers shares in labour outflows were 80% in Indonesia, 60% in Philippines, and 20% in Thailand. More recently, Artuc et al. (2015) provide the most comprehensive data on international workers broken down by skill level and gender.

Previously, existing data of bilateral foreign population stocks disaggregated by education level only captured the size and structure of population flows to the OECD. As shown below in this study, this is an important limitation because labour mobility to non-OECD economies is significant. Movement to non-OECD destinations is mostly driven by unskilled workers as geographical distance deters international relocation, particularly for the unskilled.

Women are commonly overrepresented among the unskilled workforce in developing nations, suggesting a significant proportion of female labour flows are to neighbouring economies. However, this trend is only common for Latin American economies. In the rest of the world, a higher proportion of women move to OECD destinations, possibly because of greater social protections.

According to Artuc et al. (2015), the relocation of highly skilled women is a concern because women's human capital is an important determinant of labour productivity, children's education, and economic growth. On average, the brain drain for women is 15 per cent higher than for men. These gender differentials are particularly apparent from Sub-Saharan African economies and more broadly in cases in which women have poorer access to human capital.

Overall, Artuc et al.'s (2015) data indicates that while 49 per cent of all female population flows go to the OECD, 60 per cent of female overseas workers from APEC economies do so. Similar patterns are evident from developing nations, where 38 per cent of overseas workers go to the OECD compared to 50 per cent from APEC economies.

Moreover, their data confirms that a larger proportion of mobile labourers from rich economies go to other rich economies. With more data to support further analysis, a more disaggregated picture of labour mobility may yield further insights for better policy formulation.

# 5. MACROECONOMIC ANALYSIS

This section presents our macroeconomic analysis in order to highlight trends, patterns, characteristics and determinants of international labour movements on a global scale.

## 5.1. Data, methodology, and models of labour mobility

The original research in this study aims to identify the determinants of labour mobility across economies, with a special emphasis on APEC economies. As a first step toward explaining labour movements we build on a number of theoretical and empirical studies that estimate the macroeconomic factors that drive both out and in flows of workers (Borjas, 1987; Clark et al, 2002; Mayda, 2010 and Karras and Chiswick, 1999).

Official statistics often do not consider the large number of undocumented workers who may be present in an economy at any one time (Hugo, 2008). Therefore, the results of this research, as well as any other study using macroeconomic population flows, must be interpreted with caution.

This study uses regression analysis to determine the impacts of specified exogenous factors (independent variables) on an endogenous (dependent) variable in a series of population mobility models. The dependent variables, therefore, capture population flows between economies at the macroeconomic level. For example, using bilateral population flows from 1960 to 2000 available from the World Bank's Global Bilateral Migration Dataset, we calculate total population flows and flows to OECD economies. The latter variable recognises that approximately half of all population flows internationally are toward developed OECD economies. These variables are presented as a proportion of the population to account for the fact that larger economies, such as China, will send a larger number of international workers, although as a proportion of its population this will remain relatively small. Population data is available from World Bank's World Development Indicators (WDI) covering the period 1960-2014.

Additionally, we employ data on international flows of tertiary educated workers, measured as a proportion of all tertiary educated individuals in a population. This variable is used to capture any brain-drain effect, particularly from developing economies. The variable is available from WDI for the period covering the years 1990-2000.

Existing models indicate that labour mobility across economies is primarily determined by individual benefits obtained through relocating abroad and generally modelled as wage differentials. In the absence of individual-level or aggregate wage data, these differentials are generally proxied by Gross domestic product (GDP) per capita, which is available from WDI covering the period 1960 to 2013.

GDP is the sum of gross value added by all resident producers in an economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. GDP per capita is measured here as GDP divided by midyear population, and interpreted as average income in a particular economy. Thus mobility is modelled as a function of potential income earned in the origin economy versus potential income earned in the destination economy. Data are in constant 2005 United States dollars in order to facilitate international comparisons across time.

Empirical macroeconomic models recognise that the relocation decision is a function of individual constraints and government policies. We consider these factors, building on existing empirical work, but adding to these models new factors suggested by theory and found to be significant. A number of these key indicators are listed below with their motivations and expected effects on labour mobility.

- Cost of living is proxied with the consumer price index (CPI) available from WDI over the period 1960-2014. The CPI reflects changes in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly.[2] We expect that an increase in the cost of living in a given nation will increase its outflows.
- Government expenditure as a share of GDP (available from WDI over 1960-2013) is defined as general government final consumption expenditure, which includes all government current expenditures for purchases of goods and services (including compensation of employees). It also includes most expenditure on national defence and security, but excludes government military expenditures that are part of government capital formation.
  The effect of government expenditure on population flows is ambiguous in the sense that an increase in expenditure could generate employment opportunities in the origin economy, lowering the need to relocate. Additionally, government expenditure on services could improve living conditions, making the origin economy relatively more attractive. And government-provided cash transfers for the unemployed, students or the poor could increase a household's reservation wages, lowering the incentives to relocate internationally.
  On the other hand, government expenditure can crowd out investment opportunities from the private sector, with negative employment and growth effects. This could potentially serve as an important push factor for labour mobility.
- Data on unemployment, measured as a proportion of the total labour force, is available from WDI over the period 1991-2013. Unemployment refers to the share of the labour force that is without work but available for and seeking employment. The labour force, in turn, is defined as people ages 15 and older who meet the International Labour Organization definition of the economically active population: all people who supply labour for the production of goods and services during a specified period. National practices vary in the treatment of groups such as the armed forces and seasonal or part-time workers, but in general the labour force includes the armed forces, the unemployed and first-time job-seekers, while excluding homemakers and other unpaid caregivers and workers in the informal sector. These data are sourced by the World Bank from the International Labour Organization's Key Indicators of the Labour Market database.
  In this study, economies with a high rate of unemployment are expected to have a larger proportion of people willing to move internationally in search of employment. Importantly, however, the effect of this variable on labour mobility will be biased downward in economies with large proportions of people working in the informal sector.
- As mentioned earlier, Rotte and Volger (1998) find a surprising effect of international trade on labour mobility. This appears to be because the effect of trade (measured as imports and exports as a proportion of GDP) on population flows is ambiguous. On

[2] The Laspeyres formula is generally used to calculate this index within each nation.

the one hand, economies with a large share of imports, usually have smaller domestic labour markets and employment opportunities, and must therefore look toward international opportunities. On the other hand, economies with larger export sectors have larger labour markets and more employment opportunities. Furthermore, export-oriented growth has been an important development strategy for a number of developing economies, particularly in East Asia.

As a result, this report separates the trade variable into its exports and imports components. Exports are measured as outflows of goods and services as a share of GDP. Imports are measured as the inflow counterpart. These data are available from WDI over the period 1960-2013. Exports are expected to have a negative effect on labour mobility, while the opposite is expected for imports.

- Whether a more skilled population is more likely to relocate out of developing economies also remains theoretically ambiguous. Skilled workers are more mobile internationally and can therefore more easily find work across borders if the (wage/income and living conditions) incentives are right. On the other hand, better educational opportunities in the origin economy may result from sophisticated labour markets demanding them, meaning good employment prospects exist domestically.

  In the absence of more complete data, we proxy for the skill-intensity of the population using the primary school gross enrolment ratio. This is measured as the total enrolment in primary education, regardless of age, expressed as a percentage of the population of official primary education age. This variable can exceed 100 per cent due to the inclusion of over-aged and under-aged students because of early or late school entrance and grade repetition. The premise behind the inclusion of this variable is that more skilled societies place a higher value on education and are, therefore, more likely to send their children to school. These data are available from WDI over the period 1970-2014.
- A number of workers leave the origin economy looking for educational opportunities abroad. In order to capture educational opportunities as a pull factor, we include a measure of government expenditure on education (primary, secondary and tertiary) in OECD economies. This variable is expressed as a percentage of total general government expenditure on all sectors (health, education, social services, etc.) and includes expenditure funded by transfers from international sources to government. General government usually refers to local, regional and central governments. Data are available from WDI over the period 1973-2011. Unfortunately, this variable is not widely available for developing economies.
- Often economies with smaller or less developed financial sectors face large credit constraints, which make it difficult for smaller firms to grow and for entrepreneurs to find the capital necessary for start-ups. In these cases, it is likely that labour market opportunities will be relatively few and workers will look for better conditions abroad. This report uses M2 over GDP – a common proxy of financial development – to test for the effect on labour mobility. M2 is defined as money and quasi money, which comprise the sum of currency outside banks, demand deposits other than those of the central government, and the time, savings, and foreign currency deposits of resident sectors other than the central government. This variable is available from WDI over the period 1960-2013.

Table 5 presents summary statistics for the variables of interest. The number of observations varies due to the heterogeneity in data availability from the various sources. The statistics summarised in the table capture the number of observations available for the regression analysis, that is, they inherently depend on the dependent variable and key control variables. The estimation strategies are described in detail in Technical Appendix 1, while major results are discussed in the following section.

**Table 5.** Summary statistics for the variables

| *Variable* | *Obs* | *Mean* | *Std. Dev.* | *Min* | *Max* |
|---|---|---|---|---|---|
| Outflow rate to OECD (% pop) | 5418 | 4.45 | 7.67 | 0 | 56.36 |
| Outflow rate, total (% pop) | 5418 | 7.64 | 9.13 | 0 | 58.80 |
| Outflow rate, tertiary educated (% tertiary educ) | 1879 | 19.45 | 21.30 | 0.14 | 90.94 |
| GDP per capita (2005 USD, '000s) | 5418 | 8.29 | 13.94 | 0.05 | 122.44 |
| GDP per capita in OECD economies, avg. (2005 USD, '000s) | 5418 | 22.67 | 5.97 | 11.03 | 32.61 |
| CPI (2010=100) | 3870 | 30.02 | 26.65 | 0.00 | 128.79 |
| Government expenditure (% GDP) | 4793 | 15.91 | 7.16 | 2.06 | 133.15 |
| Unemployment (% of labour force) | 1573 | 9.07 | 6.24 | 0.2 | 39.3 |
| Imports (% GDP) | 4833 | 38.77 | 28.62 | 0 | 424.82 |
| Exports (% GDP) | 4833 | 32.49 | 23.92 | 2.52 | 202.05 |
| Enrolment, primary (gross) (% pop primary educ age) | 3709 | 93.96 | 23.96 | 2.83 | 207.82 |
| Education expenditure (OECD) (% Gov exp) | 4221 | 5.02 | 0.19 | 4.62 | 5.42 |
| M2/GDP (%) | 4277 | 45.06 | 213.42 | 0.02 | 7414.27 |

**Source**: Authors' calculations based on data from World Bank, World Development Indicators and the Global Bilateral Migration Dataset.

