Asia-Pacific Economic Cooperation

Advancing Free Trade for Asia-Pacific Prosperity

# ASIA REGION FUNDS PASSPORT

## A Study of Potential Economic Benefits and Costs

**APEC Policy Support Unit**

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# Summary

**Study of Potential Economic Benefits and Costs of the Asia Region Funds Passport –**

- The Asia Region Funds Passport (ARFP) is an initiative of the APEC Finance Ministers' Process. The ARFP is a proposal for a multilaterally agreed framework allowing cross-border offers of eligible collective investment schemes (CIS) in ARFP member economies. Membership in the ARFP would be open to all APEC economies in the Asia region that meet certain criteria and at the discretion of individual economies.
- In September 2013, finance ministers from Australia, Korea, New Zealand and Singapore signed a Statement of Intent on the establishment of the ARFP. According to the Statement of Intent, the ARFP aims to "facilitate the growth and competitiveness of financial markets in the region and the fund management industry, creating a common framework that has the effect of reducing the regulatory inconsistency and overlap faced by collective investment scheme operators seeking to offer CIS in multiple economies" (APEC 2013, p. 4).
- The objective of this study is to evaluate the business case for introducing the ARFP into Asia. It will examine the current state of the mutual funds industry in order to evaluate the benefits that the ARFP can bring into the region. The potential gains from the ARFP will be assessed against the potential risks so that decision makers can implement specific measures to maximize the net benefits.

**The mutual funds industries in Asia: current landscape and dynamics**

- Since the 1980s, Asian financial wealth has increased at an impressive rate, riding on the region's strong economic performance. As of 2012, Asia had become the second wealthiest region in the world, collectively holding USD 45.2 trillion, equivalent to 33 percent of global financial wealth. The asset management industry in Asia has not fully profited from the region's rising prosperity. In 2012, Asia's total assets under management (AuM) amounted to only 16 percent of the world's AuM (Boston Consulting Group 2013).
- The Asian funds industry is characterized by a large degree of diversity in terms of the pace of development and the size of the market. The mutual funds industries in Australia; Hong Kong, China; Korea; Japan; Singapore and Chinese Taipei are relatively well developed. Some markets also are of significant size. Australia's industry, with USD 1,677 billion AuM, is the third largest in the world whereas the markets of Japan and China are among the top 10 largest. At the other end of the scale, the funds industries in Indonesia and the Philippines are small, not only in terms of the absolute size but also in relation to their gross domestic product (GDP).
- The divergence of the funds industries in Asia reflects many factors, including different regulations, different tax incentives and the overall investment infrastructure. Key drivers of growth in the managed funds sector in Australia; Hong Kong, China and Singapore have been the universal pension systems, a high proportion of affluent individuals in the population and strong insurance sectors.
- A supportive investment environment also plays an important role. For example, Singapore's introduction of tax incentives for funds (such as the Resident Fund Scheme, the Enhanced-Tier Fund Management Scheme and the Offshore Fund Scheme) has provided its fund industry with a good platform for investments to be managed in Singapore.

- Asia[1] as a whole holds about 15 percent of European fund assets. In some of Asia's more open fund markets – such as Hong Kong, China; Singapore and Chinese Taipei – there is evidence of a strong appetite for offshore funds as a way to diversify investor portfolios. In Chinese Taipei, offshore funds account for 89 percent of total funds.

- Some markets, however, impose restrictions on the offer of offshore funds. In these markets, a majority of funds (95 percent in China; 96 percent in Indonesia and 81 percent in Korea) are invested in local funds, highlighting a large concentration of risk and a lack of alternative investment options for investors.
- In general, Asian-domiciled funds have been disproportionally disadvantaged from benefiting the region's growing demand for cross-border funds. In 2011, Asian funds accounted for USD 400 billion of cross-border funds traded in Asia. This is less than the USD 500 billion of Undertakings for Collective Investment in Transferable Securities (UCITS) products traded in Hong Kong China; Singapore and Chinese Taipei. In comparison, UCITS funds account for 71 percent of the EUR 9,392[2] billion European funds market (European Fund and Asset Management Association 2013).
- Empirical evidence from the United States (US) shows that the total expense ratio (TER) – a proxy for the costs to manage funds – has an inverse relationship with fund size. The large size of the US funds market, together with a well-developed funds management industry, has allowed the industry to achieve economies of scale.
- An examination of the relationship between TER and fund size in some key funds industries in Asia reveals only some markets are equipped to attain economies of scale. In Chinese Taipei, the existence of economies of scale is evident through the fact that as the expense ratio decreases the fund size increases. On the other hand, there is little evidence of economies of scale in other Asian funds markets. In Indonesia and Korea, for example, a large percentage of funds are small and are therefore not able to achieve economies of scale. As a result, the costs of managing funds in these economies are high. Indonesia's asset weighted expense ratios are high at 2.6 percent on aggregate. This compares unfavorably with the expense ratio of the few EU funds available locally (0.9 percent).

**Improving efficiency from the ARFP can save Asian investors USD 20 billion per annum in fund management costs**

- Once the ARFP has been established, fund managers in a participating economy will be able to offer a single fund across multiple markets. It is expected that the resulting larger client base will grow the fund size sufficiently to realize economies of scale.
- At the same time, increased competition, an increased number of funds and increased funds under management will help to keep the fund size at an optimal level so as not to erode fund performance. Investors will also benefit from improved efficiency as direct access to offshore funds results in the elimination of an extra layer of fees and commissions charged by local operators.
- Using a conservative assumption of 20 percent increase per annum in AuM over the 5 years following the introduction of the ARFP, a simulation exercise shows that almost all Asian funds markets studied in this report would achieve better efficiency, quantifiable in terms of TER reductions. The potential savings range from 8 basis points in the case of Australia to as high as 100 basis points in the case of Indonesia.

[1] Australia and New Zealand are included in the Asia Region Funds Passport initiative. Therefore, in this report, these two economies are considered in the analysis for the Asian region.
[2] As of Q1 2013

- An extrapolation exercise indicates that if the current costs of managing funds in the Asian region can be lowered by only 20 basis points, a saving of more than USD 20 billion per annum can be achieved.

**The ARFP offers better fund performance in the form of higher returns for investment at the same or lower degree of risk**

- Currently investors in some Asian economies have limited products available to them. This is due partly to strict regulations in those economies that have discouraged fund managers from distributing foreign funds into local markets. Without a broad range of foreign products to choose from, investors have to place the bulk of their funds in local products.
- There is a high possibility that investors would not attain the most optimal fund performance from a portfolio that consists entirely of domestic assets. Spreading investments among different independent jurisdictions can eliminate a large part of domestic economy risk. However, international portfolio diversification can facilitate the possibility of reducing risks only if values of cross-market correlations of returns are low.
- This report examines the merits of international portfolio opportunities to investors in five Asian markets: Australia; China; Korea; Singapore and Chinese Taipei. The findings show that a portfolio with funds within the same economy has high correlations. The median local correlation ranges from 70 percent for Korea to about 89 percent in Singapore. When a portfolio that includes funds from the region is constructed, its median correlation with other funds in the region is estimated to be 54 percent, indicating investors can gain from diversifying their investments across Asian markets, that is, earning a higher return for the same level of risk or taking less risk for the same level of return.
- The benefits of a more optimal portfolio can be transferred to investors in the form of better returns for risks. For example, under the ARFP, for every 1 percent increase in volatility, the expected returns increase by 2.3 percent. In comparison, for every 1 percent increase in volatility, the expected returns increase by only 0.22 percent in China or 0.9 percent in Korea. The Sharpe ratios for selected Asian markets provide another assessment of the performance of these industries from a risk-return perspective. Typically, a low Sharpe ratio indicates that the risk is too high for achieved returns. High Sharpe ratios indicate that the returns are in excess of the low risks assumed. Funds in China and Korea had higher levels of volatility in 2012. As a result, the Sharpe ratios for these economies are low (0.3 for China and 0.4 for Korea).
- On the other hand, some Asian markets performed well in 2012. The Sharpe ratios for Australia and New Zealand were 2.24 and 2.31 respectively. Funds in some emerging markets that have seen high returns also scored well in 2012, with the Sharpe ratio of 2.53 for the Philippines and 2.38 for Thailand.
- The wide divergence in the performance of mutual funds across different markets indicates that a portfolio that comprises a combination of funds from all these economies would achieve superior performance and be able to compete well with other established products such as UCITS. Indeed, the simulation exercise estimates that the Sharpe ratio for the ARFP would be 2.77, higher than that of any individual Asian local product.

**The ARFP can potentially create 170,000 jobs in Asia and promote sustainable economic development by facilitating the region's savings toward productive investment**

- The ARFP – which will represent a milestone towards deepening financial integration in Asia – can bring significant benefits to the wider regional and global economies. By helping to channel resources from surplus markets to markets where capitals are in short supply, the AFRP will support the recycling of savings towards productive investments that are critical for Asia's future economic growth.
- The benefits can also extend beyond financing investment needs. The ARFP can introduce to local funds industries foreign technical know-how, competitive pricing and higher standards of disclosure and performance. These promote efficiencies in the local fund industries, resulting in greater global competitiveness of the Asian funds management industry.
- Under the right environment, the thriving of the asset management industry can become a vital source of growth in itself. One of the measureable contributions of the ARFP to the economy is the potential increase in employment numbers in the funds industries in Asia.
- An essential feature of the ARFP is that it will increase the demand for funds to be domiciled in Asia. This would offer increased job opportunities, not only to manage the funds but also to service the fund structure. It is estimated that for every one full-time employee working directly in the asset management industry for a locally domiciled fund, there are 4.6 jobs in the industry for servicing the fund structure.
- If the 2,200 funds that are currently under management in Hong Kong, China were all domestically domiciled, it would increase the number of employees in the industry to 22,000, from the current 4,000. Assuming each additional professional earning an average wage equals to the average labor productivity in Hong Kong, China, the creation of 18,000 new jobs would add USD 1.7 billion to the economy per year, an equivalent of 0.5 percent of GDP. In Asia, if the ARFP enhances the opportunities for the funds industry to produce more locally domiciled funds, 170,000 new jobs would be created over the next 5 years.

**Policymakers need to mitigate some risks in order to reap the full benefits of the ARFP**

- Adopting the AFRP can bring risks. These risks are inherent with any cross-border financing solution in which shocks in one market can be amplified and transmitted to other markets. The speed and scale with which illiquidity and losses seen in some markets could be translated to other markets is often greater with enhanced interconnectedness and efficiencies of the transmission and intermediation process.
- However, many economies in Asia can no longer afford inefficient financial markets that since the mid-2000s have resulted in persistently low investment rates in the region. The deepening integration of financial markets will not only help to promote financing of investment but would also mitigate the risks associated with large and volatile capital flows into the regions.
- Governments need to tune the pace of regional financial integration according to the development of their economies. As the benefits of the ARFP can only be optimized if the region possesses the requisite infrastructure and institutions, Asian economies need to work together to upgrade and harmonize regulations and market practices and develop mutually recognized regional standards.

- Regulation oversight may result in inadequate protection for investors. The Madoff investment scandal in 2008[3] – which caused significant losses to the European UCITS – is an example of how regulatory failure to keep up with the pace of the investment environment can have acute negative consequences.
- Regulators in Asia, however, can learn from the European experience. In advancing the ARFP, policymakers should strike the right balance between achieving market efficiency and investor protection. Emphasis should also be placed firmly on minimizing systemic vulnerabilities and maximizing market transparency. Furthermore, as many asset management firms and their products are complex and operate under multiple jurisdictions, there is an increasing impetus to put in place an institution that can coordinate the work of different regulatory agencies.

[3] Bernard L. Madoff was chairman of Bernard L. Madoff Investment Securities LLC. He was arrested in late 2008 and subsequently charged with 11 fraud counts related to the largest Ponzi scheme in US history. His entity "Bernard Madoff Investment Securities" was entrusted as a sub-custodian of some UCITS funds. Prior to the UCITS V proposal, the UCITS framework did not have a uniformed definition for the scope of a depositary's duties and the liability for the negligent performance thereof but made reference to the laws of different jurisdictions in respect of the precise contours of these duties. There were uncertainties surrounding the duties of the depositary in selecting and monitoring the performance of the sub-custodian. As a result, the extent to what a depositary was liable for losses at sub-custodian level was disputable.

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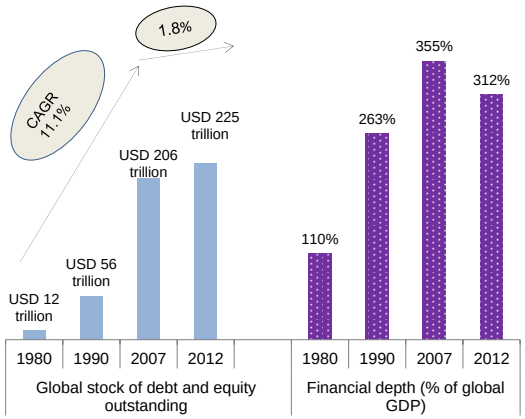
## CHAPTER 1: INTRODUCTION

Figure 1: Evolution of global financial assets




CAGR = compound annual growth rate; GDP = gross domestic product
Source: Boston Consulting Group, 2012

Since the 1980s, one of the most notable developments in the global economy has been the rapid growth of global financial assets Between 1980 and 2007, the value of the world's financial assets[4] rose by more than 17 times, from USD 12 trillion to USD 206 trillion (McKinsey Global Institute 2013). (Figure 1). However, the 2008–2009 global financial crisis dramatically brought a halt to this rapid expansion. Since 2007, world financial assets grew at an average annual rate of 1.8 percent reaching USD 225 trillion in 2012, a sharply slower growth rate than the 11.1 percent per annum growth achieved from 1980 to 2007. The share of financial assets to world's GDP also fell from its peak of 355 percent in 2007 to 312 percent in 2012. Cross-border capital flows were also affected, falling from USD 11.8 trillion in 2007 to USD 4.6 trillion in 2012, reversing the progress made following years of financial integration.

Some of the effects of a slowing growth momentum are welcome as they represent a healthy correction of bubbles in some asset markets. There is a risk, however, that the global economy could be negatively affected if the retrenched growth of the financial markets has an impact on financing for households and firms. In particular, large banks in developed economies may focus on domestic activities and curtail cross-border lending. In some emerging markets where banks have been the vital source of credit, slower cross-border bank lending impacts the overall economy, especially if households and the corporate sector have difficulty in securing finance for business investment, homeownership and investment in innovation and infrastructure. A lesser degree of global financial integration could also result in inefficient utilization of financial resources and exacerbate financial imbalances in the global economy. In economies with high savings rates, investors would face shortages of good investment opportunities and lower returns. Furthermore, growth would be constrained in markets where capital is in short supply.

There is no doubt that the 2008–2009 global financial crisis altered the global financial landscape and its contribution to global economic growth. Since 2008, policies have been developed to address deficiencies in financial regulations that were exposed during the crisis. In particular, the Basel Committee of Banking Supervision in 2010 introduced a new capital adequacy framework, known as Basel III, with an aim to increase the resilience of banks during periods of stress and address system-wide risks that can severely impact the financial sector. Economies have also strengthened macro-prudential supervisory capabilities.

[4] Measured as the sum of the value of equity market capitalization, corporate and government bonds, and loans.

Figure 2: The Asia Region Funds Passport aims to:


Source: APEC Policy Support Unit

The global financial crisis also created an urgent need to enhance the coordination of financial regulation across borders. It is vital now to build financial markets that are efficient in intermediating the demand and supply of credit across borders and at the same time are able to contain the dangers of cross-border capital flows. APEC policymakers have taken steps to address this issue. Among these is the ongoing work on developing an ARFP. The aim is to utilize the ARFP as a vehicle to support the further development and integration of capital markets as well as the efficient cross-border trading or "passporting" of funds across the APEC region (Figure 2).

Currently, the majority of Asian funds are assembled, distributed and administered within each jurisdiction, with limited transferability across borders. When implemented, the ARFP framework will allow operators of collective investment schemes (CIS) based in passport participating economies to offer their schemes to investors in other passport member economies, ideally without the need to meet different licensing requirements and avoiding investment restrictions in each economy. The AFRP will improve efficiency by minimizing the number of additional applications and/or requirements that have to be met in order to offer those funds across borders. Increased efficiency brought about by the ARFP will be critical for the funds management industry in Asia to develop and contribute further to the regional economy. Concurrently, the ARFP will help to safeguard the interests of investors through a common set of regulations agreed between all participating jurisdictions that will govern product issuers and products. The streamlining of regulations will be designed to provide a consistent level of protection for investors across participating jurisdictions.

The concept of the ARFP was initiated and introduced at the APEC Finance Ministers' Process by the Australian Treasury in 2010. Since then, APEC has held a series of capacity building workshops to help interested APEC economies to improve their technical skills in cross-border trading of financial products. At the same time, relevant stakeholders and interested APEC economies have been engaged in policy dialogues to identify the features of a funds passport scheme; identifying policy and technical challenges; and looking at the options to develop the concept. On 24 September 2013, finance ministers from Australia; Korea; New Zealand and Singapore signed a Statement of Intent noting progress on the ARFP.[5]

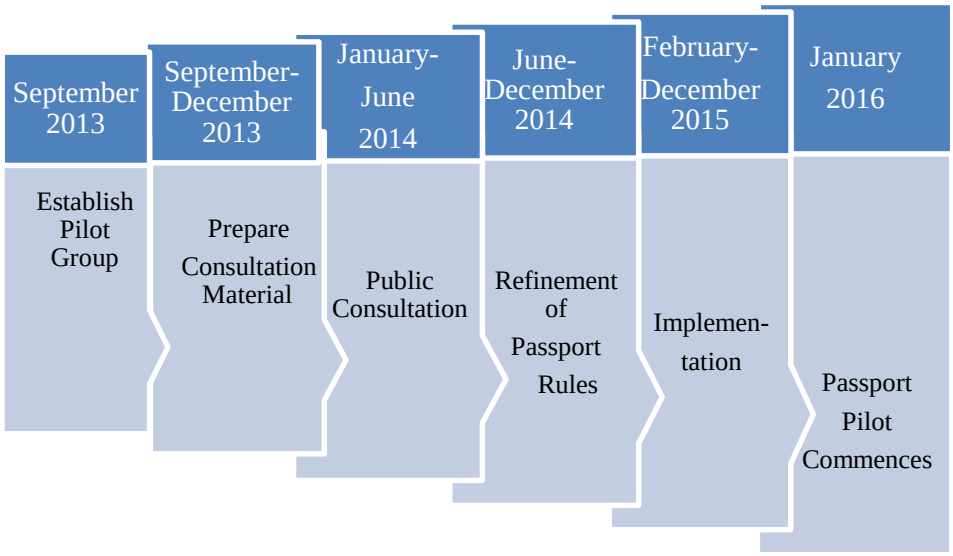
APEC is currently working toward establishing a pilot program of the ARFP (Figure 3) by 2016 with an "aspiration that the arrangements will be refined over time and expanded to become a wider, more inclusive regional Passport" (APEC 2013, p. 2). The decision to join

[5] Work on the ARFP commenced in late 2010. By 2013, financial regulators and officials from 13 APEC economies — Australia; China; Hong Kong, China; Indonesia; Japan; Korea; Malaysia; New Zealand; the Philippines; Singapore; Thailand, Chinese Taipei and Viet Nam — participated in ARFP related workshops.

the ARFP scheme is at the discretion of individual APEC economies. Membership to the ARFP is open to all APEC members in the Asian region who meet certain criteria,[6] including:

- being signatory to Appendix A of the International Organization of Securities Commissions (IOSCO) Multilateral Memorandum of Understanding Concerning Consultation and Cooperation and the Exchange of Information; and
- having been assessed by the International Monetary Fund and/or World Bank as part of a Financial Sector Assessment Program as having broadly implemented the relevant IOSCO principles on enforcement, cooperation and collective investment schemes.