## 5.2. Preliminary analysis and empirical results

The theoretical models and much of the empirical evidence confirm that the two most commonly cited macroeconomic pull and push factors are higher income in the destination economy and lower income in the origin economy, respectively. As a first approach toward testing this relationship Table 6 presents a series of correlation matrices that test whether the relationship between the population flows and income variables is positive, negative and statistically significant. Statistical significance is denoted in this report by *, where *, **, and *** at the 10, 5 and 1 per cent levels, respectively.

The panels in Table 6 present the correlation between the population outflow rate to OECD economies, total outflow rate, and the outflow rate of tertiary educated individuals against income in the origin economy (GDP per capita) and income in the destination economy (GDP per capita in OECD), respectively. Panel A focuses on testing this relationship for the full set of developing and developed economies for which data is available. Panel B focuses on outflows from solely developing economies, defined as those with a GDP per capita below $10,383 in 2005. Panel C focuses solely on APEC member economies, while Panel D focuses on APEC developing economies.

Overall, Table 6 shows that population outflows are positively correlated with income in both destination and origin economies. The former is in line with our *a priori* expectations. The latter suggests that population outflow is higher from relatively richer economies, which suggests that income in the local economy is not a pull but rather a push factor. It is important to remember that correlation does not necessarily show causation. However, one explanation behind this phenomenon is that international relocation is expensive. Therefore, people will only be able to afford relocation when average income is higher (and probably information

about destination opportunities more readily available). This does not account for other control variables and unobserved characteristics, which is why a more sophisticated regression analysis is reported below.

In Column 3 of Table 6, Panels A, C and D show a negative and statistically significant relationship between income in the origin economy and outflows of those with tertiary education. This suggests that for the highly educated or skilled, it is low wages at home that are serving as an important push factor for international relocation. Panel B, on the other hand, shows a positive relationship, which is consistent with the interpretation above. Finally, for these individuals, the effect of income in destination economies is not (statistically) significantly different from zero.

**Table 6.** Population outflow and income correlations

| | *(1)* | *(2)* | *(3)* |
|---|---|---|---|
| | Population outflow rate to OECD | Population outflow rate, total | Population outflow rate, tertiary educated |
| **Panel A: Across the world** | | | |
| GDP per capita (thousand US$) | 0.27*** | 0.13*** | -0.13*** |
| GDP per capita in OECD | 0.14*** | 0.13*** | -0.002 |
| **Panel B: Outflow from developing economies** | | | |
| GDP per capita (thousand US$) | 0.25*** | 0.14*** | 0.075*** |
| GDP per capita in OECD | 0.20*** | 0.15*** | -0.0008 |
| **Panel C: Outflow from APEC economies** | | | |
| GDP per capita (thousand US$) | 0.35*** | 0.27*** | -0.15** |
| GDP per capita in OECD | 0.28*** | 0.26*** | -0.06 |
| **Panel D: Outflow from APEC developing economies** | | | |
| GDP per capita (thousand US$) | 0.71*** | 0.75*** | -0.21* |
| GDP per capita in OECD | 0.36*** | 0.23*** | -0.05 |

**Note**: *, **, and *** denote statistical significance at the 10, 5 and 1 per cent levels, respectively.
**Source**: Authors' calculations on data from World Bank, WDI and the Global Bilateral Migration Dataset

To control for the influences of other variables and thereby isolate the effect of individual factors, a series of regression analyses using variations of the basic model were undertaken. The basic model uses a measure of labour mobility as the dependent variable and income per capita plus other explanatory variables (push and pull factors) as independent variables. The models differ in terms of the labour mobility measure used as the dependent variable and some of the independent variables. Because of differences in data availability for different variables (as discussed above), the number of observations also differs across the models. In particular, we examine:

1. South-North population flows, from less developed to more developed economies
2. South-North flows of tertiary educated labour ('brain drain')
3. Total international population flows
4. Total international population flows of tertiary educated labour ('brain drain')
5. South-South population flows
6. North-South population flows

General results of this modelling exercise are discussed below. More technical details of the estimations and results may be found in Technical Appendix 1.

## 5.3. Empirical results

### 5.3.1. Model 1: South-North population flows

As mentioned above the majority of empirical studies focus on explaining labour mobility patterns from relatively poorer to relatively richer economies even though this only captures approximately 50 per cent of international population flows. Nevertheless, these migratory flows align themselves well with the intuition that it is income differentials that are driving the relocation decision across economies. We find for a set of developing economies that an increase in the average level of income in rich OECD economies by US$10,000 (roughly equal to an increase from the level of GDP per capita in Korea to that of Norway), will increase international population flows from the average developing economy in our sample by 1.4 percentage points. Similarly an increase in the level of income per person from the sample average of 2 thousand US dollars (roughly the size of the Vanuatu economy) to 6 thousand US dollars (average for the Mexican economy) results in an increase in international population outflows of approximately 1 percentage point. Again, this suggests that relocations are costly and additional average income is likely to be used by the household for relocation purposes.

Developing APEC member economies, however, are inherently different from the average developing nation in a number of ways. Most importantly, APEC developing economies are significantly richer than the average developing economy. For example, while GDP per capita in the average developing economy in our full sample is US$1,800 the average developing APEC economy's GDP per capita is US$2,500. Furthermore, APEC economies benefit from greater economic integration than many other developing economy sub-regions. Therefore, the analysis is repeated with a focus on APEC developing members. It finds evidence that relatively low income in origin economies, relative to destination economies, acts as a push factor away from developing APEC economies. In particular, an increase in the average income of developing economies in the APEC region by US$2,000 (approximately one standard deviation), leads to a decrease in the international relocation rate to developed nations by 1.8 percentage points.

Overall, an increase in income in destination economies significantly increases the relocation rate from developing economies after controlling for a number of macroeconomic indicators as well as isolating specific economy and year effects. Similarly an increase in income in developing economies leads to an increase in relocation to rich economies. However, when focusing just on APEC developing economies, an increase in income results in a statistically significant decline in the rate of international relocation to rich economies, as predicted by theory.

Allowing for non-linear effects in rich economy income highlights the possible existence of a negative effect between labour mobility and income for destination economies with a GDP per capita below US$14,000. Many economies in this range have relatively less stringent labour standards. Therefore, it is possible that when they embark upon high growth periods (and income rises), more workers face industrial risks and overseas workers may opt out of working in these economies.

Other variables that are found to have statistically significant effects on the rate of international relocation from developing to developed economies are: government expenditure; imports (as a share of over GDP); exports (share of GDP); and gross enrolment rates in primary school.

An increase in government expenditure in the average developing economy by 10 per cent (roughly 1.5 percentage points of GDP, and would probably need to be phased in over time) is found to result in an increase in population outflow of 0.06 percentage points. As argued above, this is consistent with government expenditure crowding out private sector investment opportunities, which has negative employment effects, pushing mobile workers out of the economy. Fiscal responsibility from developing economy governments is therefore important.[3]

Increasing imports as a share of GDP by one standard deviation from the mean (20 percentage points) is found to increase population outflows by 0.32 percentage points. On the other hand, an increase in exports by one standard deviation from the mean (20 percentage points) decreases outflows by approximately 0.5 percentage points. These results suggest that economies with large shares of imports are likely to have smaller domestic labour markets and employment opportunities, and therefore citizens from these economies are significantly more likely to look toward international relocation. On the other hand, economies with larger export sectors have larger levels of employment, leading to a lower incentive to leave.

International relocation is costly. It can separate households and families and lead to households and migrants undertaking large amounts of debt to pay for travel and relocation costs. When exports are a viable substitute for labour mobility,[4] liberalising an economy to international trade and embracing an export-oriented development strategy can mitigate the need for some workers to relocate abroad in search for a better life.

Finally, an increase in the primary enrolment rate decreases the rate of total population outflows from developing economies to richer economies. An increase in the enrolment rate by one standard deviation (20 percentage points) decreases the outflow from developing economies by 0.3 percentage points. This is consistent with the explanation that better educational opportunities in the origin economy may result from more sophisticated labour markets, suggesting that good employment and educational prospects exist domestically.

Lastly, comparing APEC economies with non-APEC economies reveals that the effects of the trade variables and government expenditure on APEC developing economies and other developing economies are similar.

### 5.3.2. Model 2: South-North population flows, tertiary educated

A significant concern is what happens to developing economies when their brightest and most educated leave the economy, commonly referred to as the 'brain drain'. Overall, the results from this exercise are strikingly similar to those in the previous model, suggesting the general, macro-level, push and pull factors are likely to be the same for the highly educated and the rest of the population.

[3] However, after including other significant predictors of population outflows, the effect of government expenditure becomes marginally statistically insignificant.

[4] That is, a person in the destination economy *j* can buy a product made by someone from the origin economy *i* by either importing the product or having the worker move to *j* to make the product.

In this case, an increase in GDP per capita in the origin economy by US$2000 (the standard deviation for GDP per capita of APEC developing economies) results in a decrease in the tertiary outflow rate by approximately 2 percentage points. On the other hand, the average income in destination economies is not found to be a statistically significant pull factor. This may be because tertiary educated individuals are likely to earn significantly more than the average income, and are not necessarily influenced by average wages.

Macroeconomic and trade policies are found to significantly affect outflows of tertiary educated individuals. In particular, relatively more expensive economies drive out relatively more educated individuals. An increase in the CPI by one standard deviation among APEC developing economies (40 index points) will result in an increase in tertiary outflow by approximately 2 percentage points. Therefore, more expensive economies, characterised by higher levels of inflation, are likely to have more educated individuals leaving, all other things being equal.

If nations are interested in lowering and reversing the 'brain drain' from their economy, it is imperative for them to embrace sound macroeconomic management. One option is to have an independent central bank that targets inflation and ensures that the cost of living does not rise faster than wages. Recent empirical evidence shows that more independent central banks do indeed lower inflation across economies (Posso and Tawadros, 2013).

#### 5.3.3. Model 3: Total international population flows, developed and developing economies

As a first robustness exercise, we test the validity of our results by including both developed and developing economies as potential sources and destinations for mobile labourers. In this exercise, our proxy for pull factors remains the income level in the average OECD economy, which recognises that even when population flows takes place between rich economies, workers are likely to move because of better labour market conditions. The results are consistent with those found above. An increase in income in the origin economy significantly decreases the proportion of people who move internationally. There is some evidence that this effect is slightly different for APEC economies. However the overall effect remains negative and significant.

Additionally, an increase in average income in OECD economies leads to a positive and significant increase in international labour mobility. For example, an increase in average OECD income by US$10,000 leads to an increase in international population flow by 2 percentage points.

Finally, as above, better educational opportunities in the origin economy may result from the existence of more sophisticated labour markets demanding more highly educated workers. Again, this suggests that good employment and educational prospects exist domestically, which lowers relocation.

Among this more heterogeneous group of economies, there is no evidence that fiscal responsibility and managing inflation are important determinants of labour mobility, nor that trade has a significant effect. This may result from the fact that including a set of richer economies, which are generally more open and enjoy better economic management, makes it more difficult to distinguish economic performance. In other words, while among developing economies push factors are important determinants of labour mobility, a wider look at the data reveals that income differentials remain the key determinant.

### 5.3.4. Model 4: Total international population flows, tertiary educated

Looking at outflows of tertiary educated individuals for both developing and developed economies finds that international mobile labourers within APEC economies are significantly more responsive to shifts in local level income than such labourers from the rest of the world. For example, while a decrease in origin income by US$10,000 in the rest of the world does not have a significant effect, a similar decrease in APEC economies results in a rise in tertiary out educated outflows by 3 percentage points. Thus an economic crisis in APEC is more likely to result in large movements than one in Europe or Africa.

As above, CPI and imports have positive effects on outflows, while there is some evidence that exports decrease the rate of outflow. This finding is consistent with the interpretations above. Moreover, it indicates that macroeconomic management in the form of low levels of inflation, that lower the cost of living, significantly decrease 'brain drain' issues.

### 5.3.5. Model 5: South-South population flows

As mentioned earlier, approximately half of all mobile workers from developing economies go to other developing economies. In this model we do not include pull factors from richer economies. The results here are consistent with those found above, but also bring new findings to light. For example, economies with higher costs of living have larger proportions of their population looking for opportunities abroad.

Interestingly, this model reveals that relatively low levels of government expenditure decrease the rate of international relocation to other developing economies, while relatively higher levels have the opposite effect. It suggests that this turning point occurs when government expenditure reaches 10 per cent of GDP. Therefore, some level of expenditure remains important as developing economies require the provision of a number of essential services. However, fiscal responsibility is also important, as large levels of government expenditure can have detrimental effects on labour market outcomes domestically.

This analysis also finds that citizens from developing economies are more likely to move to other developing economies when the rate of domestic unemployment is high, as expected. Additionally, all things equal, an increase in income in APEC economies leads to significant rises in outflows. This indicates that citizens from APEC economies are mobile and use increments in earnings to finance relocation.

Overall, the South-South population flow model was able to explain international movements better than the South-North model, suggesting that there are a number of unobserved characteristics in developed economies that significantly restrict labour flows. Most likely these are institutional constraints that currently limit flows from developing to developed economies. For example, visa requirements and border protection policies in rich economies significantly restrict foreign workers. Differential income tax treatment, difficulties in recovering contributions or access to social protection or other employment benefit programmes, inordinate requirements to prove insurance coverage before receiving a work visa to take up a preferred position, or difficulties accessing banking or other financial services important for saving and remittances may all hinder productive flows of labour. Informal barriers may be even more pervasive.

Developing economies, which generally have more lax labour mobility policies, therefore receive a large share of foreign workers. Moreover, wage differentials between two developing nations are likely to be smaller, thus the benefits from relocation (relative to cost)

of easing restrictions is likely to be smaller. Easing restrictions on labour inflows in developed economies is more likely to benefit overseas workers from developing economies.

Nevertheless, as commonly noted, such policy shifts can in theory have a detrimental effect on destination labour markets. An increase in unskilled foreign workers to a particular economy could significantly decrease wages in the unskilled sectors of that economy. This effect is likely to be observed in both developing and developed destination economies. However, in most cases this effect is likely to be small as a large enough influx of foreign workers to significantly depress wages in a destination economy is unlikely. Moreover, a large enough outflow of workers from an economy would increase domestic wages there, lowering the incentives for further international migration.

### 5.3.6. Model 6: North-North population flows

A significant proportion of overseas workers from rich economies go to OECD economies. Another look at our sample reveals that 60 per cent of overseas workers from developed economies live in other developed nations. Amongst APEC economies, this proportion becomes 73 per cent. The purpose of this sub-section is to determine whether macroeconomic variables can also help explain some of these labour flows.

The model of North-North population flows shows that an increase in the income level of the average OECD economy leads to a rise in outflows, suggesting that pull factors, in terms of greater expected income, matter for overseas workers from developed economies. Additionally, a decrease in the origin economy income increases outflows, as expected. As above, there is some evidence that this effect is relatively smaller for APEC economies.

Government expenditure is again found to have a negative and significant effect on labour mobility, suggesting a crowding-out effect which lowers labour market opportunities domestically. The import and export variables are consistent with previous findings. However, this relationship is not evident for developed economies, possibly due to the fact that the export-sector in developed economies is more likely to be capital-intensive.

The neo-classical economics trade model predicts that trade patterns are driven by comparative advantage. Developing economies are abundant in labour and therefore have a comparative advantage in labour-intensive industries such as garment manufacturing. Developed economies, on the other hand, are capital abundant with a comparative advantage in capital-intensive sectors, such as the manufacturing of machines and transport equipment.

When economies liberalise trade, so the theory goes, the sectors in which they have a comparative advantage grow because of increased demand for exports. In developing economies this translates to an increase in demand for labour-intensive goods and therefore for labour. For developed economies this translates to an increase in demand for capital-intensive goods. In developing economies, the increased demand for labour is matched by a rise in wages relative to the cost of capital. In developed economies, on the other hand, the increase in demand for capital is matched by relatively lower wages with respect to the cost of capital.

Therefore, workers (particularly the unskilled) in more export-oriented developed economies will look toward relocating to less open economies (or possibly less developed economies) because their relative wages are low. In developing economies, on the other hand, the

opposite happens. The observed divergence of the effect of export-orientation on labour mobility patterns in developed and developing economies is therefore consistent with theory.

What this suggests is that developed economies facing large labour outflows should aim to increase their investment in education and human capital accumulation. This will allow their workforce to more effectively use the abundant capital in their economy, noting that a skilled workforce is more likely to be complimentary to capital-intensive industries.
A summary of the models' findings in relation to the effects of different factors' influence on labour mobility is shown in Table 7 on the following page.

**Table 7.** Summary results of empirical estimations: Impacts on labour flows

| | *South-North* | *Brain Drain (South-North)* | *Total* | *Total (Brain Drain)* | *South-South* | *North-North* |
|---|---|---|---|---|---|---|
| GDP per capita (thousands) | + | - | - | | | - |
| GDP per capita · *APEC* | - | | - | - | + | + |
| GDP per capita in OECD economies, avg. (thousands) | + | | + | | | |
| CPI | | + | | + | + | - |
| Government expenditure | | | | | - | |
| Unemployment | | | | | + | |
| Imports | + | + | | + | + | |
| Exports | - | - | | | - | - |
| Enrolment, primary (gross) | - | | - | | | |
| Education expenditure (OECD) | | | | | | |
| M2/GDP | | | | | | |

# 6. MICRO LEVEL EVIDENCE: PART ONE

## 6.1. Households with overseas workers and returned overseas workers in Mexico and Peru

This section focuses on household level data for Mexico and Peru. The two economies are chosen because of data availability. However, the economies also usefully represent the APEC region with Mexico being a relatively richer APEC economy and one of the world's largest senders of international workers, while Peru is a smaller and relatively poorer economy. The data come from censuses held in 2007 for Peru and 2010 for Mexico.[5]

The surveys cover 11,938,402 respondents in Mexico and 2,745,895 respondents in Peru and provided gender balance with 51 and 50 per cent of respondents being classified as female in Mexico and Peru, respectively.

Income data is not available for both economies, as a result we construct a wealth index using principal components analysis to categorise households as rich or poor (Filmer and Pritchett, 2001). The components that go into determining whether a household is rich or poor include whether the household has access to (a) electricity, (b) piped water, (c) sewage, (d) telephone, (e) a mobile phone, (f) internet, (g) a computer, (h) a washer, (i) a refrigerator, (j) telephone, (k) radio, and (l) a finished floor. Households are then categorised as poor if they belong to the bottom wealth quintile. The survey data suggests that approximately 15 and 45 per cent of households are relatively poor in Mexico and Peru, respectively.

## 6.1. Mobility patterns

Table 8 shows mobility patterns in each economy through the average number of international migrants per household. The table shows that approximately 90 per cent of households do not have a family member residing in another economy. International labour mobility from these developing economies is rare.

**Table 8.** International residents per household, Mexico (2010) and Peru (2007)

| | *Mexico* | | *Peru* | |
|---|---|---|---|---|
| | Freq. | Per cent | Freq. | Per cent |
| *No overseas residents* | 10,846,543 | 90.85 | 2,436,646 | 88.74 |
| *1* | 461,627 | 3.87 | 129,466 | 4.71 |
| *2* | 76,691 | 0.64 | 47,526 | 1.73 |
| *3* | 18,602 | 0.16 | 28,807 | 1.05 |
| *4* | 7,151 | 0.06 | 22,541 | 0.82 |
| *5* | 1,083 | 0.01 | 16,107 | 0.59 |
| *6* | 444 | 0 | 12,140 | 0.44 |
| *7* | 115 | 0 | 5,521 | 0.2 |
| *8* | 150 | 0 | 3,293 | 0.12 |
| *9* | 19 | 0 | 5,355 | 0.2 |
| *10 or more* | 525,977 | 4.41 | 38,493 | 1.4 |
| *Total* | 11,938,402 | 100 | 2,745,895 | 100 |

**Source**: Authors' calculations based on data from IPUMS.

[5] Sourced from the University of Minnesota's Minnesota Population Center's Integrated Public Use Microdata Series (IPUMS). IPUMS compiles data from various sources, in this case Mexico's National Institute of Statistics and Informatics and Peru's National Statistics Office.