Figure 3: Anticipated implementation timeframe for the pilot scheme on the Asia Region Funds Passport




Source: APEC, 2013

Studies have consistently noted that the ARFP will bring significant benefits for participating economies (PricewaterhouseCoopers 2010; First Degree Global Asset Management 2012; and State Street 2010). Many of these studies quote the European experience with the Undertakings for Collective Investments in Transferable Securities (UCITS) as an example showing the benefits that could be unlocked under the introduction of the ARFP. In particular, the UCITS has allowed investment funds once registered in a single member economy to be easily marketed across all other jurisdictions of the European Union, without lengthy authorization proceedings. Since its inception in 1985, the UCITS has evolved rapidly to cover a wide range of financial instruments covering financial indices, closed-end funds, fund of funds and hedge funds. Although this growing complexity has significantly increased the inherent risk, UCITS is still a strong and reputable brand name recognized throughout the world, accounting for over 36,000 funds with almost EUR 6,690 billion in assets, accounting for 70.2 percent of the total value of assets under management (AuM) in Europe. [7]

At the ARFP technical and policy workshop in Bangkok in June 2012, participants noted that none of the reports and studies to date has elaborated a business case as to why Asian economies need to be party to an Asian regionally-based funds passporting scheme.

[6] See APEC (2013, p. 8). for the full list of criteria.
[7] As of end September 2013.

Accordingly, the APEC Senior Financial Officials' Meeting tasked the APEC Policy Support Unit to undertake a study assessing quantitatively the potential economic benefits and costs deriving from the introduction of the proposed ARFP for Asia, under the assumption that the region has the requisite conditions to bring the proposed fund to full fruition.

The study is organized as follows:

- Chapter 2 provides an overall assessment of the current state of the mutual funds industry in Asia. Four economies – China; Indonesia; Korea and Chinese Taipei – were selected as case studies due to the fact that they are representative of the diversity of the Asian funds industry. All are at different states in the development of their financial markets and have different degrees of financial openness.
- Chapter 3 quantitatively and qualitatively assesses the benefits that can be accrued from the introduction of the ARFP into the region, under the assumption that individual participating members possess infrastructure and institutions that allow the benefits to be optimized. The focus of the assessment is on the potential gains from (i) improved efficiency; (ii) better fund performance due to greater diversification; and (iii) stronger and more sustainable economic growth.
- Chapter 4 discusses the risks associated with the introduction of the ARFP into the region.
- Chapter 5 evaluates the business case for introducing the ARFP by weighing the benefits against the risks. This chapter also suggests policy options that decision makers should take into consideration to optimize the benefits while minimizing the risks.
- Chapter 6 provides the conclusion.

## CHAPTER 2: THE CURRENT STATE OF THE MUTUAL FUNDS INDUSTRY IN ASIA

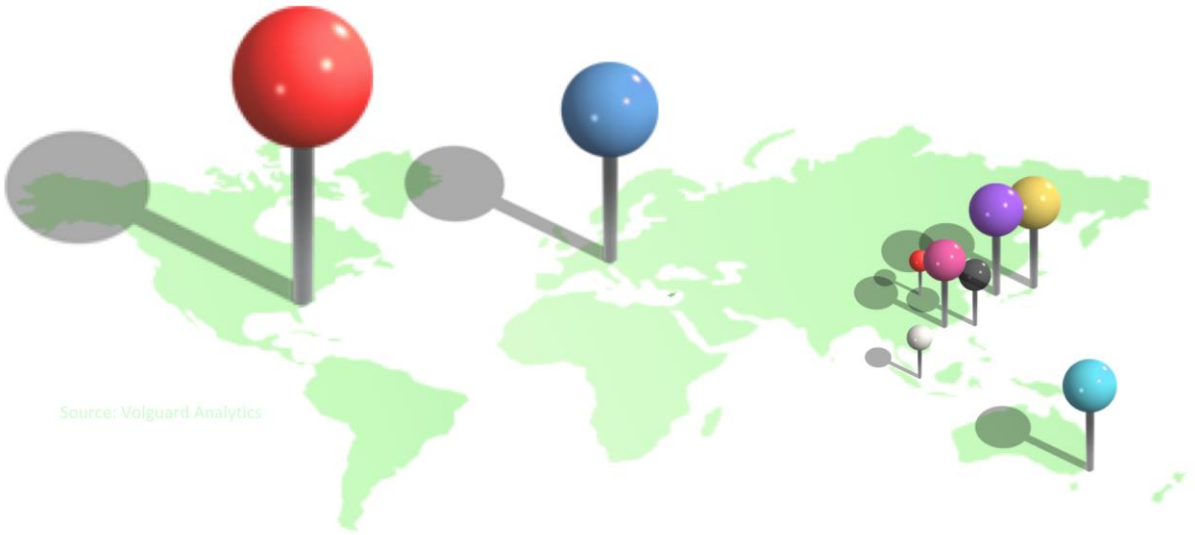
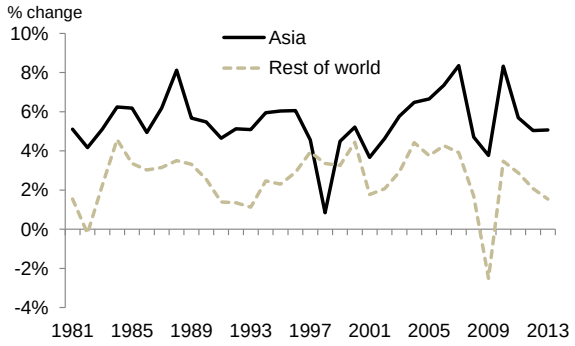
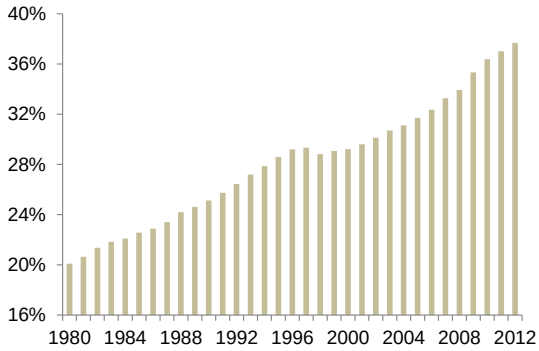



Figure 4: GDP growth: Asia versus the rest of the world




Source: International Monetary Fund and APEC Policy Support Unit calculations

Figure 5: Share of Asia GDP in total world output

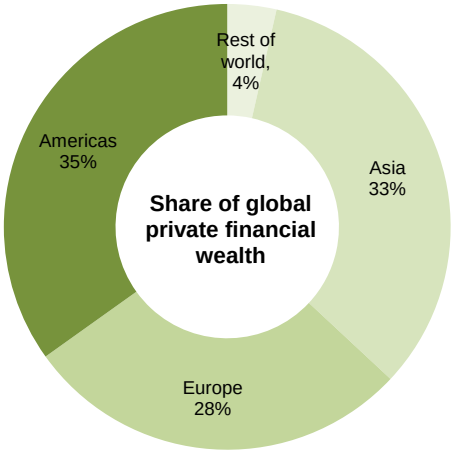



Source: International Monetary Fund and APEC Policy Support Unit calculations

Since the 1980s, Asia has achieved remarkable economic growth. From 1980 to 2013, Asia's gross domestic product (GDP)[8] grew at an annual average rate of 5.5 percent per annum, more than double the average growth rate of 2.6 percent per annum for the rest of the world (Figure 4). As a result, the Asian share of GDP to that of the world rose from 20 percent in 1980 to 38 percent in 2012 (Figure 5). The region's financial wealth has been riding on this strong economic development. In 2012, collective wealth in Asia stood at USD 45.2 trillion, slightly lower than the Americas, the world's wealthiest region. However, despite this impressive wealth, the funds industry in Asia has notably lagged both that of Europe and the Americas. Over the past decade, assets under management (AuM) in Asia registered notable slower rates than North America and Europe. By 2012, Asian markets overall represented only 16 percent of global AuM, despite accounting for 33 percent of global wealth (Figure 6 & Figure 7).

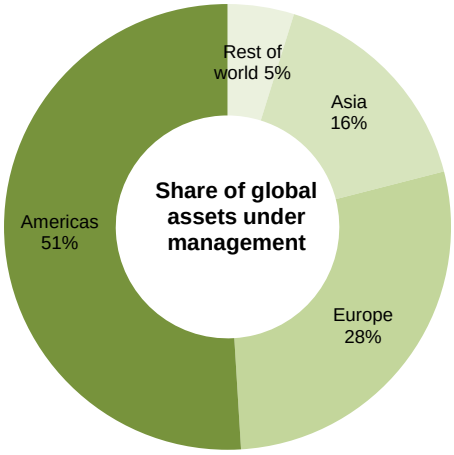
[8] Data calculated from the IMF's World Economic Outlook Database. The calculation of GDP was based on purchasing power parity, at constant 1980 prices.

Figure 6: Share of global private financial wealth, 2012




Source: Boston Consulting Group, 2013

Figure 7: Share of global assets under management, 2012




Source: Boston Consulting Group, 2013

Figure 8: Relative size of the funds industries in Asia 2012 *

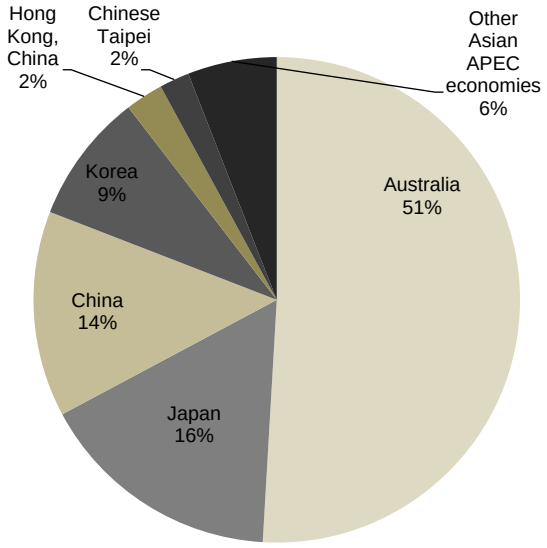
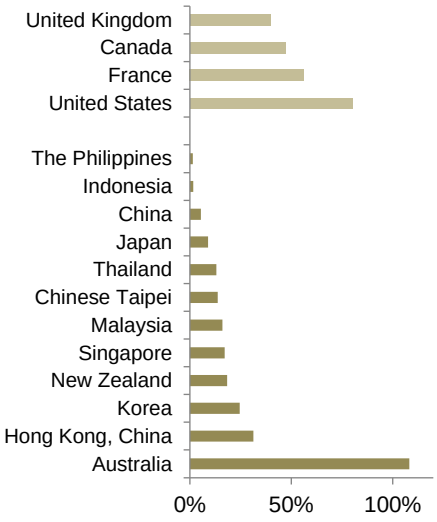



Figure 9: Assets under management to GDP ratio, 2012




Note: * Home-domiciled funds, except for New Zealand, which include home- and foreign-domiciled funds. Funds of funds are excluded. The focus of this study is on retail investment funds and refers to publicly offered, open-ended funds that invest in transferable securities and money market. They are equivalent to the Société d'Investissement à Capital Variable (SICAVs), unit trusts, mutual funds in the United States and UCITS. This has applied to the calculation of AuM for all economies. For Hong Kong, China and Singapore, Bloomberg Fund Screener was used to calculate the AuM of home-domiciled funds. For Singapore, the AuM includes insurance-linked products that are not regulated under collective investment schemes.

Sources: Investment Company Institute, Bloomberg, International Monetary Fund and Volguard Analytics as indicated in Annex C

The regional figures mask a wide divergence of the local funds industries across the Asia-Pacific (Figure 8 & Figure 9). In terms of net assets, the ratio of AuM to GDP is over 100 percent in Australia while it is less than 10 percent in China; Indonesia; Japan and the Philippines. In comparison, in some economies in the Americas and in Europe where funds management industries are well established, AuM to GDP ratios reach above 30 percent. The funds industry in Asia is relatively young in comparison with those in the United States and Europe. Expertise in funds management is in short supply in Asia where advisors are relatively less experienced compared to the United States (Table 1). Box 1 describes the mutual funds industries in four economies – China; Indonesia; Korea and Chinese Taipei. These economies were selected as case studies due to the fact that they are representative of the diversity of the Asia funds industry. These four economies are at different stages in the development of their financial markets and have different degrees of financial openness.

Table 1: Competence of financial advisors in Asia compared to the United States

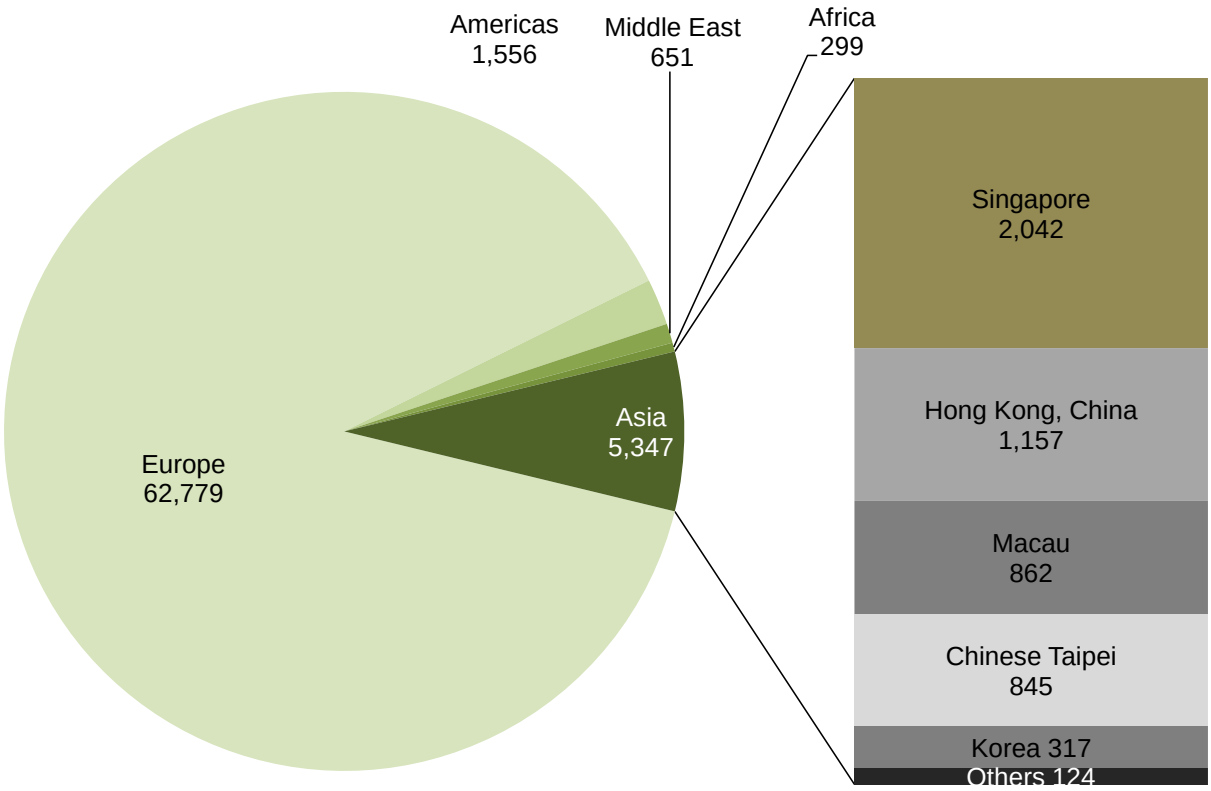
| | Asia (excluding Japan) | United States |
|---|---|---|
| Proportion of funds advisers over 40 years-old | 40% | 85% |
| Average years of experience | 9.3 years | 23.8 years |
| Average tenure at current firm | Less than 6 years | 20 years |

Source: Capgemini/Merrill Lynch, 2010

Some markets in Asia are more open to offshore funds than others. In Hong Kong, China; Singapore and Chinese Taipei for example, investors are able to invest in offshore cross-border funds, subject to authorization by local regulators. Governments in these economies in recent years have also offered incentives to boost the development of the funds management industry. For example, Singapore has an offshore funds regime that has tax benefits for offshore funds managed by a Singapore-based fund manager, provided the fund is a qualifying fund. Similarly, Hong Kong, China introduced an offshore funds tax exemption scheme in 2006.

Investors in Hong Kong, China; Chinese Taipei and Singapore are significant buyers of Europe's UCITS. As of July 2012, there were 5,347 UCITS fund registrations in Asia, making the region the largest market for UCITS outside Europe (Figure 10). The high number of UCITS in some Asian funds markets is an indication of the increasing appetite of Asian investors for offshore funds products in their attempt to diversify portfolios. It is important to note that it can take a long time for regulators to approve offshore funds in these markets. In Hong Kong, China the process can take about 6 months whereas it takes about 3 months in Chinese Taipei and 30 to 45 days in Singapore. However, funds from Asia have been disproportionally disadvantaged from benefiting from the region's growing demand. In 2011, Asian funds accounted for USD 400 billion of cross-border funds traded in Asia. This is less than the USD 500 billion of UCITS products being traded in Hong Kong China; Singapore and Chinese Taipei. In comparison, UCITS funds account for 75 percent of the EUR 7,500 billion European funds market (PricewaterhouseCoopers 2012).

Figure 10: Global distribution of UCITS, July 2012




Source: PricewaterhouseCoopers, 2012

## BOX 1: LOCAL FUNDS STRUCTURE – CASE STUDIES ON CHINA; INDONESIA; KOREA AND CHINESE TAIPEI

### China

Figure 11: China – Fund size

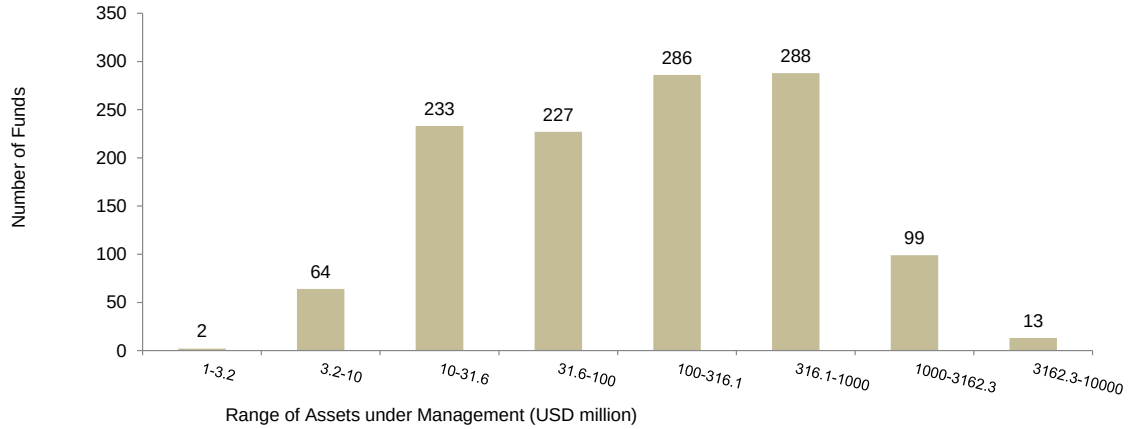



Figure 12: China – Total assets under management by asset class focus, 2012

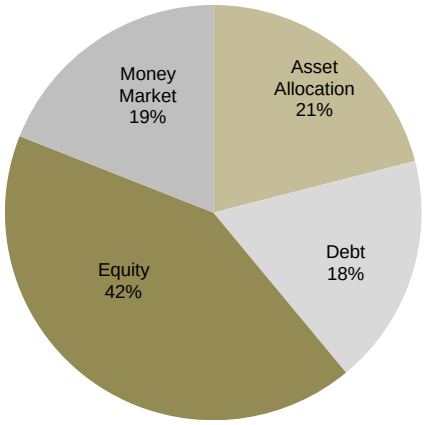



Figure 13: China – Number of funds by asset class focus, 2012

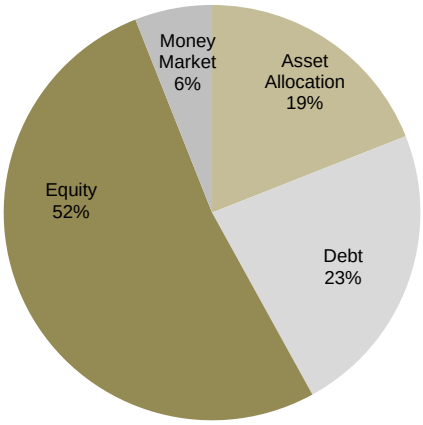



Figure 14: China – Fund choice by geographic focus, 2012

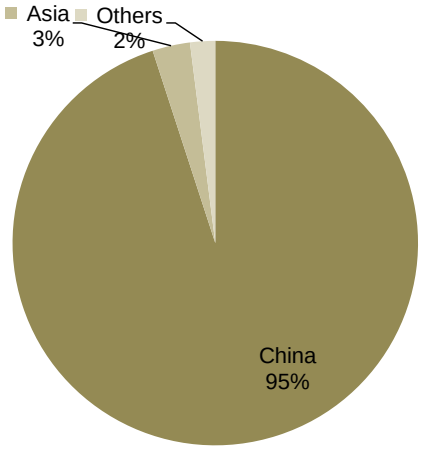
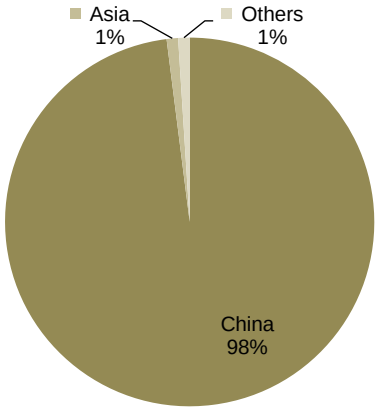



Figure 15: China – Available funds by domicile, 2012




Sources: Bloomberg and Volguard Analytics as indicated in Annex C

The mutual funds industry in China emerged in the early 1990s after the government established two closed-end funds with total assets of CNY 90 million. Since then, the funds management industry has experienced notable growth. By 2012, there were 71 funds management companies, with an estimated USD 448.8 billion worth of assets under management. In absolute size, China's funds industry is the third largest in Asia, after Australia and Japan. The large number of funds in China's mutual funds industry has allowed for the funds' size to be substantial. As of 2012, 85 percent of total funds in China were in the range of USD 10 million to USD 1,000 million (Figure 11).