Table 9 reveals the proportion of overseas citizens that lived in a rich economy in the last five years. The table shows that approximately 9 and 1 per cent of overseas return citizens in Mexico and Peru, respectively, lived previously in rich OECD nations, mainly the United States. That is, most international return citizens from these developing economies went to other developing economies. If similar patterns are evident amongst those workers who remain in foreign destinations, then we could infer that the majority of overseas workers from developing economies go to other developing economies.

**Table 9.** Overseas citizens who lived in high-income OECD economies, 5 years prior to survey, Mexico and Peru

| | *Lived in high-income OECD economies* | | |
|---|---|---|---|
| | No | Yes | Total |
| *Mexico* | 1,240,952 | 127,986 | 1,368,938 |
| | (90.65) | (9.35) | (100) |
| *Peru* | 277,070 | 3,519 | 280,589 |
| | (98.75) | (1.25) | (100) |

**Note**: Percentages in brackets. High-income OECD economies do not include Mexico and Chile.
**Source**: Authors' calculations based on data from IPUMS.

Table 10 shows the relationship between poor households and labour mobility. The table shows that although poor people would be more likely to have an incentive to relocate internationally in search for more income, they are less likely to do so. For example, in Mexico 9 per cent of non-poor households have a member of the family working abroad, compared to 8 per cent of the poor. In Peru, this difference is more striking with 14 per cent of non-poor households having an overseas worker compared to 5 per cent of the poor.

**Table 10.** Poor households and labour mobility

| | *Mexico* | | | *Peru* | | |
|---|---|---|---|---|---|---|
| | Does household have an overseas worker? | | | | | |
| *Poor* | No | Yes | Total | No | Yes | Total |
| *No* | 8.92 | 0.91 | 9.84 | 1.29 | 0.20 | 1.50 |
| | (90.72) | (9.28) | (100) | (86.29) | (13.71) | (100) |
| *Yes* | 1.64 | 0.15 | 1.79 | 1.15 | 0.07 | 1.21 |
| | (91.86) | (8.14) | (100) | (94.57) | (5.43) | (100) |
| *Total* | 10.57 | 1.06 | 11.63 | 2.44 | 0.27 | 2.71 |
| | (90.89) | (9.11) | (100) | (90.00) | (10.00) | (100) |

**Note**: Percentages in brackets. Number of migrants are in million.
**Source**: Authors' calculations based on data from IPMUS.

Table 11 shows cross tabulations for those individuals who worked in a rich economy and returned home. The table shows that while 11 per cent of non-poor Mexicans that lived abroad and worked in a rich economy, only 3 per cent of poor Mexicans did so. Similarly, 2 per cent of non-poor Peruvians who lived abroad lived in a rich economy, compared to only 0.05 per cent of the poor. That is, the majority of returned overseas workers from poor households in these developing economies never went to a developed economy.

**Table 11.** Poor households and labour mobility to rich nations

| | *Mexico* | | | *Peru* | | |
|---|---|---|---|---|---|---|
| | Does household have a migrant in a rich economy? | | | | | |
| *Poor* | No | Yes | Total | No | Yes | Total |
| *No* | 0.98 | 0.12 | 1.09 | 0.13 | 0.003 | 0.13 |
| | (89.22) | (10.78) | (100) | (97.97) | (2.03) | (100) |
| *Yes* | 0.23 | 0.01 | 0.24 | 0.15 | 0.00007 | 0.15 |
| | (97.06) | (2.94) | (100) | (99.95) | (0.05) | (100) |
| *Total* | 1.21 | 0.12 | 1.33 | 0.28 | 0.003 | 0.28 |
| | (90.62) | (9.38) | (100) | (99.01) | (0.99) | (100) |

**Note**: Percentages in brackets. Number of migrants are in million.
**Source**: Authors' calculations based on data from IPUMS.

Table 12 proxies for the skill-intensity of international workers with the skill-intensity of the respondent. The concept is that members from a household are likely to have similar levels of skill-intensity. The table shows that the majority of international workers from each economy are relatively unskilled. Similar patterns are evident from looking at returned citizens. However, Table 13 shows that the majority of skilled returned citizens from Peru went to a rich economy. Yet again, perhaps due to its proximity to the US, the majority of returned Mexicans seem to be unskilled workers.

**Table 12.** Skill-intensity of migrants

| *Worker* | *Mexico* | *Peru* |
|---|---|---|
| *Unskilled* | 307,186 | 93,448 |
| | (93.67) | (77.31) |
| *Skilled* | 20,758 | 27,421 |
| | (6.33) | (22.69) |
| *Total* | 327,944 | 120,869 |
| | (100) | (100) |

**Note**: Percentages in brackets.
**Source**: Authors' calculations based on data from IPUMS.

**Table 13.** Skilled and unskilled proportions of citizens who went to a rich economy

| *Worker* | *Mexico* | *Peru* |
|---|---|---|
| *Unskilled* | 65,742 | 533 |
| | (96.65) | (46.07) |
| *Skilled* | 2,279 | 624 |
| | (3.35) | (53.93) |
| *Total* | 68,021 | 1,157 |
| | (100) | (100) |

**Note**: Percentages in brackets.
**Source**: Authors' calculations based on data from IPUMS.

Table 14 presents the estimates of a probit model used to determine the key characteristics of mobile labourers. Probit models are regressions where the dependent variable can only take two values, for example overseas worker or not. The model is used to estimate the *probability* that an observation with particular characteristics will fall into a specific one of the categories.

The first column of the table focuses on households that at the time of the surveys had a member(s) of their family living abroad. Column 1 indicates that generally, households that fall under this category are in urban areas, they are not poor (poor households are 1.8 per cent less likely to have a family member abroad), they are relatively large (an increase in family size by 1 per cent leads to a rise in the probability that someone goes abroad by 1.2 per cent). Furthermore, using the parent's level of education and skill-intensity of occupation as a proxy for the overseas worker's corresponding characteristics, we find that overseas citizens are probably more educated and more skilled. For example, households where the father finished university are 2 per cent less likely to have a member working abroad.

Columns 2 and 3 of the table show the characteristics of returned citizens to each economy. The survey asked respondents if they lived abroad in the last 5 years. The data shows that returned citizens are usually male, younger than 35, married, at least completed primary school, and are less likely to be skilled workers.

The household characteristics of returned citizens are by and large similar to those mentioned above. For example, returned citizens are less likely to be poor and less likely to come from households where the father finished university. However, returned citizens are more likely to be from households with more educated mothers.

We have suggested that only a small proportion of overseas workers go to developed economies. Table 14 shows that by and large the characteristics of people who went to developed economies for work are similar to the characteristics of people who went to developing economies. However, the table shows evidence that foreign workers in developed economies are generally more skilled.

**Table 14.** Determinants of migration, household-level

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Dependent var: | H'hold has overseas member | Relocated | Relocated | Relocated | Relocated to rich | Relocated to rich |
| Female | | -0.0080*** | -0.0044*** | -0.0064*** | -0.026 | 0.0037 |
| | | [-106] | [-15.7] | [-42.3] | [-1.01] | [1.05] |
| Age | | 0.0017*** | 0.0027*** | 0.0033*** | 0.0058* | -0.0033 |
| | | [92.7] | [17.3] | [50.4] | [1.92] | [-0.59] |
| Age sqrd | | -0.000024*** | -0.000038*** | -0.000047*** | -0.000081* | 0.000048 |
| | | [-103] | [-14.7] | [-44.8] | [-1.86] | [0.60] |
| Married | | 0.0022*** | 0.0027*** | 0.0039*** | 0.0051* | -0.0028 |
| | | [25.9] | [6.20] | [15.7] | [1.70] | [-0.34] |
| Years of school | | 0.0014*** | 0.0017*** | 0.0019*** | 0.0033 | -0.0028 |
| | | [45.1] | [11.1] | [24.2] | [1.42] | [-0.72] |
| Years of school sqrd | | -0.00011*** | -0.00013*** | -0.00014*** | -0.00028* | 0.00019 |
| | | [-55.8] | [-14.1] | [-30.7] | [-1.73] | [0.66] |
| Skilled worker | | -0.00068*** | -0.000027 | -0.0013*** | 0.0030** | 0.0024* |
| | | [-4.50] | [-0.053] | [-4.77] | [2.01] | [1.75] |
| Attends school | | -0.0015*** | 0.00081* | 0.00086*** | 0.00062 | -0.00032 |
| | | [-8.92] | [1.89] | [2.65] | [0.33] | [-0.12] |
| Rural | -0.050*** | -0.0061*** | -0.0038*** | -0.0042*** | | |
| | [-56.1] | [-26.7] | [-6.05] | [-7.88] | | |
| Poor | -0.018*** | -0.0056*** | -0.0019*** | -0.0036*** | -0.058* | -0.0029 |
| | [-24.4] | [-66.9] | [-6.12] | [-22.3] | [-1.67] | [-0.29] |
| Family size | 0.012*** | -0.00077*** | -0.00032*** | -0.00046*** | -0.00011 | 0.00069 |
| | [113] | [-41.2] | [-6.08] | [-15.5] | [-0.25] | [0.87] |
| Number of children | 0.000045 | -0.0012*** | -0.00075*** | -0.0011*** | -0.0013 | 0.0015 |
| | [0.071] | [-37.2] | [-4.20] | [-11.0] | [-0.70] | [0.68] |
| Mother's age | 0.00012 | | -0.00013 | -0.000070*** | | -0.00013 |
| | [0.53] | | [-1.05] | [-5.60] | | [-0.72] |
| Mother's age sqrd | 9.5e-06*** | | 8.0e-07 | | | |
| | [3.69] | | [0.64] | | | |
| Father's age | -0.0016*** | | -0.00017 | 0.000019* | | 0.00016 |
| | [-8.07] | | [-1.60] | [1.76] | | [1.13] |
| Father's age sqrd | 0.000020*** | | 1.9e-06* | | | |
| | [9.26] | | [1.94] | | | |
| Mother married | 0.011*** | | -0.0011 | | | |
| | [2.93] | | [-0.68] | | | |
| Father married | -0.0098** | | 0.0013 | | | |
| | [-2.17] | | [1.23] | | | |
| Mother finished primary skl | -0.00017 | | 0.00099*** | 0.0011*** | | 0.00026 |
| | [-0.24] | | [3.41] | [6.10] | | [0.098] |
| Mother finished secondary skl | -0.0039*** | | 0.0017** | 0.0025*** | | -0.0012 |
| | [-4.22] | | [2.50] | [5.21] | | [-0.23] |
| Mother finished university | -0.0048*** | | 0.0042*** | 0.0060*** | | -0.031 |
| | [-3.56] | | [2.74] | [5.45] | | [-0.46] |
| Father finished primary skl | -0.0086*** | | -0.0012*** | -0.0013*** | | 0.0015 |
| | [-12.5] | | [-4.39] | [-8.24] | | [0.48] |
| Father finished secondary skl | -0.018*** | | -0.0017*** | -0.0018*** | | 0.0020 |
| | [-20.5] | | [-4.34] | [-6.38] | | [1.10] |
| Father finished university | -0.020*** | | -0.00011 | 0.00032 | | -0.024 |
| | [-18.1] | | [-0.15] | [0.65] | | [-0.96] |
| Mother is unskilled | 0.0079*** | | 0.00047 | | | |
| | [8.47] | | [0.87] | | | |
| Father is unskilled | 0.0025** | | 0.00014 | | | |
| | [2.40] | | [0.22] | | | |
| Mexico | -0.011*** | 0.0090*** | 0.0061*** | 0.0070*** | 0.99*** | 0.019 |
| | [-13.6] | [109] | [18.9] | [43.9] | [45.0] | [0.14] |
| IMR | | | | | 0.019 | -0.027 |
| | | | | | [1.47] | [-0.87] |
| Observations | 1,122,582 | 4,710,172 | 199,320 | 887,126 | 2,106 | 2,106 |
| Pesudo R-sqrd | 0.035 | 0.087 | 0.14 | 0.12 | 0.60 | 0.64 |
| Chi-sqrd | 22222 | 63168 | 3167 | 14577 | 357 | 377 |
| Chi-sqrd p-value | 0 | 0 | 0 | 0 | 0 | 0 |