Despite being large in absolute terms, mutual funds remain a small part of the Chinese economy, representing only 5 percent of GDP. Offshore investors have limited access to the Chinese market. Overseas asset managers, banks and institutional investors can invest in onshore equity or bond markets by applying for a quota[9] to buy CNY through the Qualified Foreign Institutional Investor (QFII) scheme. Among different mutual funds products, equity funds are the most popular in China. In 2012, these funds represented 52 percent of the total number of funds and accounted for 42 percent of total AuM (Figure 12 & Figure 13). Money market funds, although accounting for only 9 percent of the total number of funds, represent 19 percent of total mutual funds' net assets. This implies that money market funds tend to be of larger size than equity and debt funds. Nearly 95 percent of fund choices in China are concentrated in the local market (Figure 14 & Figure 15). Inevitably, the lack of diversification can render the funds industry vulnerable to a capped upside as well as concentration risks.

**Indonesia**

The funds industry in Indonesia was launched in the mid-1990s but has faced two major disruptions. The first one was caused by the Asian financial crisis that affected the Indonesian economy in late 1997. The industry was reorganized in the early 2000s, reporting rapid growth from 2001 to 2004. During that period, most of the funds' assets were invested in rupiah-denominated government securities, principally recapitalization bonds. In late 2004, the Indonesian economy was affected by high international oil and import prices. The inflation rate reached over 18 percent in November 2005, triggering a sharp rise in interest rates. The values of fixed-income funds fell in tandem with the surge in interest rates, leading investors to panic. The funds market in Indonesia has bounced back in recent years, riding on a wave of improved economic stability and growth. An "all your eggs in the bond basket" strategy has given way to a more balanced product choice consisting of debt, equity, money market and asset allocation. Debt funds as of 2012 accounted for 39 percent of the total number of mutual funds but only 26 percent of the total fund asset value (Figure 16 & Figure 17). Equity investment had the highest net asset value, totaling 54 percent of total investment fund assets in 2012.

Despite recent rapid growth, Indonesia's mutual funds industry is small compared to regional and global markets. In 2012, its net assets amounted to USD 15 billion, or 2 percent of Indonesia's GDP. One of the contributing factors to this relatively underdeveloped fund market is the absence of market infrastructure. Banks still heavily dominate the financial system. Yet, a large proportion of the Indonesian population does not hold a bank account, let alone have the capacity to invest in long-term mutual funds. In addition, Indonesia does

[9] As of end 2013, the quota for QFII stood at USD 150 billion.

not allow for full distribution of offshore funds. The limited access to alternative investment options leads to a high concentration risk: 96 percent of funds in 2012 were locally domiciled and 93 percent are locally focused (Figure 18 & Figure 19). Among the few offshore products available, European-focused options were the most popular. Although the Indonesian funds industry is not fragmented, fund size is skewed towards the smaller end of the scale. As of 2012, 50 percent of the total number of funds was smaller than USD 10 million in value, making it hard for the industry to realize economies of scale (Figure 20).

Figure 16: Indonesia – Total assets under management by asset class, 2012

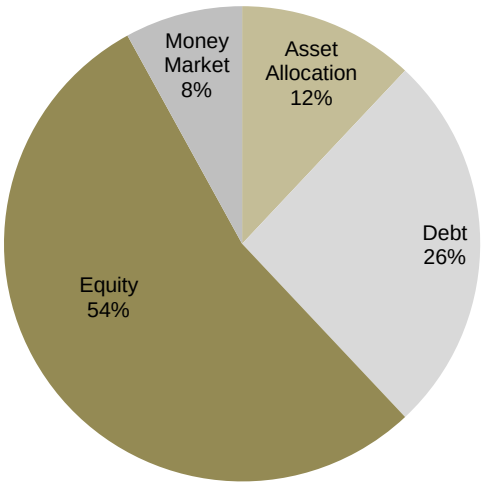
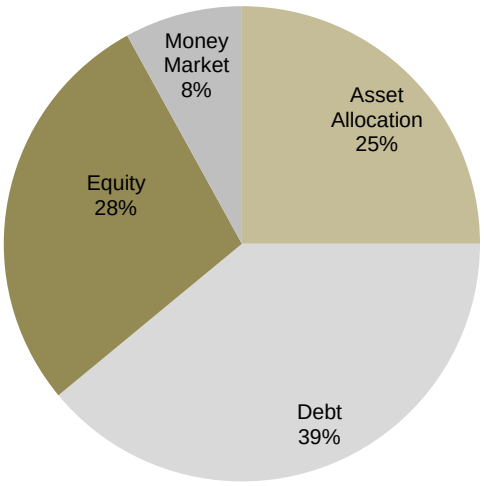



Figure 17: Indonesia – Number of funds by asset class focus, 2012




Sources: Bloomberg and Volguard Analytics as indicated in Annex C

Figure 18: Indonesia – Fund choice by geographic focus, 2012

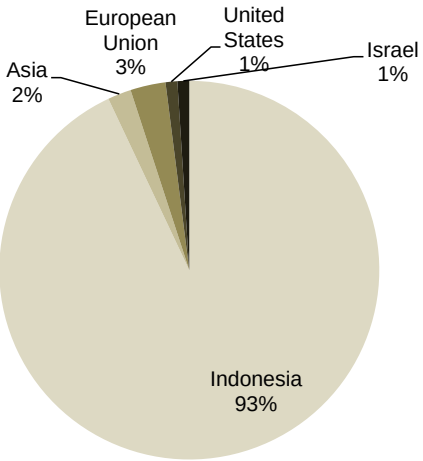
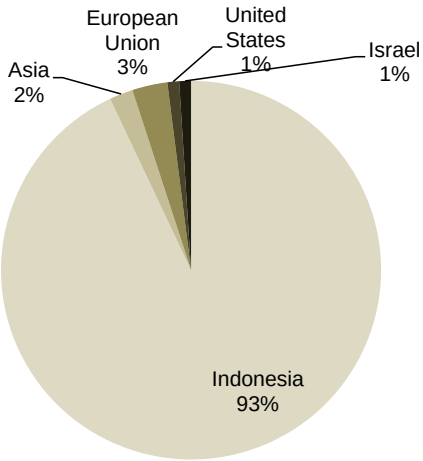
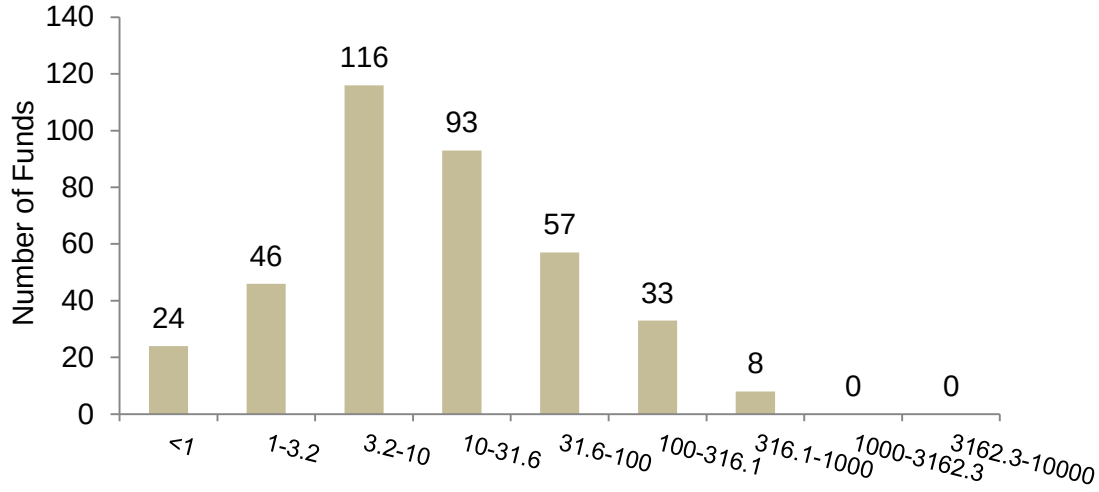



Figure 19: Indonesia – Number of funds by domicile, 2012




Sources: Bloomberg and Volguard Analytics as indicated in Annex C

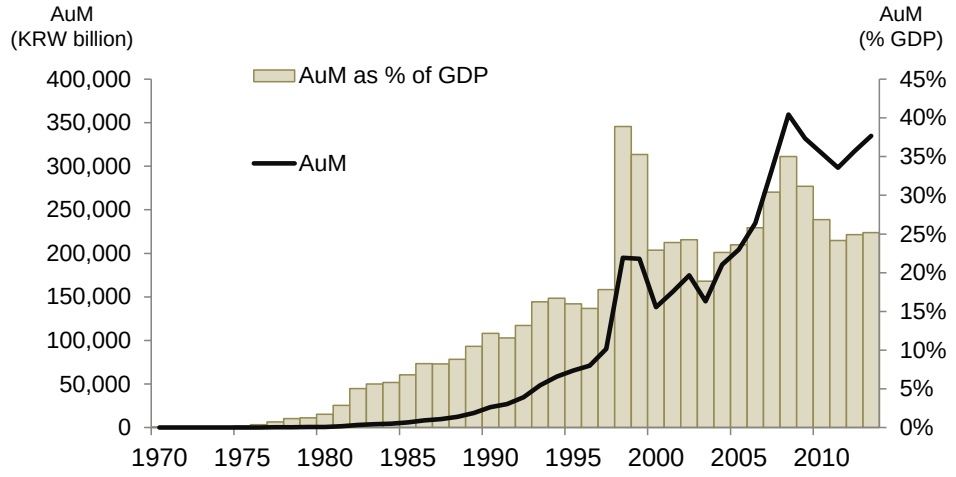
Figure 20: Indonesia – Fund size, 2012




Sources: Bloomberg and Volguard Analytics as indicated in Annex C

**Korea**

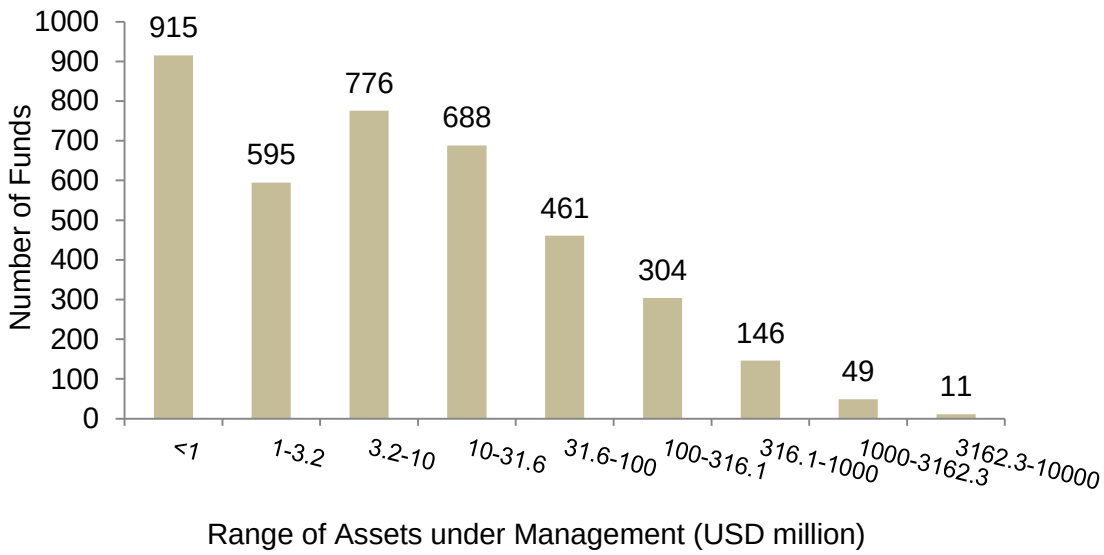
Figure 21: Korea – Assets under management




AuM = assets under management; GDP = gross domestic product; KRW = Korea won
Source: Korea Financial Investment Association

Korea has a mature mutual funds industry. The first contractual-type equity investment scheme was introduced in 1970, after the promulgation of the Securities Investment Trust Business Act in 1969. The development of the funds industry experienced a setback during the Asian financial crisis in the late 1990s. However, it has since quickly recovered. The value of total AuM has almost tripled, from USD 110 billion in 2000 to USD 284 billion by 2012, making it the fourth largest funds market in Asia. In 2012, Korea hosted over 10,000 funds (Figure 21).

Figure 22: Korea– Fund size




Sources: Bloomberg and Volguard Analytics as indicated in Annex C

Figure 23: Korea – Total assets under management by asset class focus, 2012

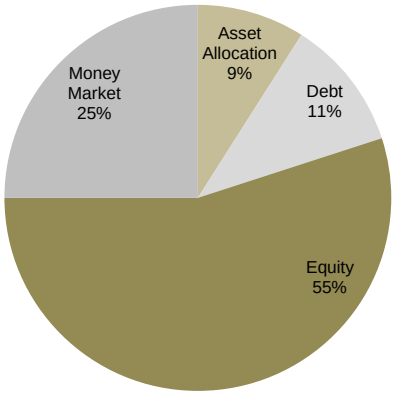



Figure 24: Korea – Total number of funds by asset class focus, 2012

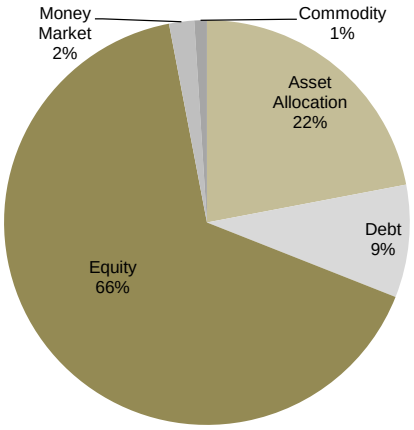



Figure 25: Korea – Number of funds by domicile, 2012

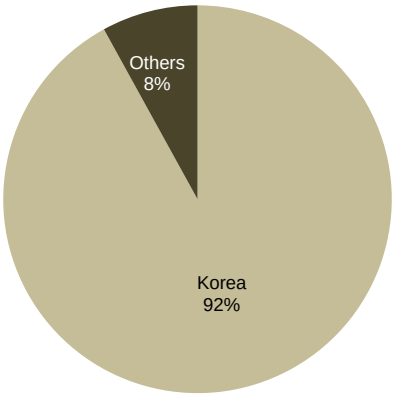
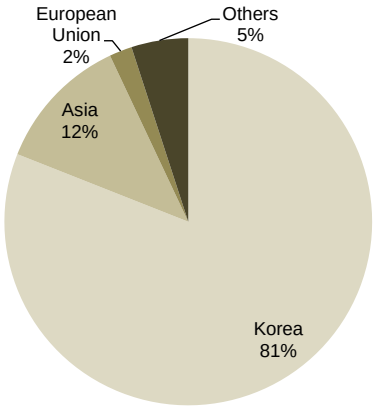



Figure 26: Korea – Fund choice by geographic focus, 2012



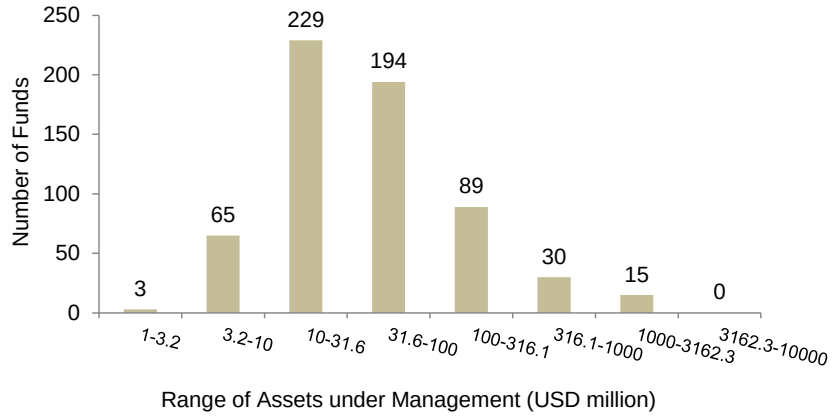

Sources: Bloomberg and Volguard Analytics as indicated in Annex C

Despite its success, the funds industry in Korea is fragmented. Almost 60 percent of funds in 2012 had AuM of less than USD 10 million (Figure 22). Furthermore, the local funds market is markedly skewed towards equity that dominated 66 percent of the total number of funds, accounting for 55 percent of the total funds' AuM (Figure 23 & Figure 24). The dominance of equity funds in Korea can be attributed to the dollar cost averaging investment that has gained popularity since 2004 due to active promotion and advertisement campaigns.

While regulators in Korea have been keen to pursue a path of a liberalization of the market, the industry is still facing challenges. The sale of offshore funds is facing tight regulatory hurdles, including preferential tax treatment for onshore versus offshore funds. As a result, the presence of foreign funds in Korea has been weak with European funds representing the majority. In 2012, domestic funds captured 92 percent of the total number of funds in Korea (Figure 25 & Figure 26).

**Chinese Taipei**

Figure 27: Chinese Taipei – Fund size, 2012




Sources: Bloomberg and Volguard Analytics as indicated in Annex C

The first open-ended mutual fund in Chinese Taipei was launched in early 1986 but development of the industry only picked up pace from 1993 onwards. In recent years, there has been a trend among private investors to move away from cash deposits and direct bond holdings towards direct equity holdings, pensions and mutual funds. Funds development was also aided by favorable regulations that were established to widen the scope for new products. In 2006, when the government introduced a regime that allowed local distributors to promote and distribute foreign funds in the domestic market (called Master Agent regime), sales climbed rapidly.

In 2012, the mutual funds industry in Chinese Taipei amounted to USD 65 billion worth of assets. The majority of these funds were in the middle range of USD 10 million to USD 1,000 million (Figure 27). In terms of product choices, the industry possesses a healthy and balanced mix of equity, debt and money market funds (Figure 28 & Figure 29). The funds market is also well diversified in terms of the mixture of onshore and offshore products. European UCITS is among the offshore products that are widely recognized by the Securities Investment Trust and Consulting Association. In 2012, European-domiciled funds held 56 percent of the total of funds in Chinese Taipei (Figure 30 & Figure 31). Domestic funds occupied 40 percent of the total number of funds while the rest of Asia accounted for 3 percent.

Figure 28: Chinese Taipei – Total assets under management by asset class focus, 2012

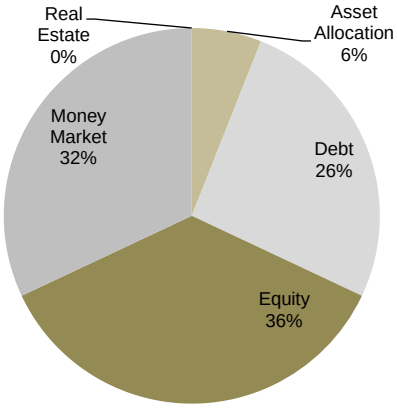



Figure 29: Chinese Taipei – Total number of funds by asset class focus, 2012

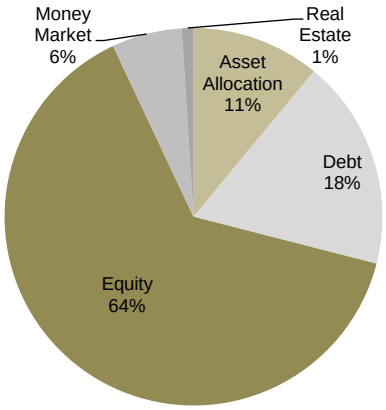



Figure 30: Chinese Taipei – Number of funds by domicile, 2012

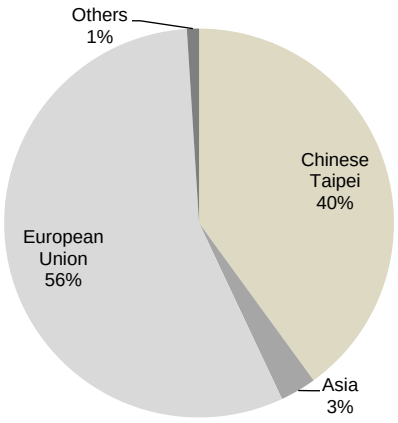
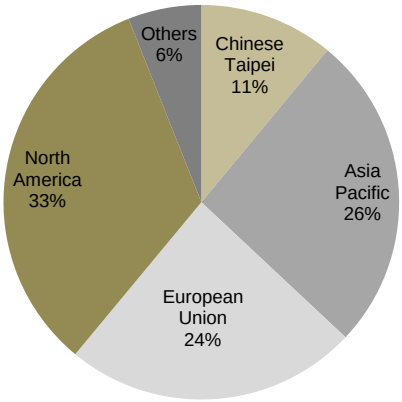



Figure 31: Chinese Taipei – Fund choice by geographic focus, 2012




Sources: Bloomberg and Volguard Analytics as indicated in Annex C

## CHAPTER 3: ASSESSING THE POTENTIAL ECONOMIC BENEFITS OF THE ASIA REGION FUNDS PASSPORT

At the heart of the ARFP is the concept of cross-border distribution and operations of collective investment schemes. Ideally, it will allow funds managers to market approved products throughout the Asian region, on the basis of a single authorization from one of the passporting members. At the same time, the ARFP is designed to provide better protection for the investor. A successful ARFP will result in a more efficient and less costly funds sector in the Asia region. Investors will benefit from greater efficiency gains at less risk. It will also promote the development of the funds industry and contribute toward further integration of the regional economy.

This chapter assesses the current organizational structure of the funds industry in Asia in order to evaluate the potential benefits, under the assumption that an individual participating economy has the requisite conditions to bring the ARFP to full fruition. In particular, the chapter quantitatively examines the following benefits:

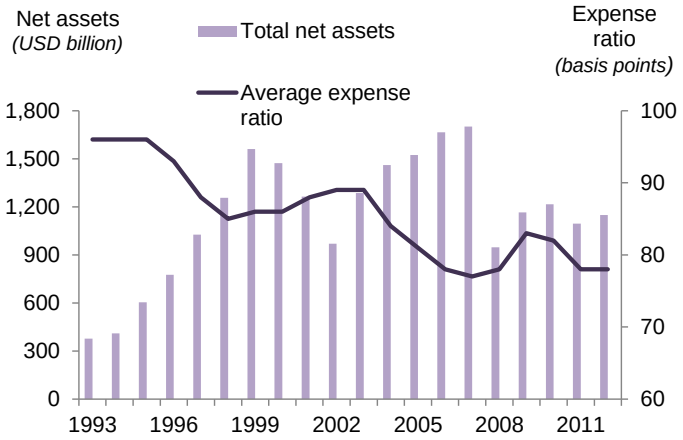
1. Improved efficiency through the creation of common administration and a single pool of assets under management for each investment strategy;
2. Better fund performance as investors will have greater access to cross-border products to diversify their portfolios; and
3. A deeper and more effective financial market that is critical for the capital formation of the economy and add value to the regional economy.

### *I. ASIA REGION FUNDS PASSPORT: A PATH TO IMPROVE EFFICIENCY IN THE FUNDS INDUSTRIES*

#### A. ECONOMIES OF SCALE IN THE ASIAN FUNDS INDUSTRIES: THE CURRENT STATE

In mutual funds, investors incur expenses that cover brokerage commissions, research and marketing costs as well as other ongoing management and administrative fees. Most of these expenses are reflected in a fund's total expense ratio (TER) that is expressed as a percentage of a fund's assets. Some of the components of TER – such as transfer agency fees, accounting and audit fees and brokerage commissions – are fixed regardless of fund size. The existence of these fixed costs implies that there are potentially economies of scale in managing a mutual fund. In particular, when a fund grows larger in size, these fixed costs become smaller relative to a fund's assets. In other words, the TER should be lower as a fund size grows sufficiently large.

Figure 32: Fund expense ratios in the United States tend to fall as fund size rises




Source: Investment Company Factbook

This inverse relationship between TER and fund size is empirically established for the mutual funds industry in the United States (Figure 32). Latzko (2012) used a longitudinal data set on 2,610 funds in the United States and found that the elasticity of the change in fund costs with respect to the change in assets was less than one, implying the existence of scale economies for the average mutual fund. Khorana, Servaes and Tufano (2008) looked at the fees charged across Australia; Canada; Japan and 14 European markets. Their analysis indicated that equity funds offered for sale in the United States had the lowest value-weighted management fees while Canada's fees were three times higher. The difference in fees was explained in part by the fact that the fund size in the United States was generally of larger scale. Other factors also contributed to the difference, the most important of which was that fees were lower in markets with stronger investor protections.

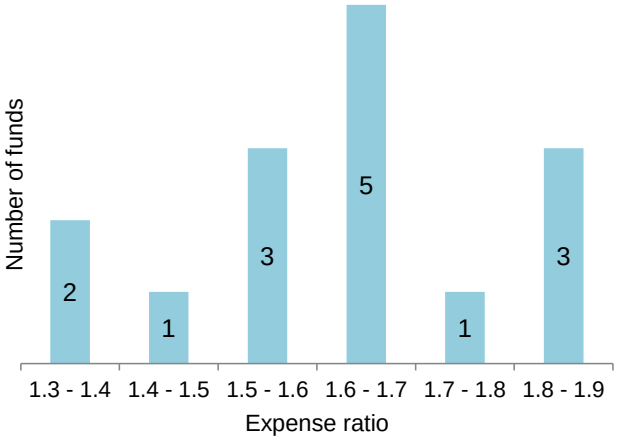
In Box 2, the relationship between TER and fund size is explored for some Asian markets to determine whether existing structures enable the funds industry to realize economies of scale. Initial findings suggest that in Indonesia and Korea, TER and fund size do not exhibit the inverse relationship. In contrast, there is evidence of economies of scale in Chinese Taipei where the TER declines as the fund size gets larger. The divergence in the experience of Indonesia, Korea and Chinese Taipei supports the proposition that the more open the market, the healthier the competition and hence the better the transfer of economies of scale.

In the case of China, TER appears to be lower for equity funds of a larger size. However, as the analysis for China was performed with a limited data set, it is not possible to generalize this relationship to the whole industry. In addition, it appears that limited access to offshore funds has resulted in investors trading out of their existing portfolio and investing in a wider range of new products in their attempt to diversify investment. Correspondingly, there has been an emergence of numerous smaller funds, a phenomenon that has the effect of fragmenting the funds industry.

## BOX 2: ANALYSIS OF FUND SIZE AND TOTAL EXPENSE RATIO IN SELECTED ASIAN FUNDS INDUSTRIES

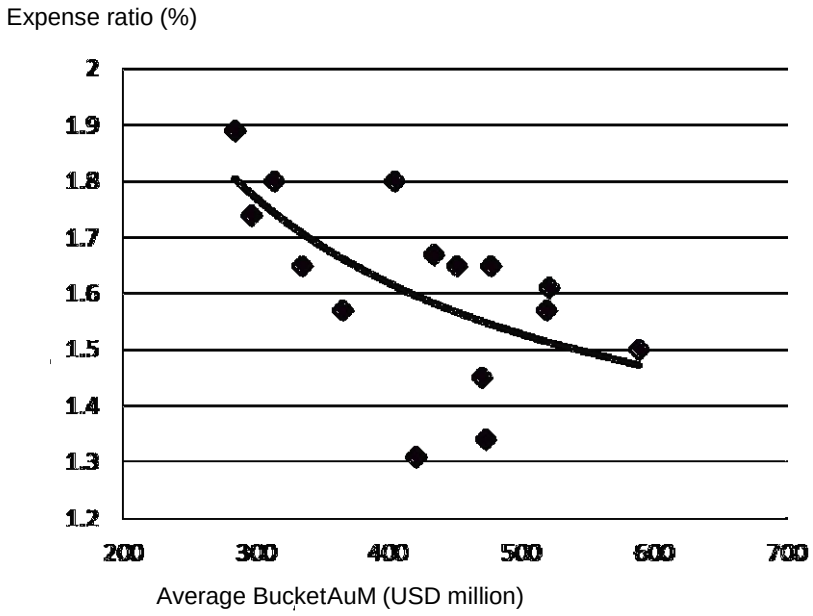
### China

Figure 33: Expense ratio in China, 2012




Sources: Bloomberg and Volguard Analytics as indicated in Annex C

Figure 34: Expense ratio for equity funds in China in 2012




AuM = assets under management
Sources: Bloomberg and Volguard Analytics as indicated in Annex C

Due to limited publicly available information, the analysis of economies of scale for China is limited to the 15 equity funds domiciled in China. Most of these funds have a TER less than 1.7 percent (Figure 33). It appears that economies of scale are present in China with larger equity funds having lower expense ratios (Figure 34). However, due to the limited data set, it is not possible to generalize this conclusion to all funds domiciled in China. In addition, there is an emerging trend that investors are opting to diversify their holdings by trading out of their current portfolio and spreading investment across a wider range of options. This is reflected partly in a significant increase in the number of funds in recent years, outpacing the growth in the total assets under management. Correspondingly, average fund size in China

has declined. If the trend of smaller fund size continues, it is hard for the funds industry in China to retain economies of scale.

## Indonesia

Figure 35: Expense ratio for equity funds in Indonesia, 2012

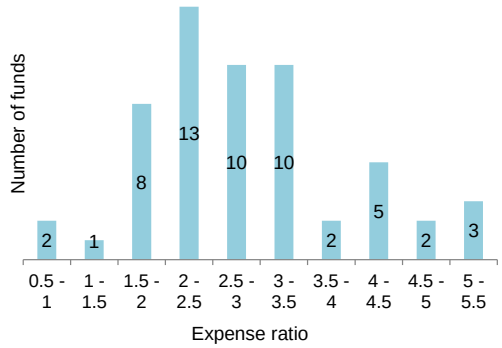



Figure 36: Expense ratio for debt funds in Indonesia, 2012

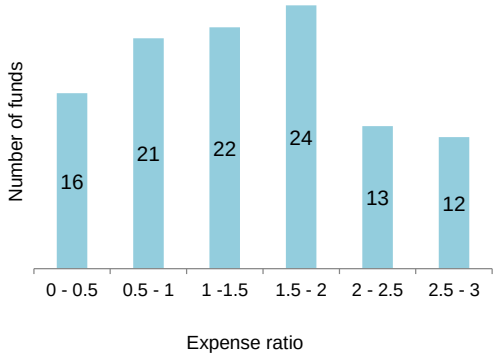



Figure 37: Expense ratio for money market funds in Indonesia, 2012

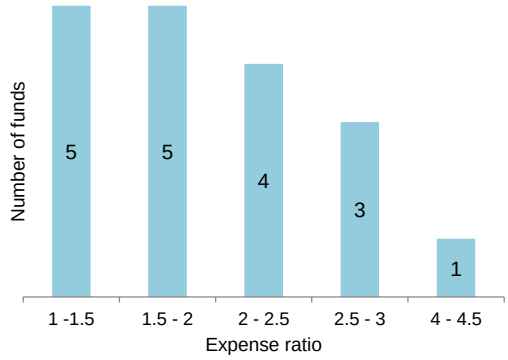
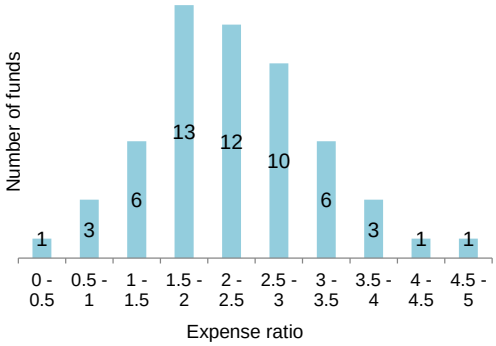
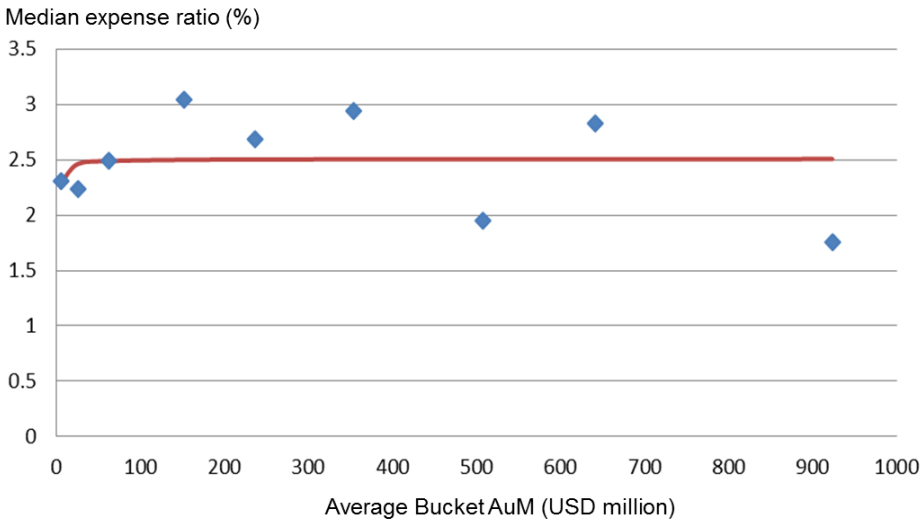



Figure 38: Expense ratio for asset allocation funds in Indonesia, 2012




Sources: Bloomberg and Volguard Analytics as indicated in Annex C

Figure 39: Relationship between equity funds size and expense ratio in Indonesia, 2012




AuM = assets under management
Sources: Bloomberg and Volguard Analytics as indicated in Annex C

The small size and the lack of depth in Indonesia's funds industry have implications for operating expenses and fund performance. The histogram of the TER for all funds in Indonesia shows a wide spread of expense ratio with most funds charging anywhere between 0 and 5.5 percent (Figure 35 to Figure 38). Equity funds generally charge between 1.5 percent and 3.5 percent while debt funds charge between 0 and 2 percent. Asset allocation funds are among the costliest funds. On aggregate, Indonesia's asset weighted expense ratios are high, at 2.16 percent. This compares unfavorably with the expense ratio of the few European funds available locally (0.9 percent). Due to the small size of the Indonesian funds industry, scale benefits are not expected. As shown in Figure 39, total expense ratio for equity funds in Indonesia is independent of fund size.

**Korea**

Figure 40: Expense ratio for local funds in Korea, 2012

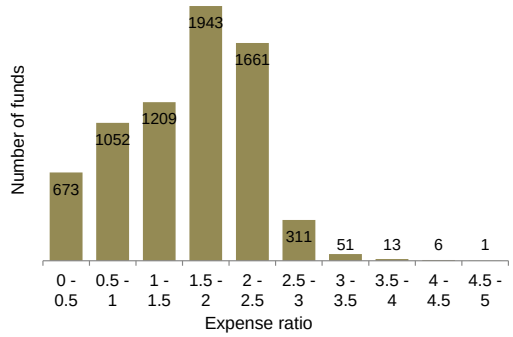



Figure 41: Expense ratio for local debt funds in Korea, 2012

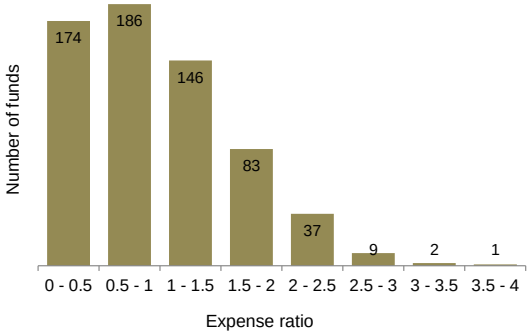



Figure 42: Expense ratio for local equity funds in Korea, 2012

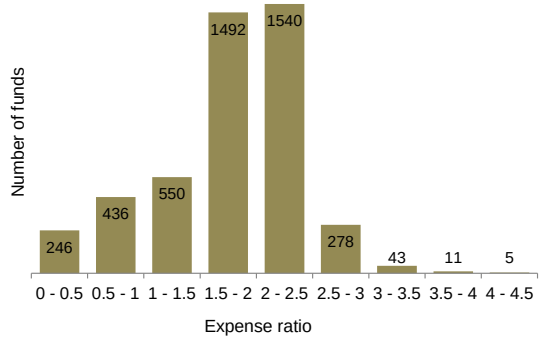
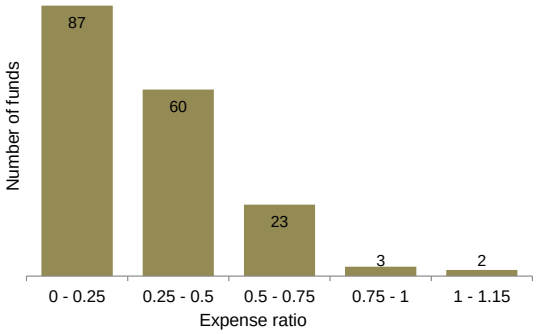



Figure 43: Expense ratio for local money market funds in Korea, 2012



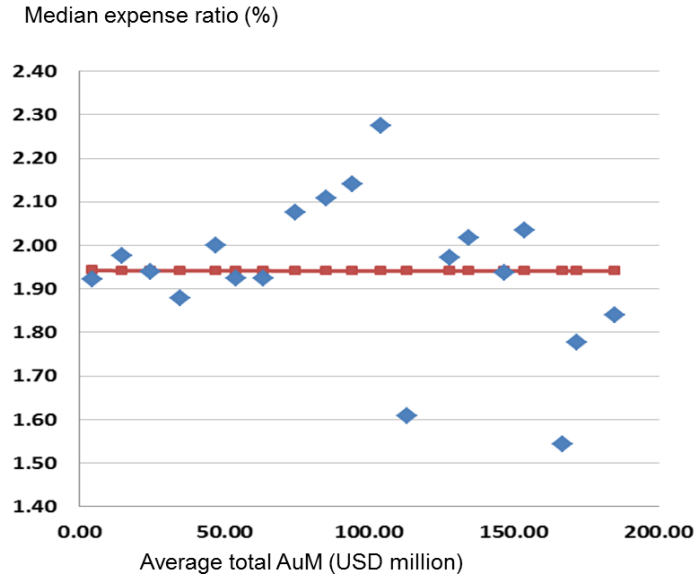

Sources: Bloomberg and Volguard Analytics as indicated in Annex C

In Korea, the expense ratio for the majority of equity funds ranges between 1.5 percent and 2.5 percent, while it is below 1 percent for debt funds and less than 50 basis points for money market funds (Figure 40 to Figure 43). Using only equity funds in the analysis of the economies of scale, there is an absence of any conclusive relationship between expense ratio and the size of funds (Figure 44). This can be due to the fact that the Korean funds industry is fragmented and fund size is skewed heavily towards the smaller range. The average fund size in Korea is less than USD 35 million. In comparison, the average fund size in China is over USD 400 million while it is over USD 100 million in Chinese Taipei. The smaller fund size has prevented the industry from achieving economies of scale.