**Note**: Results present marginal effects. *** p<0.01, ** p<0.05, * p<0.1. z-statistics in brackets.

Overall, the table highlights that overseas workers are usually not poor and are generally skilled if they go to developed economies. This suggests that current limitations to international labour movements occur for two reasons, one internal and one external. The internal reason is that relocation is expensive and therefore poor households are unable to send workers abroad. The implication of this is that overseas remittances are less likely to be flowing toward the very poor. The external reason seems to be that labour mobility restrictions in developed economies have successfully created a large bias in favour of skilled foreign workers. This means that developing economies are more likely to receive unskilled than skilled migrants. The implications are that while developed nations benefit from a brain gain, developing economies are only getting a larger inflow of unskilled labour.

The labour market implications of this finding are that international movements of labour to developed economies are more likely to have a downward effect on skilled worker wages. This may provide disincentives for the local population to seek skilling opportunities. In developing economies, on the other hand, the inflow of unskilled labour is likely to further depress unskilled wages, worsening income inequality and putting greater pressure on formal and informal social protection mechanisms.

# 7. MICRO-LEVEL EVIDENCE: PART TWO

## 7.1. Foreign workers in the United States

The purpose of this section is to highlight what features characterise foreign workers in the United States. We propose that foreign workers in this economy are intrinsically similar to foreign workers who choose to go to any other developed economy. That is, current foreign workers living in the US come from most economies around the world, including a list of both developed and developing economies. The data employed in this section comes from the 2010 American Community Survey administered by the US Census Bureau. The 2010 American Community Survey employed a single long form questionnaire completed by one of 100 households and group quarters. Our data includes information from 339,800 foreign workers drawn from IPUMS International.

Table 15 shows the origin regions or large economies where the majority of foreign workers in the US came from in 2010. The Table shows that approximately 28 per cent of foreign labour in the United States comes from Mexico, followed by 12 per cent from Western Europe, and 7 per cent from South and Central America, respectively. Overall, the Table shows that approximately 22 per cent of inflows to the United States come from developed economies, while 78 per cent come from developing economies. This gives impetus to the notion that international workers decide to relocate based on wage differentials.

Figure 10 further decomposes patterns in the data by highlighting the proportion of recent, mid and long-term foreign workers from each region/economy. Recent foreign workers are defined as those workers who arrived within the last five years. Mid-term foreign workers are defined as those who have been in the United States for less than 15 years, but longer than 5 years. Finally, long-term foreign workers are defined as those workers who have been in the United States for longer than 15 years. The figure highlights consistent proportion of foreign workers from each region.

Nevertheless, some interesting patterns emerge. Firstly, foreign workers from Western Europe make up a higher proportion of long-term foreign workers than the majority of other regions. However, the most common recent foreign workers come from developing East Asian economies. This pattern, where there is an increase in the proportion of recent foreign workers *vis-à-vis* long-term foreign workers is evident for other developing economy groups, including South Asia, China, Africa and MENA economies.

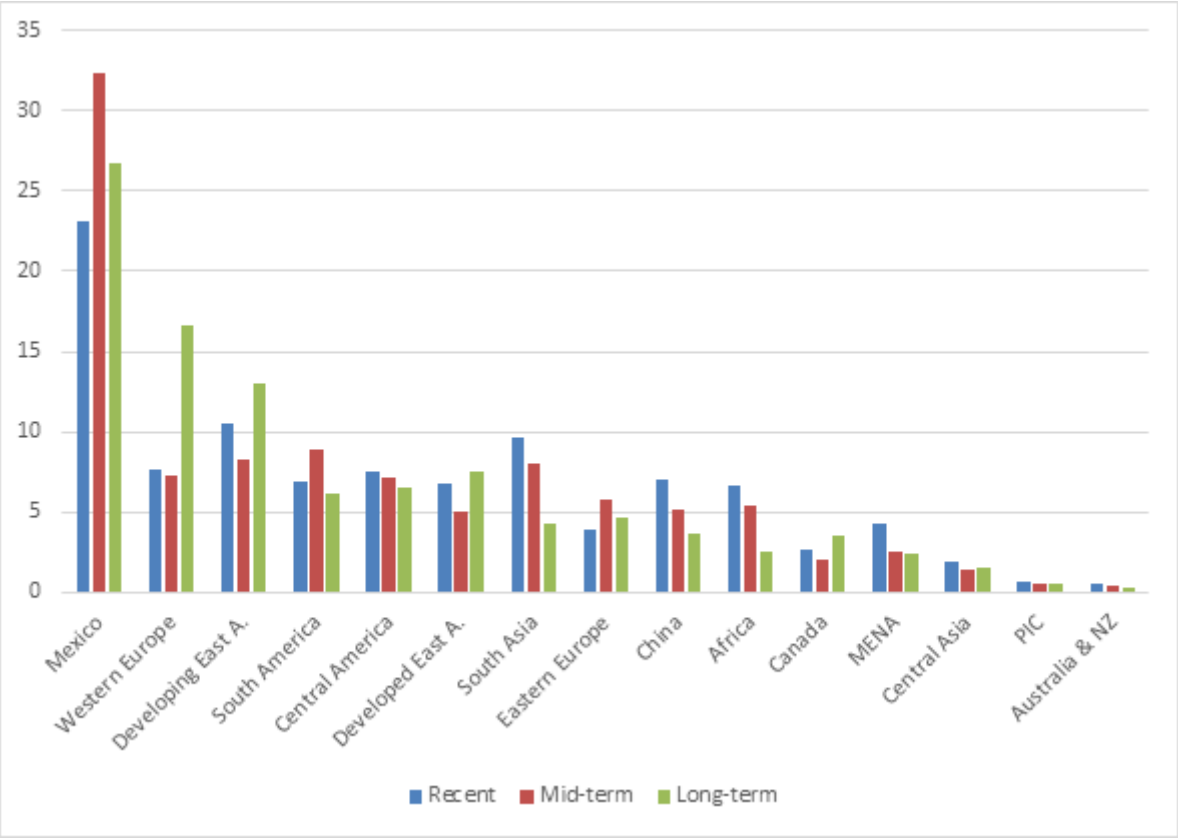
**Table 15.** Origin of Foreign Workers in the United States, 2010

| Region | Freq. | Per cent |
|---|---|---|
| Mexico | 94,850 | 27.91 |
| Western Europe | 42,209 | 12.42 |
| Developing East A. | 38,455 | 11.32 |
| South America | 23,827 | 7.01 |
| Central America | 23,232 | 6.84 |
| Developed East A. | 22,706 | 6.68 |
| South Asia | 21,089 | 6.21 |
| Eastern Europe | 16,418 | 4.83 |
| China | 15,670 | 4.61 |
| Africa | 13,512 | 3.98 |
| Canada | 10,110 | 2.98 |
| MENA | 9,263 | 2.73 |
| Central Asia | 5,209 | 1.53 |
| PIC | 1,959 | 0.58 |
| Australia & NZ | 1,291 | 0.38 |
| Total | 339,800 | 100 |