In addition, regulation may have the effect of distorting incentives for fund managers to transfer the benefits of economies of scale to end investors. For example, regulations that are

aimed to protect the development of local funds have inadvertently weakened competition at the cost of investors. Consequently, fund managers often charge a higher expense ratio for offshore funds than local funds.

Figure 44: Relationship between equity funds size and expense ratio in Korea, 2012




AuM = assets under management
Sources: Bloomberg and Volguard Analytics as indicated in Annex C

## Chinese Taipei

Figure 45: Expense ratio for equity funds in Chinese Taipei, 2012

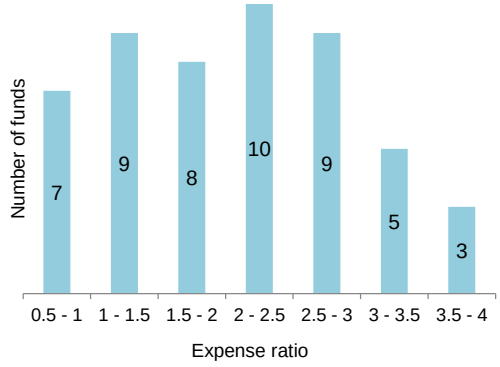
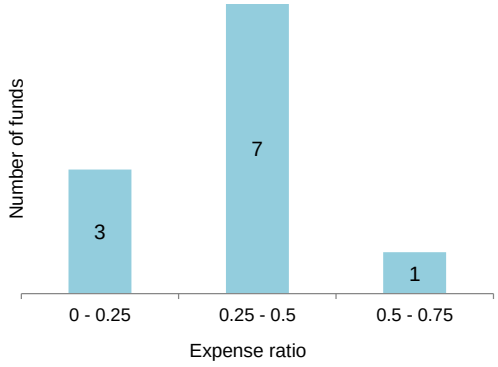



Figure 46: Expense ratio for money market funds in Chinese Taipei, 2012




Sources: Bloomberg and Volguard Analytics as indicated in Annex C

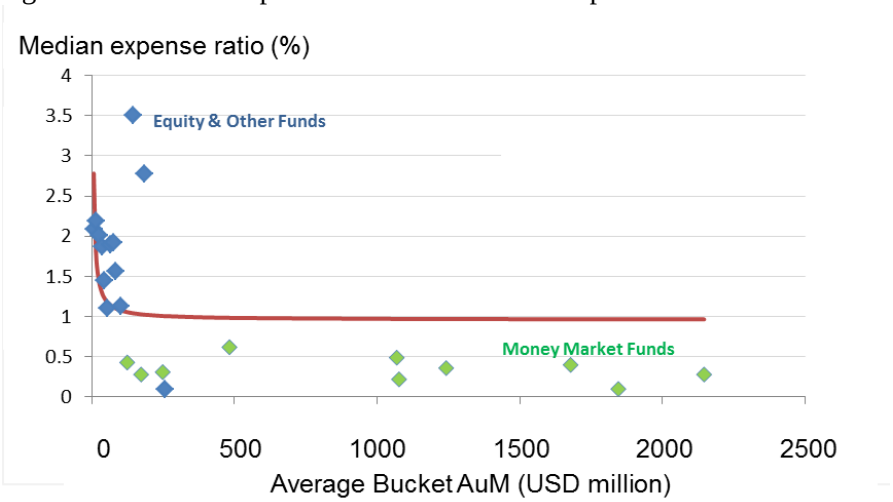
Funds in Chinese Taipei are evenly distributed in different ranges of expense ratios between 0 percent and 3 percent (with a few of them charging between 3 percent and 4 percent) (Figure 45 & Figure 46).[10] Debt and money market funds tend to have lower TER than equity and asset allocation funds. This aligns with international market trends and is also an extension of the comparatively significant sizes of debt and money market funds.

Previous studies (for example, Wange and Venezia 2012) on Chinese Taipei's funds market suggested that the industry's openness to competition places a higher competitive pressure on

[10] After excluding exchange-traded funds and funds of funds, there are 71 funds remaining that have disclosed TER.

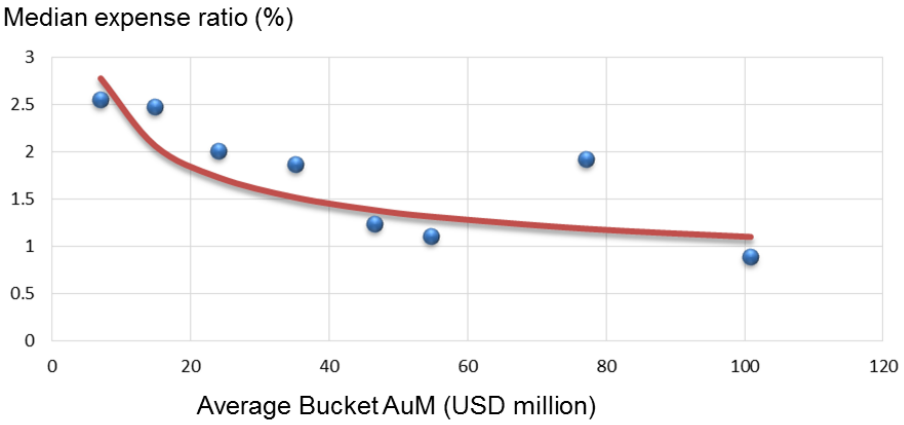
fund managers and therefore benefits performance of mutual funds. The high competitive environment in Chinese Taipei has kept mutual funds at a moderate and efficient scale that is sufficient to achieve economies of scale but at the same time not too large to erode fund performance. This is consistent with our analysis of economies of scale in Chinese Taipei in which there exists an inverse relationship between expense ratio and fund size (Figure 47 & Figure 48).

Figure 47: Relationship between funds size and expense ratio for all funds in Chinese Taipei, 2012




Sources: Bloomberg and Volguard Analytics as indicated in Annex C

Figure 48: Relationship between funds size and expense ratio for equity funds in Chinese Taipei, 2012



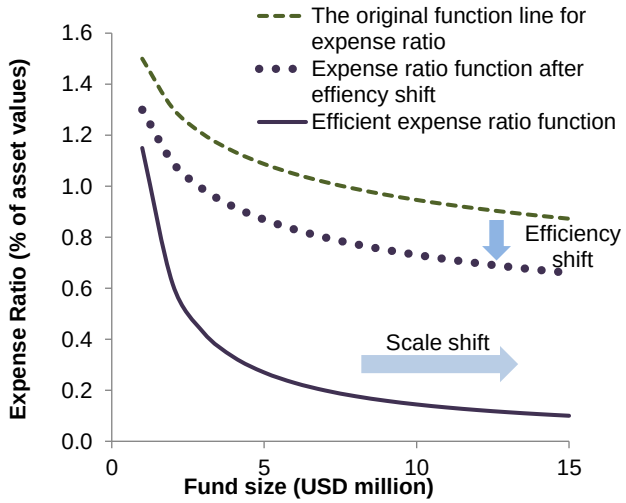

AuM = assets under management
Sources: Bloomberg and Volguard Analytics as indicated in Annex C

## B. BENEFITS OF ECONOMIES OF SCALE IN ASIAN FUNDS INDUSTRY UPON THE IMPLEMENTION OF THE ASIA REGION FUNDS PASSPORT

Once the ARFP has been established, funds managers in a participating economy will be able to offer a single fund across multiple markets. It is expected that the resulting larger client base will grow the fund size sufficiently to realize economies of scale. At the same time, increased competition, an increased number of funds and increased number of funds under management will help to keep the fund size at an optimal level so as not to erode fund performance. Investors will also benefit from improved efficiency as direct access to offshore funds results in the elimination of an extra layer of fees and commissions charged by local operators.

Figure 49 illustrates how having access to multiple fund markets can enhance efficiency in two channels. In the first channel, (labeled in Figure 49 as efficiency shift), some fixed costs in managing funds can be lowered with the introduction of factors such as shared expertise and streamlined operations, regardless of fund size. Increased competition also provides incentives for fund managers to reduce the fees charged to their clients. In the second channel, some administrative costs to manage funds can be lowered as fund size rises (labeled in Figure 49 as the scale shift). An example is the cost of maintaining shareholder accounts, which are often the same for all shareholders, regardless of the value of the account. If a mutual fund has USD 1 million in assets that is pooled together from 1000 investors, the fund manager charges an investor USD 50 per annum to maintain the account, which is an equivalent to 5.0 percent of total fund assets. However, if total assets from these 1000 investors are increased to USD 5 million, then the USD 50 per annum charge to maintain the account represents only 1.0 percent of total fund assets. Thus, the expense ratio to maintaining the fund decreases from 5 percent to 1 percent as the fund assets increases from USD 1 million to USD 5 million.

Figure 49: A stylized presentation of an efficient transfer of economies of scale benefits




Source: APEC Policy Support Unit

### 1. Methodology to quantify the economies of scale benefits

In order to quantify the benefits of economies of scale, the cost function of the funds industry in Hong Kong, China can be used as an illustrative benchmark. Relative to some other Asian markets, Hong Kong, China has a more established and open funds industry. Alternatively, one can apply the cost function of the funds industries in the United States and Europe to extrapolate the potential benefits for Asia under the ARFP. However, due to different infrastructure and institutions, the cost functions for Europe and the United States may not be applicable for the Asian experience. This study, therefore, chooses the cost function of Hong Kong, China as a conservative scenario benchmark to quantify the potential economies of scale for Asia as a whole.[11]

Hong Kong, China has a relatively efficient asset management center. The distribution of expense ratios for all funds shows that most funds charge expenses between 1.5 percent and

[11] The report acknowledges that the total expense ratio for mutual funds in Hong Kong, China is not the lowest in Asia. However, it is used as a conservative scenario to estimate the potential savings.

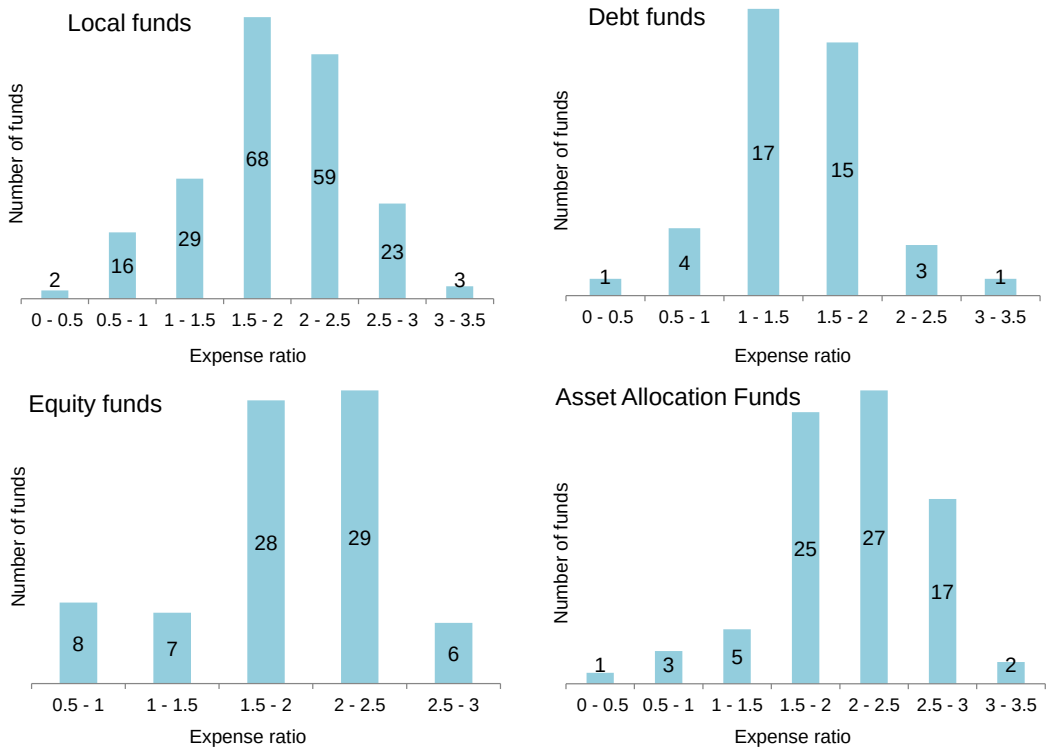
2.5 percent (Figure 50). Equity funds charge within that range while most local debt funds charges expenses between 1 percent and 2 percent. Asset allocation funds charge expenses over a wider range of 1.5 percent to 3.0 percent. Local funds seem to charge more than European domiciled ones on average. The asset-weighted expense ratio for local funds is 1.76 percent as compared to 1.66 percent for European funds sold locally (Figure 51).

As shown in Figure 52, a good transfer of economies of scale is detectable in Hong Kong, China. By regressing the total expense ratio against a constant and the inverse of the fund size,[12] the cost function[13] for funds in Hong Kong, China is derived as:

*Total Expense Ratio = 1.69% + $40,000 / Fund Size*

This cost function implies that investors in Hong Kong, China on average incurred a fixed cost of USD 40,000 per annum and a variable cost of 1.69 percent of the value of the fund under management. This fixed cost contains audit expenses (around USD 24,000 per annum) plus trustee fees that can be as high as USD 20,000 per annum. The variable cost of 1.69 percent of the fund asset reflects other fees such as management fee, registrar fee and safe custody charges. While there is evidence of economies of scale in Hong Kong, China, it is still possible for the funds industry to achieve better efficiency over time.

Figure 50: Expense ratios in Hong Kong, China, 2012

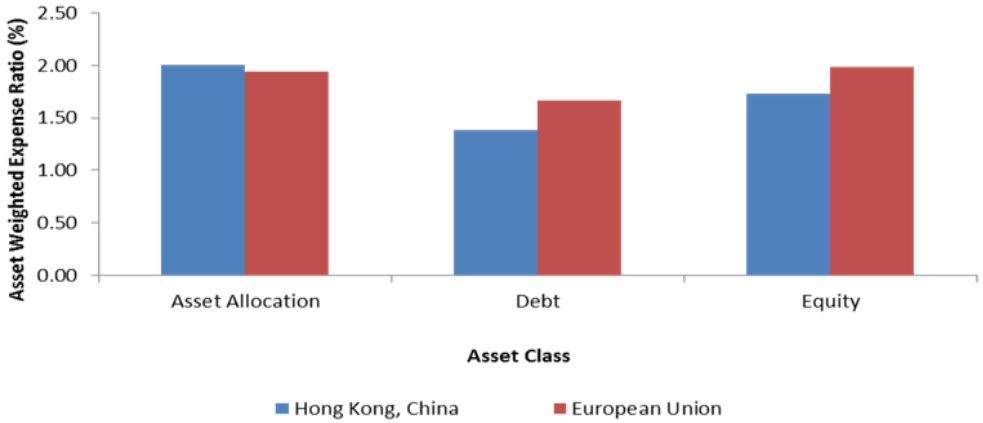



Sources: Bloomberg and Volguard Analytics as indicated in Annex C

[12] The cost function is estimated by the equation: where the coefficient α measures the aggregate variable costs incurred by the fund (i.e., manager's fees) and coefficient β indicates the aggregate fixed costs incurred by the fund but are independent on the fund's size.

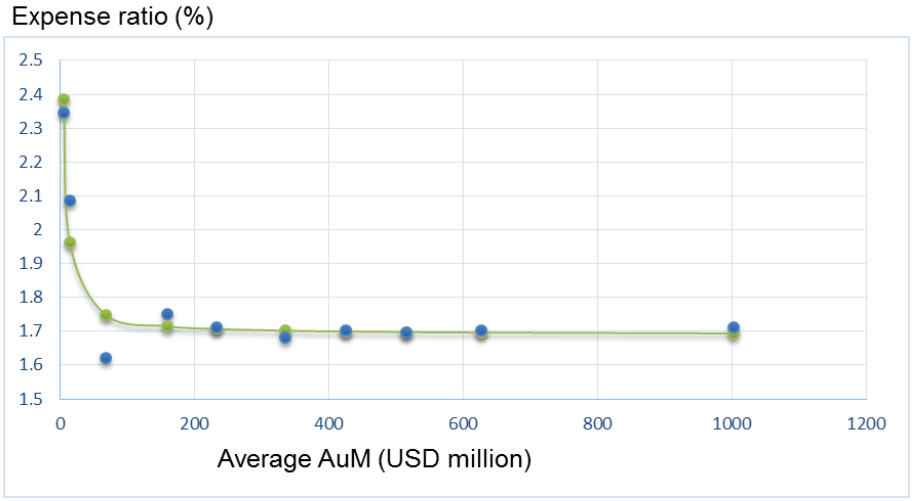
[13] While the regression analysis was conducted using a relatively limited number of data points, the regression results show a good statistical significance. The R-squared is 92% and the t-statistics for both coefficients are significant. Further details are provided in the Annex C.

Figure 51: Weighted expense ratio for funds offered in Hong Kong, China in 2012



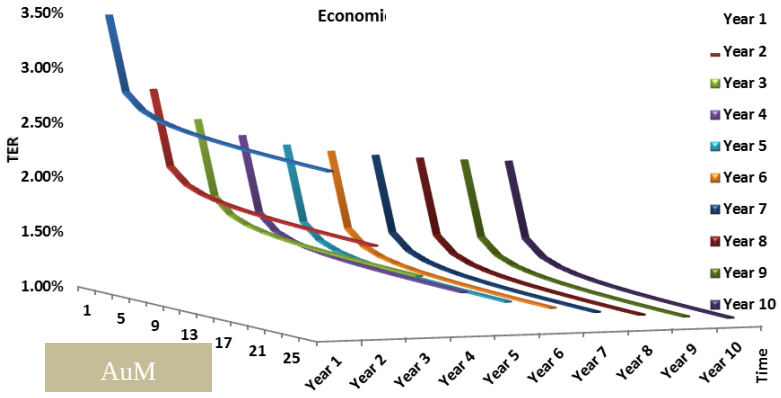

Sources: Bloomberg and Volguard Analytics as indicated in Annex C

Figure 52: Assessment of economies of scale in Hong Kong, China




Sources: Bloomberg and Volguard Analytics as indicated in Annex C

Figure 53: Economies of scale evolution




AuM = assets under management, TER = total expense ratio
Source: Volguard Analytics

The efficiencies gained over time as the market matures are illustrated in Figure 53. This may be attributable to the lower management fees required by asset managers, which could occur as a result of more competition being introduced in the market or larger fund size.

## 2. Quantifying the potential economies of scale benefits

In order to quantify the potential economies of scale benefits following the introduction of the ARFP, the cost function derived for Hong Kong, China is applied to funds in other markets including Australia; Indonesia; Korea; Thailand; Singapore and Chinese Taipei. The results of this simplified exercise (Table 2) show that economies can potentially achieve significant efficiency, assuming that the ARFP supports economies to achieve similar cost structures to those seen in Hong Kong China. Potential efficiency gains, which are transferred through reductions of the TER, are expected to be largest in Indonesia where TER could be lowered by over 100 basis points. In other economies with more advanced funds industries, expected savings can range from 8 basis points in the case of Australia to 37 basis points for Chinese Taipei. These savings in expense ratios can translate to significant reduction in investors' earnings. In the case of Australia, for example, a 10 basis-point saving can lower investors' costs in investing in mutual funds by USD 1,667 million in 2012, the year the data was obtained for the analysis. In Korea, a saving of 17 basis points would translate to a cost reduction worth of USD 483 million for mutual fund investors.

Table 2: Potential savings accrued from the Asia Region Funds Passport*

| Economies | Median TER (% of assets) | Average Equity Fund Size (USD million) | Efficiency shift | Scale Shift | Total Savings (basis points) | Estimated savings (USD million) |
|---|---|---|---|---|---|---|
| **Australia** | 1.8 | 144 | 1.72 | 1.7 | **10** | **1,667** |
| **Indonesia** | 2.7 | 98 | 1.73 | 1.71 | **101** | **154** |
| **Korea** | 1.9 | 77 | 1.74 | 1.72 | **17** | **483** |
| **Singapore** | 1.9 | 98 | 1.73 | 1.71 | **16** | **76** |
| **Chinese Taipei** | 2.1 | 39 | 1.79 | 1.74 | **37** | **241** |
| **Thailand** | 1.8 | 65 | 1.75 | 1.72 | **12** | **57** |

Note: * For this exercise, it is assumed that the liberalization of cross-border mutual fund selling can help the domestic fund industry to achieve a 20 percent annual growth rate, in terms of the value of asset under management. The results of the total savings are derived after 5 years.
TER = total expense ratio
Sources: Volguard Analytics and APEC Policy Support Unit calculations

Chinese investors are already enjoying low fees as TERs in China are among the lowest in the region. However, the funds industry can still achieve additional savings if AuM is to be increased following the introduction of the ARFP. For China, it is estimated that the TER can be reduced by 26 basis points if the ARFP could help the funds industry in China to achieve a 20 percent average annual growth rate.[14] This expense ratio reduction is an equivalent of USD 1,167 million in potential savings for Chinese mutual funds investors.

[14] The estimated potential savings for China is estimated from a different function which is derived by regressing the total expense ratio in China against a constant and an inverse of the size of its AuM.

Due to lack of data on expense ratios for all markets in Asia, it is difficult to provide a precise estimate in potential savings arising from economies of scale. However, a conservative assumption of a 20 basis-point reduction on the weighted total expense ratio for managing funds in Asia signifies a USD 20 billion per annum of savings for Asian investors.[15]

## *II. ASIA REGION FUNDS PASSPORT: GREATER DIVERSIFICATION AND BETTER FUND PERFORMANCE*

Currently, investors in some Asian economies have limited products available to them, partly due to strict regulation that discourages fund managers from distributing their products beyond local shores. Without a broad range of foreign products to choose from, investors have to place the bulk of their funds in local products. This section evaluates whether diversification via the inclusion of foreign funds can help investors in Asia to obtain a more optimal portfolio. Subsequently, the improvements to return-to-risk ratios are estimated. The primary focus is on equity mutual funds that are the largest form of mutual funds in many Asian markets. More importantly, equity funds are more sensitive to advisors' expertise and knowledge and consequently their diversification decisions made on behalf of investors.

The importance of diversifying investment portfolios across borders is well established. Studies by Grubel (1968), Levy and Sarnat (1970) and Lessard (1973) show that holding an international portfolio of assets rather than following the normal home-bias yielded a higher return per unit risk for investors. The benefits extend for even well established fund markets such as the United States. Yuan (2004) demonstrated that US investors could reduce their risk exposure by holding foreign funds even if returns were lower than the US market. This risk sharing benefits of diversification, however, can only arise if assets across jurisdictions exhibit a certain degree of independence, or a lower level of correlation.

To illustrate the level of diversification present in the Asian region both within the same economy and cross border, four major equity funds are selected from Australia; China; Korea; Singapore and Chinese Taipei. Log return correlations were calculated between selected funds. The results are presented in Table 3 with different gradients indicating different degrees of correlation: dark green represents 100 percent correlation while lighter green signifies lower correlation.

[15] The calculation is based on 2012 data in which the values of assets under management totaled USD 10.1 trillion.

Table 3: Cross correlations in returns in selected equity funds

CROSS CORRELATIONS

| | CHINA | | | | KOREA | | | | CHINESE TAIPEI | | | | AUSTRALIA | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SINGAPORE | C1 | C2 | C3 | C4 | K1 | K2 | K3 | K4 | CT1 | CT2 | CT3 | CT4 | A1 | A2 | A3 | A4 |
| | 46% | 41% | 50% | 50% | 48% | 57% | 69% | 82% | 65% | 63% | 65% | 88% | 56% | 43% | 45% | 84% |
| | 48% | 33% | 56% | 56% | 45% | 58% | 70% | 82% | 65% | 61% | 64% | 87% | 58% | 42% | 45% | 84% |
| | 47% | 35% | 52% | 53% | 60% | 70% | 87% | 87% | 77% | 67% | 72% | 91% | 62% | 52% | 54% | 86% |
| | 23% | 24% | 26% | 26% | 44% | 48% | 60% | 55% | 58% | 54% | 59% | 69% | 45% | 29% | 32% | 72% |
| CHINA | S1 | S2 | S3 | S4 | K1 | K2 | K3 | K4 | CT1 | CT2 | CT3 | CT4 | A1 | A2 | A3 | A4 |
| | 46% | 48% | 47% | 23% | 4% | 39% | 30% | 52% | 11% | 17% | 19% | 45% | 38% | 27% | 31% | 47% |
| | 41% | 33% | 35% | 24% | 11% | 25% | 25% | 45% | 8% | 20% | 18% | 41% | 18% | 12% | 16% | 38% |
| | 50% | 56% | 52% | 26% | 6% | 43% | 36% | 54% | 15% | 16% | 16% | 46% | 37% | 24% | 26% | 47% |
| | 50% | 56% | 53% | 26% | 7% | 46% | 36% | 55% | 16% | 16% | 16% | 46% | 38% | 25% | 28% | 48% |
| KOREA | C1 | C2 | C3 | C4 | S1 | S2 | S3 | S4 | CT1 | CT2 | CT3 | CT4 | A1 | A2 | A3 | A4 |
| | 4% | 11% | 6% | 7% | 48% | 45% | 60% | 44% | 67% | 49% | 53% | 61% | 35% | 30% | 30% | 52% |
| | 39% | 25% | 43% | 46% | 57% | 58% | 70% | 48% | 60% | 42% | 48% | 61% | 50% | 48% | 49% | 62% |
| | 30% | 25% | 36% | 36% | 69% | 70% | 87% | 60% | 74% | 60% | 65% | 76% | 48% | 43% | 43% | 67% |
| | 52% | 45% | 54% | 55% | 82% | 82% | 87% | 55% | 63% | 61% | 57% | 91% | 49% | 45% | 48% | 76% |
| CHINESE TAIPEI | K1 | K2 | K3 | K4 | C1 | C2 | C3 | C4 | S1 | S2 | S3 | S4 | A1 | A2 | A3 | A4 |
| | 67% | 60% | 74% | 63% | 11% | 8% | 15% | 16% | 65% | 65% | 77% | 58% | 65% | 54% | 55% | 69% |
| | 49% | 42% | 60% | 61% | 17% | 20% | 16% | 16% | 63% | 61% | 67% | 54% | 53% | 43% | 46% | 62% |
| | 53% | 48% | 65% | 57% | 19% | 18% | 16% | 16% | 65% | 64% | 72% | 59% | 70% | 62% | 63% | 69% |
| | 61% | 61% | 76% | 91% | 45% | 41% | 46% | 46% | 88% | 87% | 91% | 69% | 57% | 47% | 49% | 79% |
| AUSTRALIA | CT1 | CT2 | CT3 | CT4 | K1 | K2 | K3 | K4 | C1 | C2 | C3 | C4 | S1 | S2 | S3 | S4 |
| | 65% | 53% | 70% | 57% | 35% | 50% | 48% | 49% | 38% | 18% | 37% | 38% | 56% | 58% | 62% | 45% |
| | 54% | 43% | 62% | 47% | 30% | 48% | 43% | 45% | 27% | 12% | 24% | 25% | 43% | 42% | 52% | 29% |
| | 55% | 46% | 63% | 49% | 30% | 49% | 43% | 48% | 31% | 16% | 26% | 28% | 45% | 45% | 54% | 32% |
| | 69% | 62% | 69% | 79% | 52% | 62% | 67% | 76% | 47% | 38% | 47% | 48% | 84% | 84% | 86% | 72% |

Note: See Annex C for the list of equity funds (abbreviated as C1, C2, etc.) included in the analysis
Source: Bloomberg and Volguard Analytics as indicated in Annex C

Table 4: Median local and cross-border correlations

| | Singapore | China | Korea | Chinese Taipei | Australia |
|---|---|---|---|---|---|
| Singapore | 89% | 46% | 60% | 65% | 53% |
| China | 46% | 88% | 36% | 17% | 29% |
| Korea | 60% | 36% | 70% | 61% | 48% |
| Chinese Taipei | 65% | 17% | 61% | 81% | 59% |
| Australia | 53% | 29% | 48% | 59% | 84% |
| | | | | | |
| Region | 54% | 54% | 54% | 54% | 54% |

Sources: Volguard Analytics as indicated in Annex C

Table 4 shows the median local, cross-border and regional correlations. It shows that a portfolio with funds within the same economy has high local correlations. The median local correlation ranges from about 70 percent for Korea to about 89 percent in Singapore. The values of the diagonal of the matrix – representing correlations of assets in one market – are much higher than those in the rest the matrix. When a portfolio which includes funds from the region is constructed, its median correlation with other funds in the region is estimated to be 54 percent, much lower than those between funds selected from any individual economy. Though the sample of funds is small, it is observable that by subjecting the selection of funds from the Asian region as a whole to the ARFP and to cross-border products, investors can achieve superior portfolios through diversification. This observation is verified again from the calculation of correlation between 45 equity funds selected from the region (Table 5).

Table 5: Average local and cross-border correlations

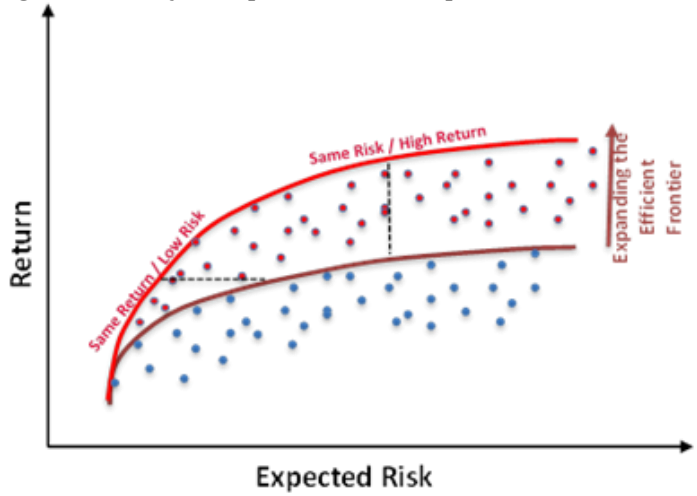
| | Chinese Taipei | Korea | China | Hong Kong, China | Singapore | Australia |
|---|---|---|---|---|---|---|
| Chinese Taipei | 49% | | | | | |
| Korea | 35% | 55% | | | | |
| China | -1% | 29% | 92% | | | |
| Hong Kong, China | 10% | 33% | 54% | 67% | | |
| Singapore | 42% | 49% | 30% | 59% | 76% | |
| Australia | 28% | 61% | 22% | 12% | 28% | 52% |

Source: Volguard Analytics as indicated in Annex C

### 1. Asian funds markets: the current efficient frontiers versus the efficient frontier under the Asia Region Funds Passport

According to the Modern Portfolio Theory, optimizing an investment portfolio is possible due to imperfect correlations between funds. When two or more funds are not perfectly correlated, a portfolio with a mix of those funds has a lower variance – hence lower risk – than that of their individual component funds. Furthermore, the lower the correlation between these funds, the lower the variance of a portfolio that is made up of them. Accordingly, diversifying a portfolio using funds with low correlations to each other is an effective way of maximising the return/risk ratio. From the correlation matrices (Tables 4 and 5), an Asian region fund portfolio has a lower correlation than those pooled together from the same economy. Therefore, superior optimal allocations for portfolio compositions that consider all funds in the region can be achieved.

Figure 54: A stylized presentation of optimization benefits of the Asia Region Funds Passport




Source: Volguard Analytics

The benefits of diversification can be demonstrated through the efficient frontier, also known as the Markowitz Bullet (Figure 54). A region of all possible combinations of funds in a portfolio is plotted on an Expected Returns against Standard Deviation (Volatility) space. The left, upward sloping boundary of this region is the efficient frontier, where the Expected Return is maximised for any given volatility or where the volatility is minimized for any given Expected Return. This frontier represents the optimal set of portfolios investors can obtain with the given funds.

In this section, the efficient frontier can be constructed using matrices to minimize the expression below:

$$w^T Cw - q \times R^T w$$

Where:

$w$ is a vector of portfolio weights

$C$ is the covariance matrix for the returns of assets in the portfolio

$q \geq 0$ is the "risk tolerance" factor, where 0 results in the portfolio with minimal risk

$R$ is a vector expected returns

$w^T Cw$ is the variance of portfolio return

$R^T w$ is the expected return on the portfolio

is the covariance matrix for the returns of assets in the portfolio is the "risk tolerance" factor, where 0 results in the portfolio with minimal risk is a vector expected returns is the variance of portfolio return is the expected return on the portfolio. The above optimization finds the point on the frontier at which the inverse of the slope of the frontier would be q if portfolio return variance instead of standard deviation were plotted horizontally. The frontier in its entirety is parametric on q. With this optimization exercise, it is possible to find the weighting of each component asset within a portfolio that achieves the minimum risk. These minimum standard deviations and target returns then form the efficient frontier. Based on the analysis discussed above, it is possible to arrive at the two mutual fund theorem (Merton 1972), that is, an investor is able to synthesize any portfolio on the efficient frontier using any two other mutual funds that lie on the same efficient frontier.

Alternatively, the Global Minimum Variance Portfolio can be calculated using these equations:

$$A = 1'S^{-1}1 > 0$$

$$B = 1'S^{-1}R$$

$$C = R'S^{-1}R$$

$$\Delta = AC - B^2 > 0$$

Where:

S is the variance-covariance matrix of the component assets,

$R$ is the vector of expected returns of each asset,

(1) is a unity vector with the length equal to the number of assets

The standard deviation (σ) at each level of expected return (r) is given by this formula:

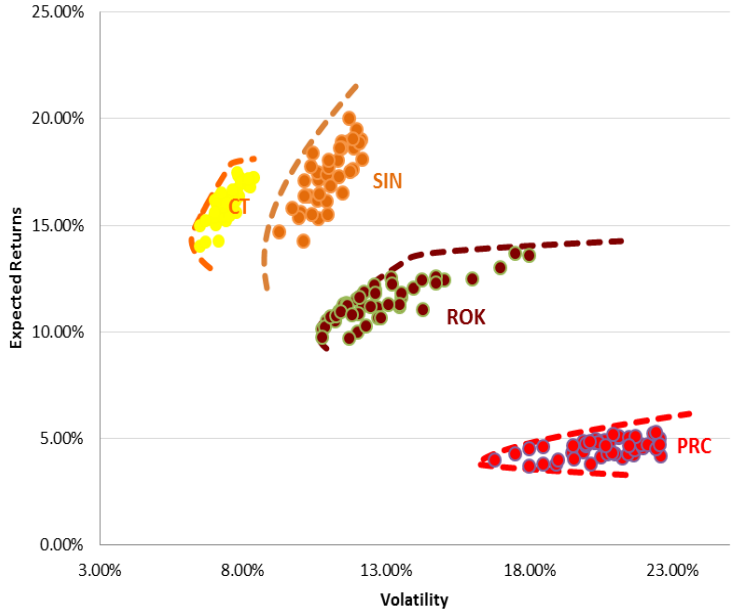
$$\sigma = \sqrt{\frac{\mathrm{Ar}^2 - 2\mathrm{Br} + \mathrm{C}}{\Delta}}$$

Using the methodology described above, efficient frontiers for some Asian markets – including Australia; China; Korea; Singapore and Chinese Taipei – are constructed[16]. As illustrated in Figure 55 the efficient frontier for China's funds located in the lower right of the chart, indicating that in the year that the data was selected for the analysis, mutual funds in China offered lower returns at relatively higher volatility. At the other end of the scale, funds in Chinese Taipei tended to offer higher returns at relatively lower risk – with the efficient frontier locating at the upper left quadrant of the chart.

One reason that the efficient frontiers of China and Korea perform less well than the other economies could be the result of recent economic conditions in these two economies, combined with a strong focus on their respective local markets. Such low returns could encourage investors to resort to leveraged strategies for their portfolios in order to improve their return on investment. These strategies could lead to significant concentration and liquidity risk in a particular industry, especially when investors are limited in their choice of funds. The relatively higher risks inherent in these funds as compared to funds of other economies, compounded by the high risks associated with this strategy, increases overall risk. This affects the stability of the industry and can represent a serious cost to the economy.

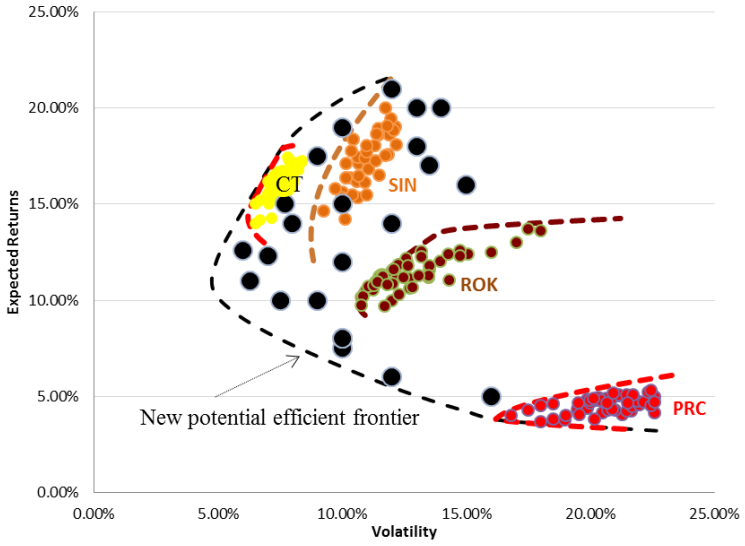
[16] However, the method above assumes zero constraints on portfolio asset weights. Here, short selling has been ruled out for the construction of such portfolios; hence this study assumes that investors can only go long on these funds. In its place, an iterative method is used to determine the efficient frontier (as described in Annex C).

Figure 55: Estimated efficient frontier for selected Asian funds, 2012




CT = Chinese Taipei, ROK = Korea, SIN = Singapore, PRC = China
Source: Volguard Analytics as indicated in Annex C

Figure 56: New potential efficient frontier for Asian funds



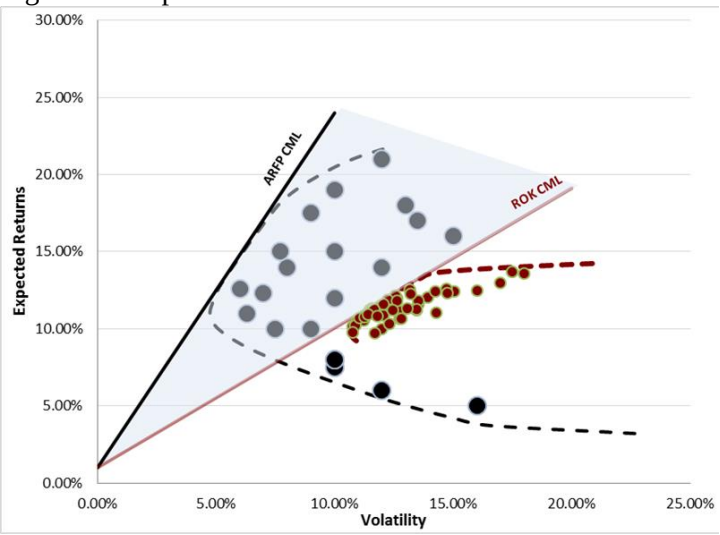

CT = Chinese Taipei, ROK = Korea, SIN = Singapore, PRC = China
Sources: Volguard Analytics as indicated in Annex C

The ARFP will allow wealth managers to include funds from other economies within Asia. Under the assumption that cross-border selling is available, it is possible to achieve a superior diversification of assets, and hence a better return and/or risk ratio. Using the same methodology as above but now with all foreign funds included in the portfolio diversification, it can be seen that the new efficient frontier dominates all of the efficient frontiers from individual economies, both in terms of risk and return (Figure 56). The inclusion of funds from the region offers risk-return targets that are unachievable within any individual economy's funds industry. It is this expansion of the efficient frontier that makes the ARFP scheme attractive for wealth managers.