**Source**: Authors' calculations based on data from IPUMS International.

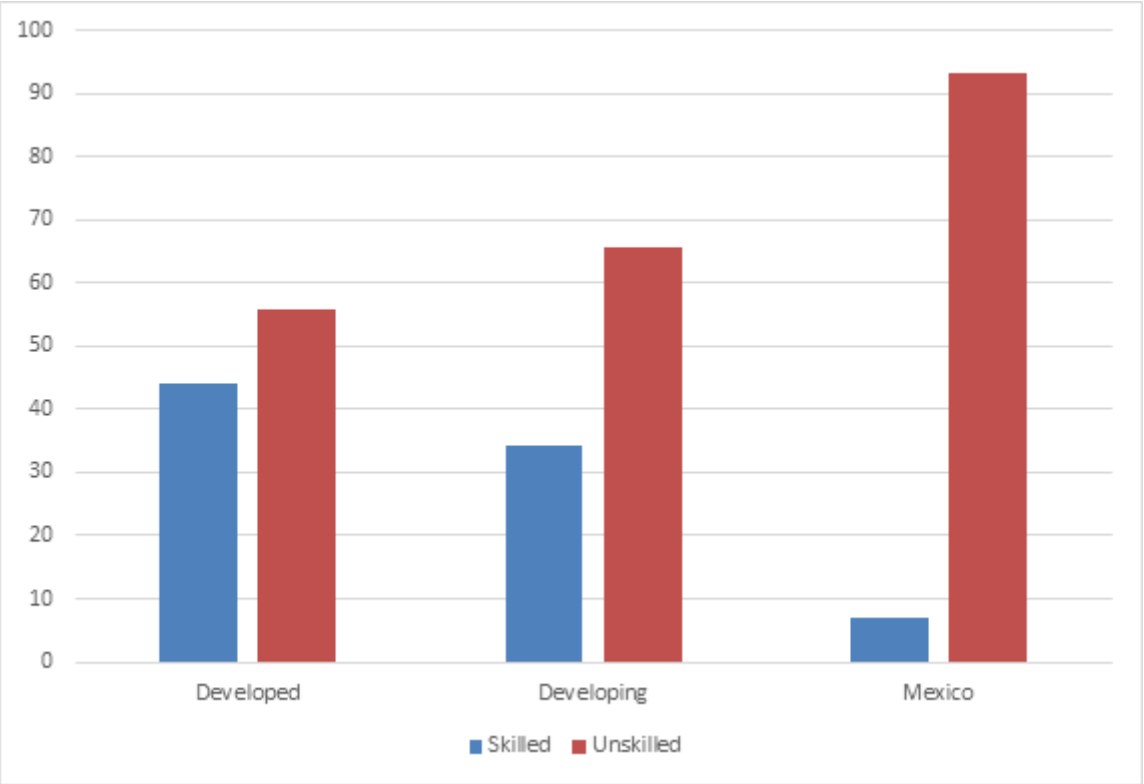
The decomposition by economy of origin is useful in the sense that it gives an idea of the degree of multiculturalism of international workers in the United States. However, in order to undertake a more formal labour market analysis, it is useful to categorise workers into skilled and unskilled. Skilled and unskilled workers are defined using ISCO classifications and the definitions in Elias (1997) based on 4 levels of educational attainment. However, Elias (1997) also notes that there are problems related to cross-national comparisons because national agencies may group skill-intensities differently than the ILO. Therefore, we aggregate skill-intensity into skilled and unskilled workers. Figure 11 presents the decomposition of the data by skill-intensity of the labour force. The figure shows that approximately two-thirds of foreign workers from developing economies in the United States are unskilled workers, while the corresponding figure for developed economy foreign workers is approximately 55 per cent. Mexican foreign workers, on the other hand, are overwhelmingly unskilled, with over 90 per cent of the Mexican foreign workforce falling under this classification.

**Figure 10.** Percentage of recent, mid-term and long-term foreign workers in the US in 2010, by origin region/economy




**Note**: Recent migrants are those who arrived within the last five years. Mid-term migrants arrived in the last 15 years, but not in the last 5 years. Long-term migrants arrived more than 15 years ago.
**Source**: Authors' calculations based on data from IPUMS International.

**Figure 11.** Percentage of skilled and unskilled foreign workers by level of economic development of origin region/economy, 2010

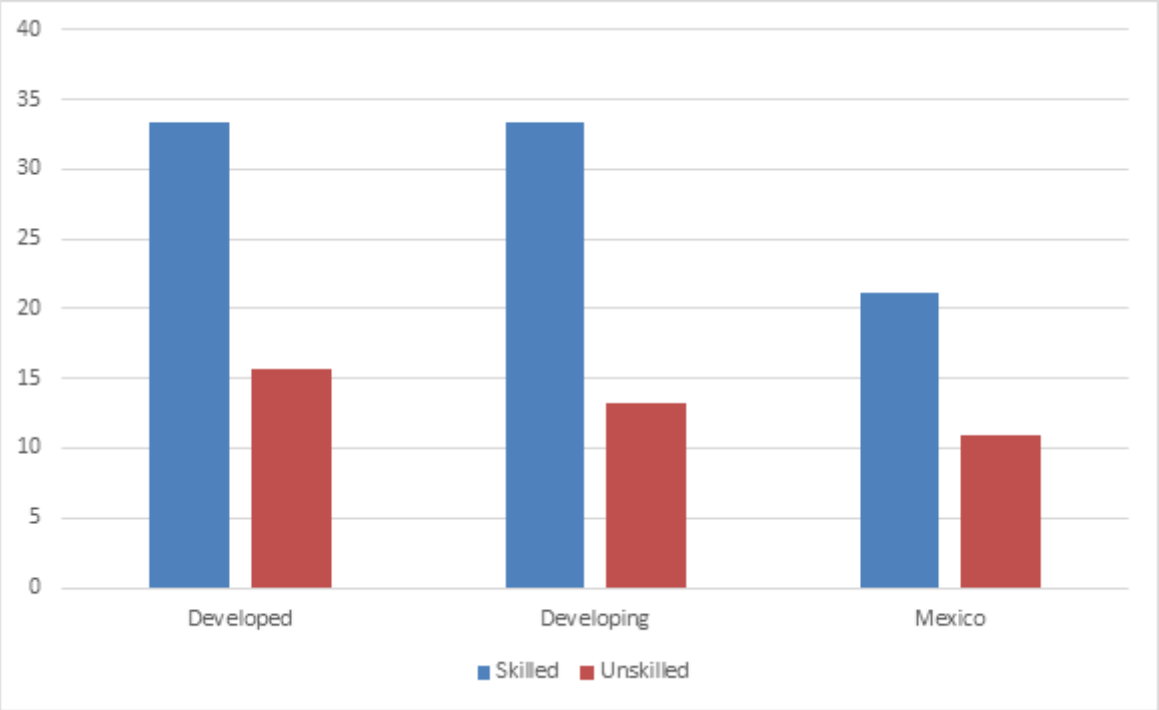



**Note**: Skilled/unskilled classification is based on Elias (1997). Economy classification is based into regional groupings. Mexico is separated because of the large number of Mexican citizens in the US (see Table 1).
**Source**: Authors' calculations based on data from IPUMS International.

It is not only of interest to highlight the skill-intensity of various foreign workers, but also to show whether significant differences in earnings exist between them. Figure 12 shows hourly earnings measured in United States dollars by skill intensity and origin economic classification. The figure shows that skilled workers from both developed and developing economies other than Mexico) generally earn approximately $33 an hour. This suggests that the type of skilled labour entering the United States is roughly homogenous, irrespective of the economy of origin.

However, the figure also shows that skilled Mexican migrants earn significantly less- approximately $21 per hour. This may stem from two reasons: (i) the type of skilled workers from Mexico have significantly different skills sets from other skilled migrants from other developing economy groups; or (ii) there is evidence of labour market discrimination.

**Figure 12.** Earnings per hour (USD) by skill-intensity and economy of origin, 2010




**Note**: Earnings are measured on an hourly basis in United States dollars. Skilled/unskilled classification is based on Elias (1997). Economy classification is based into regional groupings. Mexico is separated because of the large number of migrants (see Table 1).
**Source**: Authors' calculations based on data from IPUMS International.

Turning to unskilled workers, we find foreign workers from developed economies earn approximately $16 per hour, compared with $13 for foreign workers from developing economies. This difference may stem from unskilled workers from developing economies clustering in sectors with lower remuneration because of existing network effects or becoming unable to enter certain types of unskilled labour because of existing language barriers. Mexican unskilled workers are again found to be earning less than workers from other developing economies. Unskilled hourly wages for Mexican workers are approximately $11 per hour. Also, clustering in geographic regions may stem from labour market discrimination against Mexican workers or may be due to the legal status of some of these migrants. Indeed, anecdotal evidence suggests that a large proportion of Mexican migrants in the United States do not hold a valid work permit and as such may accept lower wages.

In order to finish painting this portrait of foreign workers in the United States it is also important to highlight key demographic information such as age, gender and marital status. Overall, the table shows that foreign workers from developed economies are usually in their mid-forties and married, with approximately half being women. Foreign workers from developing economies are in their early forties and married, with about half being women. Finally, Mexican skilled workers are in their early forties and more likely to be women (60 per cent), while unskilled workers are in their late thirties and more likely to be male (60 per cent). It is perhaps these demographic distinctions that are explaining the wage differentials between Mexican and non-Mexican developing economy foreign workers. Table 17 tests this proposition.

**Table 16.** Demographic characteristics of foreign workers in the United States, by skill-intensity and economic classification of origin, 2010

| | ECONOMIC CLASSIFICATION OF ORIGIN | AGE (MEAN) | FEMALE† | MARRIED OR IN UNION† |
|---|---|---|---|---|
| **PANEL A: SKILLED WORKERS** | Developed | 45.45 | 52.77 | 67.96 |
| | Developing | 42.76 | 51.44 | 72.44 |
| | Mexico | 40.97 | 59.94 | 65.03 |
| **PANEL B: UNSKILLED WORKERS** | Developed | 46.39 | 53.5 | 60.69 |
| | Developing | 42.53 | 48.52 | 61.59 |
| | Mexico | 39.43 | 37.42 | 61.53 |

**Note**: Age is presented as simple averages. † denotes percentage of total foreign workers. Skilled/unskilled classification is based on Elias (1997). Economy classification is based into regional groupings. Mexico is separated because of the large number of migrants (see Table 1).
**Source**: Authors' calculations based on data from IPUMS International.

Table 17 presents the results of a simple ordinary least squares (OLS) model using income per hour as the dependent variable regressed against the characteristics described above. OLS is a method for estimating the unknown parameters in a linear regression model, with the goal of minimizing the differences between the observed responses in a dataset and the responses predicted by the linear approximation of the data (seen as the sum of the vertical distances between each data point and the corresponding point on the regression line – the smaller the differences, the better the model fits the data). The resulting estimator can be expressed by a simple formula, especially in the case of a single regressor on the right-hand side.

Column 1 of the table shows a standard labour market outcomes model, where income per hour is a function of gender, age, marital status, years since moving to the United States, years of schooling, and skill-intensity. Column 2 adds to this model the economic classification of the region of origin of the foreign worker, with the omitted category being from a developed economy.[6]

[6] A similar analysis was undertaken for international workers from other major regions, such as Latin America and East Asia. The analysis revealed no significant difference.

**Table 17.** Income per hour regression results

| | (1) | (2) |
|---|---|---|
| FEMALE | -5.37*** | -5.58*** |
| | [-49.6] | [-51.2] |
| AGE | 0.88*** | 0.88*** |
| | [34.4] | [34.2] |
| AGE SQUARED | -0.0085*** | -0.0088*** |
| | [-27.6] | [-28.3] |
| MARRIED | 2.53*** | 2.64*** |
| | [21.7] | [22.7] |
| SEPARATED/DIVORCED | 0.52*** | 0.63*** |
| | [3.05] | [3.64] |
| WIDOWED | 0.081 | 0.24 |
| | [0.25] | [0.75] |
| YEARS SINCE MOVING TO THE US | 0.12*** | 0.13*** |
| | [23.2] | [22.5] |
| YEARS OF SCHOOLING | 0.60*** | 0.45*** |
| | [54.2] | [38.5] |
| SKILLED WORKER | 17.8*** | 17.1*** |
| | [112] | [106] |
| MEXICAN | | -3.30*** |
| | | [-19.4] |
| FROM A DEVELOPING ECONOMY | | -0.21 |
| | | [-1.14] |
| OBSERVATIONS | 185,130 | 185,130 |
| R-SQUARED | 0.17 | 0.17 |

**Note**: Robust t-statistics in brackets. *, ** and *** denote statistical level of significance at the 10, 5 and 1 per cent, respectively.
**Source**: Authors' calculations based on data from IPUMS International.