### 2. Benefits of better diversified portfolios via the inclusion of foreign funds

In this section, the concepts of capital market line (CML) and Sharpe ratio are applied in order to quantify and illustrate the benefits of the ARFP. In previous analyses, the efficient frontiers only included risk assets (funds) and so the implied risks (standard deviations) are floored by the safest achievable portfolio of these risky assets. Wealth managers can achieve lower risks by apportioning a part of the funds into risk free assets. The optimal combinations of these portfolios (risk free assets plus risky assets) are represented by the CML. At the same time, the CML also allows for leverage via borrowings at the risk free rate as represented by the tangent portfolio. Essentially, the CML is the optimum portfolio that an investor can create with the inclusion of the risk-free asset in the portfolio.

Figure 57: Capital market line for Korea under alternative scenarios



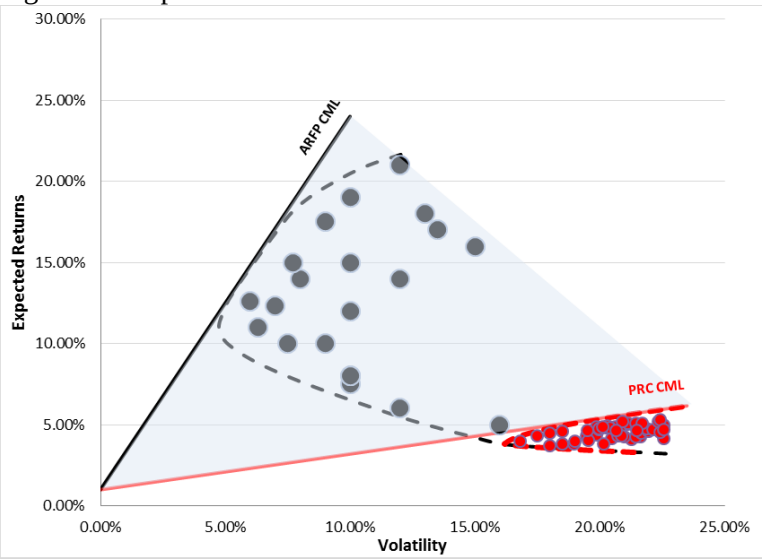

ARFP = Asia Region Funds Passport, CML = capital market line, ROK = Korea
Source: Volguard Analytics as indicated in Annex C

The capital market lines[17] for Korea and China are plotted by drawing a tangent line from the risk-free rate (at zero volatility) to the efficient frontiers found earlier for both economies. In both cases, the CML for a fund portfolio that pools together a mixture of Asian funds is much steeper: the gradients calculated for the regional funds are 2.3 in contrast to 0.9 for Korea and 0.22 for China. In other words, for every 1 percent increase in volatility, the expected returns from adopting an Asia region's portfolio increase by 2.3 percent. This is clearly superior to the increase in returns in Korea (0.9 percent) and China (0.22 percent). The significantly lower volatilities for the same level of return further support the case that the ARFP will

[17] For this analysis, we assume a conservative risk-free rate of 1 percent and that the borrowing and lending rates are equal.

benefit investors. In Figure 57 & Figure 58, the shaded areas demonstrate the forgone opportunities (in terms of risk and return) due to the absence of ARFP.

Figure 58: Capital market line for China under alternative scenarios




ARFP = Asia Region Funds Passport, CML = capital market line, PRC = China,
Source: Volguard Analytics as indicated in Annex C

Table 6: Sharpe ratios for selected Asian markets*

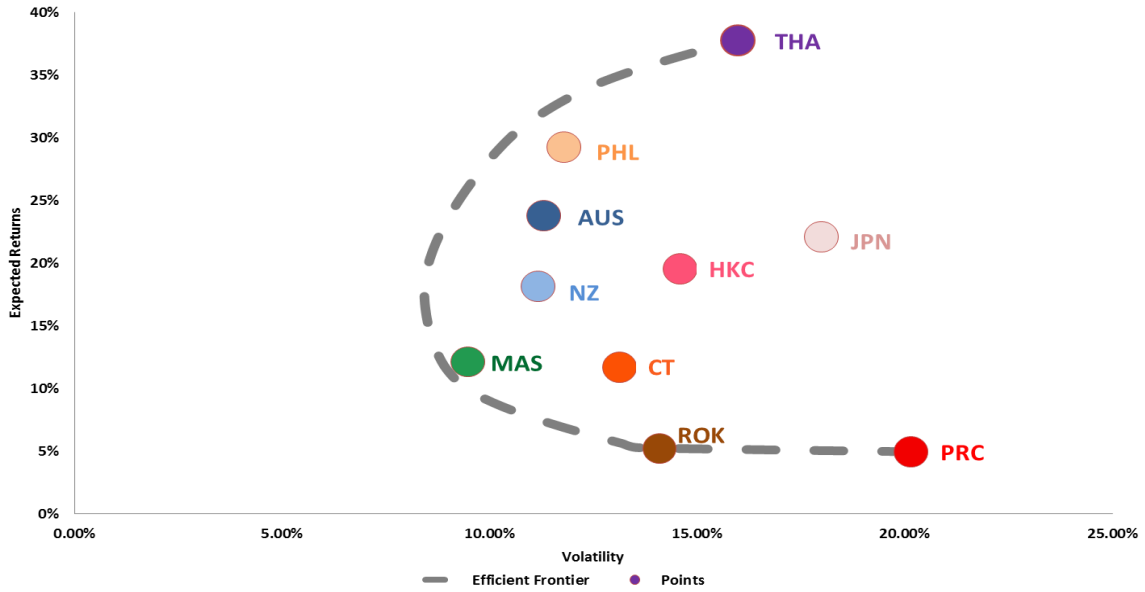
| | Average Volatility** | Average Total Returns*** | Average Sharpe Ratio**** |
|---|---|---|---|
| Australia | 11.3% | 23.8% | 2.2 |
| China | 20.2% | 5.0% | 0.3 |
| Hong Kong, China | 14.6% | 19.5% | 1.4 |
| Japan | 18.0% | 22.1% | 1.3 |
| Korea | 14.1% | 5.2% | 0.4 |
| Malaysia | 9.5% | 12.1% | 1.5 |
| New Zealand | 11.2% | 18.1% | 2.3 |
| Philippines | 11.8% | 29.2% | 2.5 |
| Chinese Taipei | 13.1% | 11.7% | 1.0 |
| Thailand | 16.0% | 37.7% | 2.4 |

Notes: *These returns are considered from the perspective of a USD investment. Foreign exchange fluctuations have been accounted for to ensure consistency in this analysis. It should be noted that the Sharpe ratio in this analysis can be a result of the economic conditions in a particular economy in a chosen year.
**Average of 1-year volatility for the funds in each economy.
***Average of 1-year returns for the funds in each economy.
****Average of the Sharpe ratios calculated for each fund in each economy.
Source: Volguard Analytics as indicated in Annex C

The Sharpe ratio is another indicator that evaluates the performance of a fund. In particular, it is a measure to assess whether the returns are commensurate with the risks pursued. Low Sharpe ratios indicate that the risk is too high for the achieved returns. On the other hand,

high Sharp ratios indicate that returns are in excess of the low risks assumed. Table 6 shows that the adjusted risk returns, in USD, for funds in Australia, Thailand and the Philippines have been high. The Sharpe ratio allows investors to compare performances suggesting that an investor might prefer a 12 percent return in Malaysia or an 18 percent return in New Zealand instead of a 22 percent return in Japan. In the year where the data was obtained for the analysis, China and Korea had a relatively weaker Sharpe ratio of 0.3 and 0.4, respectively. With the diversity of risk-return profiles captured in the above as well as the correlations calculated earlier, a portfolio that comprises of a combination of funds from all these economies would achieve superior performance.

Figure 59: Expanded Asian efficient frontier*



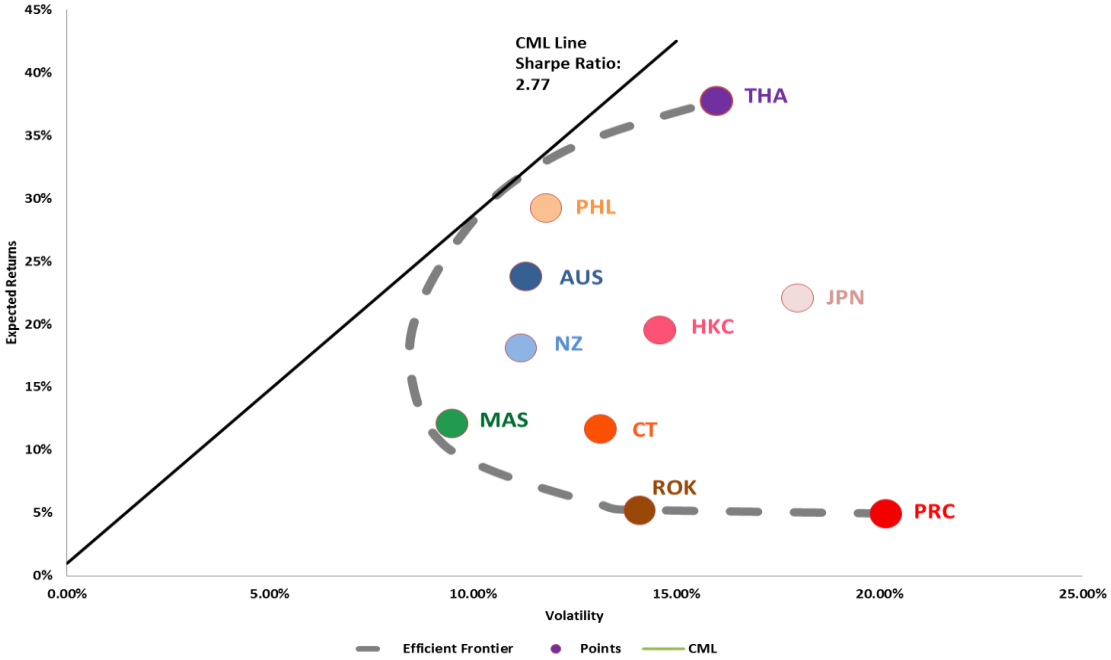

Note: *It is important to point out that efficient frontier optimization assumes USD investment; hence returns are measured and compared in USD terms. The results above are to be viewed from a USD investor perspective and should not be assumed for other currencies. An Australian investor for example, would have to take into account the appreciation of AUD during this timeframe. Some asset managers would use foreign exchange derivatives to hedge against unwanted foreign exchange risk. Even after accounting for the impact of currency movements, the incremental gain in terms of the Sharpe ratio due to diversification is important and is reflected by a shift of the efficient frontier towards lower risks.
AUS = Australia, CT = Chinese Taipei, HKC = Hong Kong, China, JPN = Japan, MAS = Malaysia, NZ = New Zealand, PHL = Philippines, PRC = China, ROK = Korea, THA = Thailand
Source: Volguard Analytics as indicated in Annex C

An efficient frontier for a possible Asian funds portfolio is subsequently constructed under the assumption that a participating investor in the ARFP can choose to invest in the average equity fund of each economy.[18] The investor will then have to perform an optimization of his allocations to each economy. Figure 59 illustrates how the efficient frontier has been expanded. Under the ARFP, an investor will be able to diversify investment and construct portfolios that meet risk appetite. Thus, the efficient frontier of the whole region provides the optimal risk-returns achievable from investments within the region. Alternatively, the benefits can be captured through the improved CML and Sharp ratio (Figure 60). The tangent

[18] The construction of the efficient frontier for the ARFP was based on the average returns and volatilities of equity funds from across the studied economies and assuming a flat correlation of 50 percent (this is conservative considering the cross border correlations calculated previously).

portfolio (which is a combination of investments into the average funds of each economy) has a Sharpe ratio of 2.8, which is higher than the average Sharpe ratio for an average fund in any individual economy.

Figure 60: CML line and Sharpe ratio for the Asian region under the ARFP




AUS = Australia, CT =Chinese Taipei, HKC= Hong Kong, China, JPN = Japan, MAS = Malaysia, NZ = New Zealand, PHL = Philippines, PRC = China, ROK = Korea, THA = Thailand
Source: Volguard Analytics as indicated in Annex C

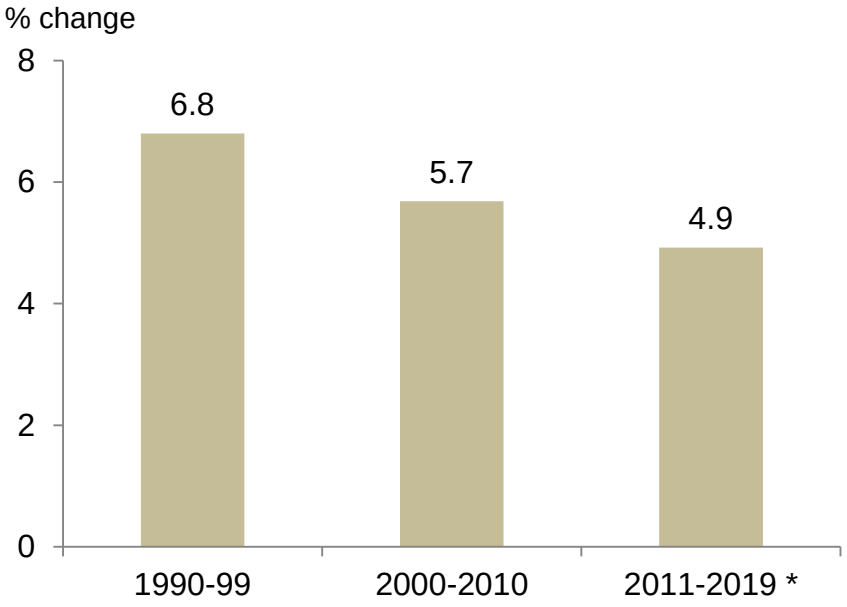
## *III. ASIA REGION FUNDS PASSPORT TO SUPPORT SUSTAINABLE ECONOMIC GROWTH*

Asia has achieved impressive growth in the past few decades. The region is expected to continue to be the main engine of global economic growth, at least in the near future. Over the next 5 years, Asia is forecast to achieve around 5.4 percent per annum average growth rate while growth for the rest of the world is expected to accelerate at an average annual growth rate of 3.0 percent. Asia will also be the main source of newly created wealth. The region's private wealth is projected to post a compound annual growth rate (CAGR) of 8.0 percent over the next 5 years to reach USD 66.3 trillion. In comparison, private wealth in the rest of the world will grow at a projected CAGR rate of 3.1 percent. Asia will hold the largest share of the world's private wealth pie, accounting for 63 percent of global wealth by 2017.

The seismic shift of Asia's position in the global wealth network suggests that the region has approached the critical mass that is needed to develop a truly regional funds industry that can contribute substantially to economic growth. This is particularly important in this juncture as export growth – which has been an important contributing factor to the economic achievement of many Asian economies – is expected to decelerate in the short to medium term. According to the IMF April 2014 forecasts, global trade is expected to grow at an annual average rate of 4.9 percent between 2011 and 2019, representing a sharp slowdown from a 6.8 percent per annum during the 1990s and 5.7 percent over the past decade (Figure 61). This slower trade growth suggests that in order to secure sustainable growth,

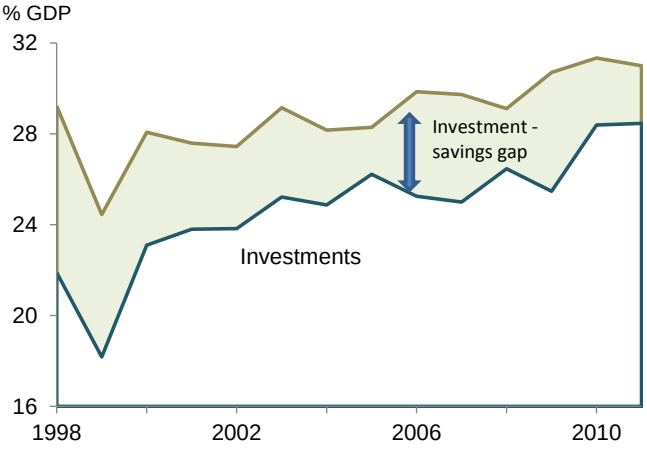
governments – particularly those of emerging and developing economies – need to accelerate the process of rebalancing the economy toward more domestic demand.

Figure 61: Global trade growth




* 2011-2019 figure is forecast
Source: International Monetary Fund, 2014

Figure 62: Evolution of investment and savings in developing Southeast Asian APEC economies*




* Indonesia; Malaysia; Philippines; Thailand and Viet Nam
Source: International Monetary Fund, 2014

Many economies in Asia are changing the growth model and moving away from being export-driven toward more domestic consumption. In some Asian economies, this new growth model requires substantial new investment to enhance productivity and facilitate a shift to higher value-added activities and more innovation. The task of strengthening capital formation depends to a great extent on developing a domestic financial sector that can effectively channel savings to finance economic activity. Currently, the financial sector in many Asian developing economies is still characterized as "shallow" with bank lending remaining the most dominant form of credit. Despite significant recent progress in the development of the bond markets, much of the growth has been concentrated in government debt. The corporate debt market in many Asian economies is still relatively small. For

example, the aggregate value of corporate debt securities of Indonesia, Malaysia, Philippines, Singapore and Thailand in 2010 was USD 211.3 billion. In comparison the total value of domestic bank credit was over USD 3.1 trillion. Many have attributed this underdevelopment of the capital markets and the heavy reliance on banks to the investment–savings gap in some Asian economies in the past decade, as the region's savings were not effectively channeled to finance investment (Figure 62).

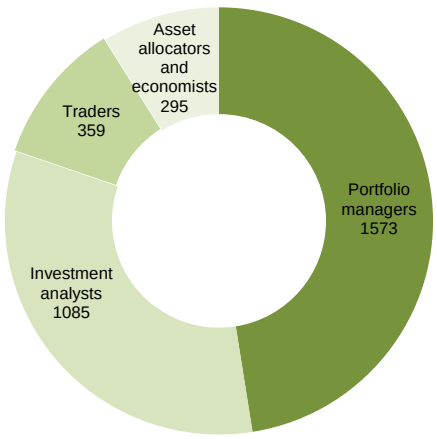
The ARFP, which is designed to enhance the transferability of mutual funds across borders, presents an innovative resolution for businesses to unlock stable and long-term capital necessary to fuel economic growth. The ARFP can also help to channel capital from markets that are in surplus to markets that are in short supply. At the same time, a well-developed mutual funds industry can play a critical role in enhancing the liquidity of domestic commercial banks – a significant source of credit for many emerging and developing Asia. Although banks raise funds through insured deposits, they also utilize a variety of other funding sources such as wholesale funding. Banks often rely on money market mutual funds as a source of this funding. Non-bank financial institutions also utilize money market mutual funds to fund capital market activity.

The benefits can also extend beyond financing investment needs. The ARFP can introduce to local funds industries foreign technical know-how, competitive pricing and higher standards of disclosure and performance. This promotes efficiency in the local fund industries, resulting in greater global competitiveness of the Asian funds management industry. Under the right environment, the thriving of the asset management industry can become a vital source of growth in itself. The contribution of the funds industry to the economy of Luxembourg is a case in point (Box 3).

One of the measureable contributions of the ARFP to the economy is the potential increase in the employment numbers in the funds industries in Asia. An essential feature of the ARFP is that it provides increased opportunities for funds to be domiciled in Asia. Ideally, it will not only increase the chance for local asset fund companies to expand the current operations but also encourage foreign fund companies to set up offices in Asia to manage foreign funds (such as US and European assets).