Overall, the results evident in the table are standard. Turning first to demographic characteristics we see that, all things equal, female migrants earn approximately five less dollars per hour than their male counterparts. This is often taken as evidence of labour market discrimination against women or possibly that women are specialised in activities that receive lower remuneration because of intrinsic differences in the female and male choice set.

Table 17 also indicates that income increases with age, as expected. The table shows that the income of foreign workers increases significantly with age, up until they are 50 years of age, at which point income begins to fall. Married, separated or divorced individuals earn greater amounts of income per hour than single or widowed workers.

Turning to skilling and levels of education, Table 17 shows that an additional year of schooling is associated with 45 to 60 additional cents per hour, *ceteris paribus*. Moreover, skilled workers make, on average, an additional $17 to $18 per hour. Finally, every additional year since moving to the United States results in approximately 12 more cents per hour, *ceteris paribus*.

The results in Column 2 of the table are consistent with those in Column 1. Moreover, the table shows that after controlling for gender, skill-intensity, age and other important determinants of income, foreign workers from developed and developing economies earn a statistically similar hourly income. However, the table also shows that Mexican workers in

the US earn approximately $3 less per hour and that this difference cannot be explained by the level of education or skill-intensity of employment. That is, Table 17 suggests that there exists some element of labour market differentiation acting against Mexican workers in the United States. Unfortunately, it is impossible to ascertain the legal status of these foreign workers in our data; therefore we cannot conclude here what the main source of this differential may be. Nevertheless, actively addressing issues of discrimination by origin against particular types of workers from certain areas is important. In fact, discrimination against particular workers in an economy based on nationality would in no doubt lead to significant constraints to labour mobility, particularly for those individuals who have viable alternative destinations. That is, this could potentially discourage the best and brightest international workers to choose a particular destination.

# 8. POLICY SUMMARY AND RECOMMENDATIONS

## 8.1. Policy summary

The preceding analysis highlights a number of factors that push and/or pull mobile workers between regional labour markets. It also highlights the constraints to labour mobility. As explained above the influence of each factor may vary depending on the skill level, economy of origin, potential economy of destination, and other particular characteristics for each worker. The more important push/pull factors as illustrated in the analysis above are summarised in Box 2 below.

**Box 2: Drivers of labour mobility – pull and push factors**

- Wage differential between host and origin economies.
- Low unemployment rate in host economy and high unemployment rate in origin economy.
- Low cost of living in host economy compared to origin economy.
- Educational opportunities in host economy.
- Level of imports (through impact on employment opportunities).
- Underdeveloped export markets (through impact on employment opportunities).
- Demographic pressures, e.g. workforce ageing and demand for labour in host economy.
- Structural shifts, e.g. changes in technology and increasing demand for new skills may require economies to import labour.
- Global interconnectedness, through technological advancement in transport and communication systems, has increase the speed and frequency at which people travel and communicate.
- Political, social and economic stability or instability can "pull" and/or "push" mobile workers.

The empirical analysis reveals that at the macroeconomic level there is no single set of policies influencing labour mobility that is generally applicable to all economies. For example, government expenditure in the origin economy may serve as a push factor for migration at low levels of income, yet in other economies, and in particular in developing economies with rapidly rising income government expenditure may well support a level of services that serves as a pull factor.

Evidence of a quadratic term in the influence of the destination economy income suggests that foreign workers may avoid seeking work in economies with fewer social protections. This could potentially cause a loss of available labour and output in some economies. In 2014, APEC HRD Ministers committed to strengthen social protection in APEC member economies and "consider ways that APEC could enhance the protection of migrant workers' rights through a balance of responsibilities across economies". APEC economies are encouraged to :

- Adopt at least basic social protection measures to protect both domestic and foreign workers from unfair work practices.
- Consider bilateral, regional or multilateral arrangements to facilitate access to social security and the portability of social security entitlements.
- Consider a mix of policies to support the integration of migrant workers in the labour market.
- Strengthen and develop effective systems of disseminating public information about workers' rights.

- Improve and develop regulatory measures to monitor the implementation of labour standards.

Macroeconomic analysis also points to other factors that may impact on labour mobility:

a) when government expenditure becomes an increasingly larger proportion of GDP, it may crowd out investment opportunities from the private sector, with negative employment effects and result in an outflow of labour
b) the provision of government services is important for workers to want to remain at home in developing economies, mitigating excessive flows of international labour. The provision of essential services, such as education and health is important in mitigating outflows of labour and may also raise productivity and wages.
c) the provision of cash-transfers to the unemployed may work as an important deterrent against excessive labour outflows from developing economies.
d) Incentive based return policies through the fiscal system such as refunding half of the taxes paid upon proof of return may lead to reduction in costs of returning international workers to the home economy and better social outcomes.
e) increased imports as a share of GDP results in an increase in labour outflows., (Economies with a large share of imports are likely to have smaller domestic labour markets and employment opportunities, and citizens in these economies are significantly more likely to look toward international relocation).
f) better educational opportunities in the origin economy decrease labour outflows, presumably because they may result from (and lead to) more sophisticated labour markets. Therefore, increments in educational provision, both public and private, are important because more education is also likely to result in more innovation and greater employment opportunities.

The analysis also shows that the South-South population flow model is able to explain labour movements better than the South-North model. This suggests there are a number of unquantified characteristics limiting labour mobility between the south and the north. One possibility is that these characteristics are institutional constraints, such as stringent visa requirements, limited skills recognition, difficulties in integration of migrant workers and high remittance transaction costs in developed economies. APEC economies could consider a number of measures to ease such constraints, including but not limited to:

- Establishing agreements on entry visa terms and requirements.
- Establishing mutual, multilateral and regional skills and qualifications recognition frameworks.
- Reducing remittance costs and improving security, efficiency and reliability of the remittance transfer sector.
- Promoting and developing effective labour market integration systems to increase productivity and improve labour market outcomes for migrant workers.
- Building incentive based return policies through the fiscal system such as refunding half of the taxes paid upon proof of return may lead to better social outcomes and reduction in the costs of returning international workers to the home economy.

Analysis shows that easing such constraints is likely to result in an inflow of labour to developed economies. While this could have negative labour market effects in destination

economies, in practice inflows are likely to be too small to have any significant effect on the overall economy.

The analysis of developing economies confirms that those people able to travel to developed economies are generally not classified as low income. This suggests that overseas remittances are less likely to be flowing to the very poor in developing economies and for this reason interventions to reduce the costs of remittances as investment flows to projects with high social impact should be considered.

Analysis also shows that workers from developing economies with international experience in developed economies are generally more highly skilled than other overseas labour, suggesting that labour mobility restrictions in developed economies have successfully created a significant bias in favour of skilled workers. The labour market implication is that international movement of labour to developed economies is more likely to have a downward effect on skilled labour wages.

Labour mobility remains a key priority for APEC and innovative strategies are being developed or proposed to unlock its economic potential for inclusive growth in the region. APEC should continue to support and encourage this work. The development of a regional labour mobility framework should be considered to enhance the mobility of labour and skills and achieve better people-to-people connectivity outcomes.

APEC should continue to promote a sectoral approach to labour mobility to ensure that the movement of workers is matched with labour market needs in the region.

## 8.2. Key recommendations

Based on the analysis we make the following key policy recommendations for APEC member economies to enhance their net benefits of labour mobility

Recommendation 1

The report recommends that APEC economies consider policy options to ease institutional constraints to the movement of workers in the region.. This is likely to result in an inflow of labour to developed economies and increase the capacity of these economies to respond swiftly to labour shortages. It is most likely that international labour inflows will be too small to have any significant effect on the overall economy. However, certain sectors may see a significant fall in wages if unskilled workers from developing economies enter. Specific policies to ease adjustments in affected sectors may be warranted.

Recommendation 2

To attract workers and build inclusive labour markets, economies should adopt basic social protections concerning employment benefits for both domestic and foreign workers and provide safe working conditions.

Recommendation 3

A number of studies have identified the absence of effective frameworks for recognition of qualification and skills as a major barrier to global labour mobility. The HRD Ministerial Action Plan (2015-18) identified skills recognition as a priority for the enhancement of cross-border labour mobility. Australia is currently leading an APEC self-funded project to explore opportunities for developing an 'APEC Integrated Referencing Framework for Skills

Recognition and Mobility'. The report recommends that APEC and member economies actively participate and contribute to this body of work.

Recommendation 4

In 2014, APEC Human Resources Development Ministers encouraged dialogue and research into effective strategies of managing the mobility of labour and skills in the region. The report recommends that APEC support research initiatives on this issue and encourage dialogue on existing proposals, including the ABAC's 'Earn, Learn, Return' concept.

Recommendation 5

APEC and member economies should comprehensively analyse the costs and benefits of skilled and unskilled labour mobility policies. With appropriate adjustment policies, developed economies can benefit more from inflows of unskilled workers, providing locals with cheaper services in the host economy.

Recommendation 6

The report recommends that governments should consider a range of policy options to reduce remittance costs, strengthen the security of remittance services and improve their efficiency. As outlined in the United Nations Sustainable Development Goals, remittances to developing economies have a positive role in reducing poverty and inequality.

Recommendation 7

Incentive based return policies through the fiscal system such as refunding half of the taxes paid upon proof of return may lead to a reduction in the costs of returning international workers to the home economy, and better social outcomes.

Recommendation 8

There is a strong need for APEC to support and promote the collation of further data on an ongoing basis to support rigorous analysis of labour mobility trends, costs and benefits.

Recommendation 9

Governments should provide adequate essential services, such as education and health, to raise both labour productivity and the quality of life for workers and their families. Considering the provision of cash-transfers to the unemployed may also be beneficial. These factors may work as significant incentives for workers to remain in their local economies, reducing excessive outflows. Also, adequate essential services will facilitate the circulation of labour and skills, e.g. building incentives to enable migrant workers to return and use their experiences to contribute to economic development.

Recommendation 10

Economies, particularly in developing economies, should exercise fiscal responsibility to help minimise crowding-out of private investment projects and generate domestic employment opportunities with potential net benefits.

Recommendation 11

Governments should support exports to generate domestic employment opportunities where the lack of such opportunities is the main factor motivating labour outflows.

# 9. CONCLUSION

Economic developments in the APEC region continue to be influenced by, and to influence, international mobility by millions of workers, but misconceptions about the phenomenon remain common in the policy arena. Approximately half of all overseas workers from developing economies go to other developing economies. Over 70 per cent of overseas workers from developed APEC economies live in other developed economies. Yet almost all policy attention is on labour mobility from developing to developed economies.

APEC has agreed on measures that facilitate the mobility of skilled workers, investors and entrepreneurs. It aims to (i) simplify short-term entry arrangements for business visitors; (ii) streamline processing for skilled persons seeking temporary residence; (iii) develop transparent regulatory arrangements to allow for seamless cross border movement; and (iv) develop Mutual Recognition Agreements (MRAs) for specific professions and occupations.

Focusing on such flows, however, is likely to exacerbate existing patterns already present in the data. That is, workers from developed economies will go toward other developed economies, while unskilled workers from developing economies will work in other developing nations or seek informal opportunities in more developed economies. The APEC region would benefit from adopting policies that enhance the participation of unskilled workers, particularly in sectors where the supply of domestic labour falls short of demand within developed economies. In particular, adopting an APEC Recognized Seasonal Employer programme based on New Zealand's initiative may be beneficial. Indeed, such programmes are likely to benefit relatively poorer households in origin economies.
More generally, APEC economies outside of ASEAN could do well to adopt the ASEAN Declaration on the Protection and Promotion of the Rights of Migrant Workers.
Nevertheless, to provide a set of more cohesive evidence-based policy recommendations, more data is necessary. For example, it is currently not possible to carefully assess the benefits, costs and development implications of existing labour mobility policies in the region. Initiatives such as the 'Earn Learn and Return' model proposed by the APEC Business Advisory Council would benefit from studies that look at the macroeconomic, microeconomic, social and political outcomes associated with their implementation.

Assessment of current schemes and the experiences of international workers and their destination and origin communities could merit further analysis focusing at both the individual and household-levels. This requires significant commitment to funding, but also to transparency. Better data on labour mobility, and better policy analysis based on that data and along the lines suggested in this report, will benefit both mobile workers in APEC and its less mobile residents.

On this basis, APEC economies should enhance labour mobility and adopt basic social protections concerning employment benefits and provide safe working conditions both for domestic and foreign workers.

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# TECHNICAL APPENDIX

## Macroeconomic labour mobility models and estimations

### 1. Methodology

We employ a mixed-methods approach based on both quantitative and qualitative techniques. APEC economies have, by and large, had very different labour mobility experiences, with some economies being net labour recipients while others are net senders. Therefore, it is important to not only better understand the key push factors that have driven people out of some economies, but also understand what the main pull factors have been.

The macroeconomic component of this study estimates a reduced form equation that isolates these push and pull factors for the average overseas worker of economy *i* in period *t*. As such, we estimate the following model

$$MR_{i,t} = \beta_1 \boldsymbol{PF}_{j,t-1} + \beta_2 \boldsymbol{\pi\varphi}_{i,t-1} + \gamma_i + \lambda_t + \varepsilon_{i,t}, \qquad (1)$$

where $MR_{i,t}$ is the rate of outflow from the origin economy *i* at time *t*. As highlighted above, the empirical specifications uses variants of the dependent variables, such as to total flows of people from developing to OECD economies (South-North population flow); flows of tertiary educated individuals; and total population flow. $\boldsymbol{PF}$ refers to a vector of pull factors from the destination economy *j*. Pull factors refer to variables such as high income in the destination economy. The vector $\boldsymbol{\pi\varphi}$ refers to push factors, such as low income in the origin economy *i*.

In order to ensure that causality goes in the right direction we employ lags of these independent variables in the model. The intuition is that the decision to relocate is undertaken by the worker today based on information obtained from previous years. Moreover, employing lags in the estimation also mitigates against the possibility of reverse causality or endogeneity. In essence, large outflows from economy *i* to economy *j* at time *t*, could potentially significantly decrease labour supply in economy *i*, while increasing labour supply in economy *j*. As a result, at least in theory, this labour supply shock could increase wages (income) in the origin economy, *i*, while depressing wages in the destination economy, *j*. Using lags ensures that $\boldsymbol{PF}$ and $\boldsymbol{\pi\varphi}$ affects labour mobility, but not the other way around.

The variable $\gamma_i$ represents economy-level fixed effects used to control for omitted time-invariant economy-level characteristics that could potentially affect the decision to relocate. For example, Small Island Developing States (SIDS) are characterised by smaller economies and few labour market opportunities because communities in these economies are geographically isolated and often have few resources available for export markets. Therefore, citizens from SIDS, such as Papua New Guinea, are likely to look for work abroad even if macroeconomic policies are consistent with a high level of employment growth at home. The variable $\gamma_i$ captures these idiosyncratic economy-level characteristics in order to isolate them, which allows us to focus more on $\boldsymbol{PF}$ and $\boldsymbol{\pi\varphi}$.

The variable $\lambda_t$ is analogous to $\gamma_i$ in the sense that it captures unobserved characteristics. However, $\lambda_t$ captures unobserved shocks that affect relocation decisions across economies at time *t*. For example, the recent global economic crisis lowered world trade significantly for the first time since World War II. This shock and the preceding hikes in the price of food and fuel, affected virtually every economy in the world simultaneously. Following the crisis, the relocation decision of households would have changed. The variable $\lambda_t$ captures these

covariate time-specific shocks in order to isolate them, which again allows us to focus more on $\boldsymbol{PF}$ and $\boldsymbol{\pi\varphi}$. Finally, the term $\varepsilon_{i,t}$ is an idiosyncratic error term that is allowed to vary by economy and time.[7]

Overall, therefore, our method is to first control for as many external and unobserved characteristics as possible before focusing on key macroeconomic variables that can affect labour mobility. Only then can we make practical policy suggestions.

As mentioned above, a second component of this study is undertaking a microeconomic analysis. The macroeconomic analysis sheds light on how general economic management and policies affect migration flows. However, the decision to migrate is one taken at the household level. In order to shed light on these considerations we will use data from the University of Minnesota's Minnesota Population Center's Integrated Public Use Microdata Series, International (IPUMS), a collection of household surveys covering Peru, Mexico and the United States.

This microeconomic analysis will essentially rely on cross-tabulations, where the correlations between key variables of interest, such as poverty and labour mobility can be calculated at the household level. If necessary, we may also estimate equations using Probit regression analysis. Probit models are used to determine the probability that a household member relocates after effectively holding constant a series of characteristics, such as levels of health and income.

This approach is often useful when it is necessary to isolate the marginal effect of a specific variable on the probability of relocation. For example, governments may be interested in isolating the effect of finishing secondary school on labour mobility at the household level. The Probit approach can be used to calculate how an additional year of schooling changes the probability of relocation after controlling for other household characteristics. Understanding the relationship between these variables, in turn, allows policy makers to make more informed calls about, in this case, how much additional spending on education may be needed.

The next section discusses the macroeconomic estimations and results.

## 2. Empirical Results

### 2.1 Model 1: South-North Population Flows

If we estimate Equation (1) for a set of developing economies, we obtain the following relation:

$$MR_{i,t} = 0.14\boldsymbol{Y}_{j,t-1} + 0.28\boldsymbol{Y}_{i,t-1} + \gamma_i + \lambda_t + \varepsilon_{i,t}, \qquad (2)$$

where $\boldsymbol{Y}_{j,t-1}$ is GDP per capita in OECD economies in period *t-1* and $\boldsymbol{Y}_{i,t-1}$ is GDP per capita in the origin economy in period *t-1*. Furthermore, the coefficient estimates are found to be statistically significant at the 1 per cent level.

Equation (2) indicates that after including economy ($\gamma_i$) and year ($\lambda_t$) fixed effects, an increase the average level of income in rich OECD economies by 10,000 US dollars, will

[7] Due to limited data availability, year-fixed effects are not included in the model with educational expenditure in OECD economies because their inclusion leads to the omission of this variable from the estimation. This is likely to generate an upward bias in the coefficient estimate attached to the independent variable.

increase international population flows from the average developing economy in our sample by 1.4 percentage points. Similarly, the coefficient estimate attached to $\boldsymbol{Y}_{i,t-1}$ suggests that an increase in the level of income per person from the sample average of 2 thousand US dollars to 6 thousand US dollars will result in an increase in international outflows by approximately 1 percentage point. Again, this suggests that relocation is costly and additional average income is likely to be used by the household for relocation purposes.

Developing economies from APEC, however, are inherently different from the average developing nation in a number of ways. Therefore, it is also intuitively appealing to re-estimate equations (1) and (2) after interacting the origin economy income term with an APEC dummy variable and estimate the following function.

$$MR_{i,t} = \beta_1 \boldsymbol{Y}_{j,t-1} + \beta_2 \boldsymbol{Y}_{i,t-1} + \beta_3 \boldsymbol{Y}_{i,t-1} \cdot APEC + \gamma_i + \lambda_t + \varepsilon_{i,t}, \quad (3)$$

where the interpretation of the coefficient estimates $\beta_2 + \beta_3$ give the effect of an increase in $\boldsymbol{Y}_{i,t-1}$ in APEC member economies. The estimation of this equation is given by

$$MR_{i,t} = 0.14\boldsymbol{Y}_{j,t-1} + 0.37\boldsymbol{Y}_{i,t-1} - 0.46\boldsymbol{Y}_{i,t-1} \cdot APEC + \gamma_i + \lambda_t + \varepsilon_{i,t}, \quad (4)$$

where, as in Equation (2), all coefficient estimates are statistically significant. Importantly, Equation (4) differs from Equation (2) in the sense that it finds evidence that relatively low income in origin economies, relative to destination economies, acts as a push factor away from developing APEC economies. In particular, an increase in the average income of developing economies in the APEC region by 2 thousand US dollars, leads to a decrease in the population flow to developed economies by 1.8 ((0.37 – 0.46) · 2) percentage points.

Table A1 tests the robustness of this relationship by including a set of independent variables interchangeably. The last column of Table A1 combines the variables that were found to be statistically significant within one multivariate regression, which serves as our preferred specification.