The benefit of increased employment in Hong Kong, China was highlighted in a PricewaterhouseCoopers report (PricewaterhouseCoopers 2013). An analogy to the benefits accrued from the ARFP can be drawn. In early 2013, Hong Kong, China managed 2,200 funds that were authorized by the Securities and Futures Commission. However, only 300 of these funds were domiciled in Hong Kong, China. It should be noted that the number of employment opportunities created to manage home-domiciled asset is greater than the number of jobs created to manage foreign-domiciled funds. This is because a home-domiciled fund often requires professional not only to manage the fund but also to service the fund structure. In particular, it is estimated that for every one full-time employee working directly in the asset management industry for a locally domiciled fund, there are 4.6 jobs in the industry for servicing the fund structure (Tan 2013). In the case of Hong Kong, China, it can be argued that if the 4000 professionals currently employed were to manage Hong Kong, China-domiciled asset, an additional 18,000 professionals would be needed to service the fund structure. Assuming each of these additional professional earning an average wage that is equal to the average labor productivity in Hong Kong, China, the creation of 18,000 jobs extra would add USD 1.7 billion into the economy, an equivalent of 0.5 percent of GDP.

Figure 63: Composition of investment professionals in Singapore, 2012




Source: The Monetary Authority of Singapore, 2013

A similar analysis can be performed for Singapore. As of 2012, there were 3,276 professionals employed in the mutual funds industry (Figure 63). However, a majority of these professionals managed foreign-domiciled funds as domestic-domiciled funds accounted for less than 3 percent of total USD 1,626 billion AuM in Singapore. If all these professionals were to manage home-domiciled funds, there would be over 15,000 extra employment opportunities, adding an equivalent of USD 1.5 billion to the Singapore's economy.[19]

Unfortunately, this exercise cannot extend to the rest of Asia, given the limited public information on the number of employees in the asset management industry. However, the analysis from Singapore can be used as catalyst for potential job creation in Asia.[20] As noted above, the ARFP would provide more opportunities for Asian funds managers to increase the manufacturing of funds domiciled in Asia. Assuming that the 20 percent growth per annum in the total assets under management in Asia will be invested in Asian-domiciled funds, this potentially can create about 170,000 extra jobs in Asia over the next 5 years.

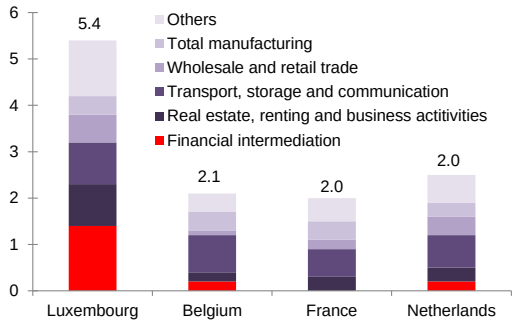
[19] This calculation assumes that each extra professional will produce an average output equaled to the average labor productivity in Singapore, which was USD 98,331 in 2012, according to statistics obtained from The Conference Board Total Economy Database.

[20] If 18,345 professionals were needed to manage the USD 1,626 billion AuM in Singapore, this implies that every USD 88 million worth of assets would provide one job in the funds management industry.

**Box 3: The mutual funds industry in Luxembourg and its contribution to economic growth**

In 1988, Luxembourg transposed the Directive concerning the Undertakings of Collective Investments in Transferable Securities (UCITS) into domestic law, becoming one of the first economies to allow open-ended funds investing in transferable securities to be subject to the same regulation in every member jurisdiction of the European Union. Since then, the mutual funds industry has blossomed with its net assets increasing from EUR 247.1 billion in 1994 to an estimated EUR 2.13 trillion in September 2013. Despite the small size of the local economy, Luxembourg's mutual funds industry is the second largest in the world, just after the United States.

Figure 64: Contribution to GDP growth in Luxembourg and neighboring economies, 1986–2003 (percentage points, annual average)




GDP = Gross Domestic Product
Source: OECD

The mutual funds industry in Luxembourg has gone beyond its traditional role of being a financial vehicle to raise capital from retail and institutional investors and providing funding to other sectors. The rapid growth of the asset management industry underpins the high growth rate in the financial sector during 1980s to early 2000s and has helped Luxembourg's economy to achieve higher growth rates than its neighbors – including France; Belgium and the Netherlands. Between 1986 and 2003, real GDP in Luxembourg was growing at an annual average of 5.4 percent, more than twice the average 2.2 percent growth rate of its neighbors. The most important driver of the wedge in the growth rates between Luxembourg and its neighbors over this period was the difference in the contribution of the financial sector to the overall economic growth. Over this period, financial intermediation contributed 1.4 percentage points to Luxembourg's economic growth while it contributed only 0.1 percentage points to its neighbors' average economic growth rate (Figure 64).

Despite a recent slowdown in growth, the mutual funds industry is still the motor of the Luxembourg economy. An important indicator of the significance of the asset management industry to the overall economy can be seen in the fact that in 2008, about 10,500 people were directly employed in the investment funds industry in Luxembourg. With employment in fund accounting and administration, transfer agents, custodians, trustees, client relationship management and related fund services, the total figure was approximately 18,300, accounting for almost 9 percent of Luxembourg's workforce.

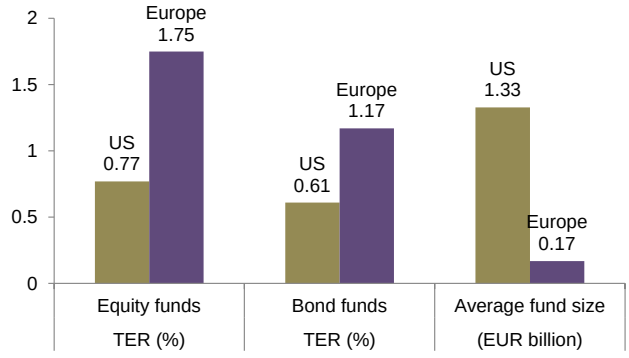
## CHAPTER 4: THE ASIA REGION FUNDS PASSPORT: POTENTIAL RISKS AND COSTS

The analysis above suggests that the Asian region would significantly benefit from the adoption of the ARFP initiative (for example, scale, more efficient intermediation of savings and pooling of risks). However, there are also costs and risks associated with the ARFP. The risk is inherent with any cross-border financing solutions in which shocks in one market can be amplified and transmitted to other markets. The speed with which illiquidity and losses in some markets can translate into the regional asset re-composition can be greater with enhanced interconnectedness and efficiencies of the transmission and intermediation process. It is often argued that the under-development of the financial markets in many developing and emerging Asian economies has shielded these economies to some extent from some recent financial shocks originated from developed economies.

There have been doubts raised about whether the ARFP would actually bring about desired benefits as well as adequate protection to investors. These concerns rest on the fact that while the introduction of the UCITS Directive has created a European market for mutual funds, by facilitating the cross-border distribution of funds, UCITS funds often incur higher fees than non-UCITS funds. This higher expense reflects greater administrative requirements (for example, more frequent pricing and associated reconciliation routines, regulatory reporting including risk management calculations, index providers, depositories, collateralization of swaps) as well as greater costs associated with distributing funds across multiple markets. Lang and Kohler (2011) estimate that selling a fund across seven markets, instead of just one, would increase the total expense ratio by as much as 30 basis points. A further 7 basis points are added for compliance with the UCTIS Directive.

Despite the rapid growth in its assets under management, the UCITS Directives have not successfully consolidated the European funds market in terms of reducing the number of funds and increasing the average UCITS size. In 2012, European combined net assets were EUR 5.9 trillion with 35,000 funds. In comparison, the US funds industry had a net asset value of EUR 9.3 trillion with just over 7,000 funds. Accordingly, the average size of a US fund was about 8 times larger than that of a European fund (Figure 65). The relatively smaller size of European funds has contributed to a more costly total expense ratio. It is estimated that in 2012, the average European-domiciled equity mutual fund had an asset-weighted total expense ratio of 1.75 percent whereas US equity mutual funds had a total expense ratio of 0.77 percent.[21]

Figure 65: Average fund size and total expense ratio in the United States and European markets, 2012

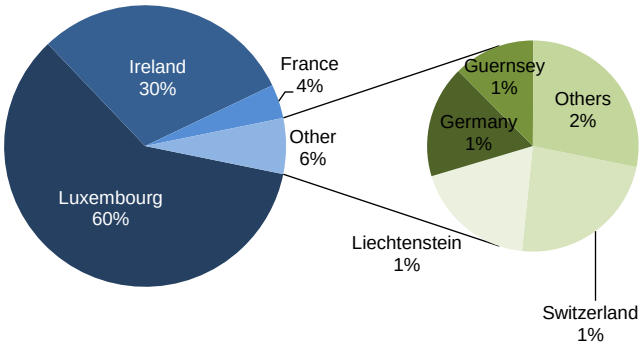



TER = total expense ratio, US = United States
Source: Investment Company Institute and PwC

[21] The value of the total expense ratio for European equity mutual funds is obtained from PricewaterhouseCoopers report while that of the US is obtained from the Investment Company Institute.

Some critics argue that the benefits of the ARFP will not be shared equally among all participating economies. This argument is based on the premise that in the case of UCITS, Luxembourg holds a majority of authorizations received by EU funds for cross-border distribution or marketing (Figure 66). This is due to a number of factors, including the long-standing and respected reputation of Luxembourg as a fund location as well as the global standard for expertise in establishing and servicing the widest range of fund. This means that Luxembourg has been the European domicile of choice for UCITS. Furthermore, since its inception, UCITS has evolved to encompass a wider range of financial assets. Some of these assets may be issued and held in custody outside the European Union through sub-custody arrangements. As of 2011, the UCITS framework was ambiguous in terms of the extent a depositary was liable for losses at sub-custodian level. The Madoff fraud case demonstrated that investors could be left unprotected from losses through fraud committed by a sub-custodian, negligence of a sub-custodian or the bankruptcy of a sub-custodian.

Figure 66: Share of international fund market – all funds (excluding funds of funds), 2009




Source: Lipper, 2010

## CHAPTER 5: EVALUATING THE BUSINESS CASE FOR THE ASIA REGION FUNDS PASSPORT

The global mutual funds industry has been growing at a significant pace over the past few decades. In many markets, mutual funds have become the primary vehicle for the public to meet their long-term savings and investment needs. In Asia, the desire to increase the mutual funds industry's effectiveness and efficiency has grown in importance, especially in responding to the region's mismatch between savings and investments. The current underdevelopment of financial markets in some Asian economies has come at a cost that has manifested itself in the less than optimal rate of investment in the region over the past decade. The lack of better-developed financial markets has resulted in the region's surplus savings being largely used to finance investments in other regions. Some of these savings have travelled back into the region, but in the form of volatile short-term capital flows, rather than as a stable and productive investment. Underdeveloped financial markets can expose the region to significant financial vulnerability if capital inflows are large and volatile.

Managing the volatility of capital flows is a difficult and complex task. Experiences of capital controls in many Asian economies have yielded mixed results. In some cases, imposing capital control measures could inadvertently reverse business-friendly policies. Generally, the risk associated with large and volatile capital flows is minimized when a local financial system is sound and deep enough to allow a smooth channeling of foreign capital into other productive sectors of the economy. For example, firms should be able to access the capital market for investment needs and at the same time there should be a wide selection of sound investments for investors to diversify their portfolios. Well-developed and diversified financial markets will lead to a better allocation of financial resources toward productive investments, at the same mitigating the risks associated with capital flows.

While the ARFP can bring substantial benefits, the emergence of possible unintended consequences needs to be considered. The benefits can only be optimized if the region possesses the requisite infrastructure and institutions. Inadequate legal frameworks, low accounting and auditing standards, poor transparency and weak corporate governance could impede an economy from reaping the benefits of the ARFP. Therefore, it is important for Asia to expand mutual recognition and strengthen cooperation and information exchange between different regulatory authorities. Currently, as a condition to participate in the ARFP, an economy needs to conform to the standards set out in Appendix A (Multilateral Memorandum of Understanding Concerning Consultation and Cooperation and the Exchange of Information) of the International Organization of Securities Commissions (IOSCO). In addition, an economy must meet certain criteria from assessments carried out by the International Monetary Fund and/or the World Bank. Some Asian economies are accelerating their efforts to meet these criteria. For instance, the Philippine Securities and Exchange Commission is working on its compliance with the IOSCO standards. This will make the Philippine securities industries more ready to enter into the ARFP.

Asian economies also need to work together to upgrade and harmonize regulations and market practices. Some of the potential areas for harmonization include standardizing and integrating the region's trading platforms, clearing and settlement systems as well as harmonizing laws, regulations, accounting and auditing standards and tax systems. There is scope also to establish regional competency standards for fund advisors and/or sellers prior to subscribing to the ARFP to fully enjoy its benefits while ensuring proper management of systemic risk. APEC can play a leading role in strengthening the infrastructure necessary to

bring the ARFP to full fruition by providing a platform for key stakeholders in different economies to foster dialogue, information sharing and peer pressure, as well as highlighting best practices in financial regulation and supervision.

It is also important that the region takes steps in strengthening existing surveillance processes. Greater financial openness raises the potential vulnerability of Asian economies to the vicissitudes of systematic risk spillovers, underlying the need to develop regional-level institutions that are capable of monitoring regional systematic risks and to coordinate policy formulation, surveillance and crisis management. The success of UCITS in Europe was partly hinged on the high degree of regional-level cooperation in financial policy. There are three European supervisory agencies that are tasked to monitor different aspects of financial institutions across the region: the European Banking Authority, the European Securities and Markets Authority and the European Insurance and Occupational Pensions Authority. As a result of the euro area sovereign debt and banking sector crisis in recent years, the European Union has committed itself to creating a banking union that was crystallized by the decision to establish a Single Supervisory Mechanism.

Compared to the European Union, Asia is at a less developed stage of regional financial integration and regulation. Asia's greater diversity of financial development and openness implies that the region requires a more nuanced approach to financial cooperation. The region however, can build on the existing regional financial cooperation schemes, including the ASEAN surveillance process that was established by the ASEAN finance ministers in 1998 and the Chiang Mai Initiative Multilateralization (CMIM).[22] Potential options include extending the CMIM membership to other Asian economies and developing a regional surveillance unit that can contribute to early detection of risks and effectively coordinate policy responses.

The introduction of the ARFP should also take place in conjunction with other regional initiatives that support further deepening of the capital markets. The analysis on the morphology of the funds industries in Chapter 2 reveals that Asian portfolios are skewed toward equity funds, with debt-oriented mutual funds playing a much smaller role. This is partly a result of a less developed bond market in Asia. Therefore, in order to achieve an optimal mix of portfolio, Asia needs to continue to strengthen its capital markets. The Asian Bond Markets Initiative of ASEAN+3 is an encouraging step in this direction.

As a result of lessons learned in the Lehman Brothers collapse and the Madoff fraud, Europe is working on a new set of regulations, known as UCITS V. Asia can learn from this experience. In advancing the ARFP, policymakers need to strike the right balance between achieving market efficiency and ensuring investor protection. Emphasis should also be placed firmly on minimizing systemic vulnerabilities and maximizing market transparency. It may be of benefit for Asian regulators to peruse the five iterations of the UCITS directives in order to arrive at the best considerations for mapping out the special rules for the ARFP.

Another factor to be considered is the increased competition pressure that would be seen from the adoption of the ARFP. While this competition could be viewed as crucial for efficiency and the prevention of monopolistic behavior, it could also stifle the development of the local funds industry if foreign competition was introduced too early and too soon. However, this

[22] The Chiang Mai Initiative Multilateralization (CMIM) is a multilateralized self-managed reserve pooling scheme which was built on the original Chiang Mai Initiative, signed by the ASEAN+3 finance ministers at their meeting in May 2000. The size of the agreement under the CMIM was set at USD 120 billion.

risk can be mitigated if the introduction of the ARFP is gradual and incremental. Economies with stronger institutions and infrastructure can lead the adoption process and support other economies to strengthen their institutional capacity. Once less-developed markets possess the necessary infrastructure and capacity, they will be well placed to benefit from the ARFP.

This evolution is evident in Europe's experience of the UCITS. Today, while Luxembourg still holds the larger share of UCITS funds, its dominant role has been increasingly challenged as other economies adjust their regulatory frameworks and implement measures to bolster the capacity of their funds industries. Table 7 shows that Luxembourg accounted for 70.9 percent of the total international fund market in Europe in 2001. But its share fell to 59.7 percent in 2009. Over the same period, the Irish funds industry registered a strong growth of 21.2 percent per annum, helping the funds industry to increase its share of the international funds market from 17.9 percent in 2001 to 30.0 percent in 2009. In 2012, Irish funds recorded a net inflow of ERU 62 billion, becoming the fastest growing UCITS domicile in the world.

Table 7: Evolution of the share of international funds market in Europe

| | 2001 | | 2009 | | 2001 - 2009 |
|---|---|---|---|---|---|
| | Net assets (EUR billion) | Proportion | Net assets (EUR billion) | Propotion | CAGR growth rates |
| Luxembourg | 450,981 | 70.9% | 1,056,055 | 59.7% | 11.2% |
| Ireland | 113,722 | 17.9% | 530,409 | 30.0% | 21.2% |
| France | 7,356 | 1.2% | 69,279 | 3.9% | 32.4% |
| Liechtenstein | 3,481 | 0.5% | 21,497 | 1.2% | 25.6% |
| Germany | 1,429 | 0.2% | 19,620 | 1.1% | 38.7% |
| Guernsey | 1,501 | 0.2% | 14,689 | 0.8% | 33.0% |
| Jersey | 2,763 | 0.4% | 11,173 | 0.6% | 19.1% |

CAGR = compound annual growth rate
Source: Lipper, 2010

## CHAPTER 6: CONCLUSION

In conclusion, the business case for introducing the ARFP into Asia suggests that the benefits will outweigh the risks. Under the assumption that the region has the requisite conditions to reap the full benefits of the initiative, investors will profit from higher fund returns at lower costs and lower risks. The savings from achieving better economies of scale alone could accrue to at least 20 USD billion per annum for investors.

If carefully managed, increased competition will result in more efficient funds industries that are capable of creating innovative products and nurturing new talent. A better funds management industry in Asia should benefit the regional economy by creating new jobs. By providing more opportunities for funds managers to assemble locally domiciled funds, the ARFP could potentially bring about 170,000 new jobs in the region. Efficient funds industries will also be critical for channeling funds from surplus markets to those where there are shortages. Together, this will bolster the capital formation of the Asia region and maintain the region's position of being the key engine of global growth.

The benefits accrued from the ARFP will vary across participating economies. Larger gains – in terms of the reduction in costs for managing a fund, and better fund performance – are expected for investors in closed and small fund markets. For example, larger fund sizes would reduce the TER for equity mutual funds for Indonesia as much as 101 basis points in 5 years. In other markets where AuM is already large, such as China, the benefit of diversification is apparent.

It is important for policymakers to take measures to optimize the benefits while at the same time minimizing the risks. Some suggestions in this regard include a holistic approach to ensure the macroeconomic stability of the region; to strengthen the capital markets (that is, equity and bonds); and to strengthen the financial institutions and financial infrastructure. Under current arrangements, the process of introducing the ARFP will be gradual. A pilot scheme is scheduled to commence by 2016. Membership to join the ARFP is open to all APEC economies in Asia, upon the consent from existing members. This gradual process is important in ensuring the establishment of a strong and efficient framework of the ARFP. At the same time, it allows other economies to adjust their institutional and legal frameworks that are necessary to adopt the ARFP. APEC should provide a platform for participating economies to exchange ideas, and to establish the framework as well as to build capacity.

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## ANNEX A: CHINESE TAIPEI SURVEY FINDINGS

As part of this study, a survey was conducted to elicit the opinions of 37 professionals and specialists in the wealth management business of Chinese Taipei. The scale of the survey ran from 'Not Important', 'Slightly Important', 'Somewhat Important', 'Important', 'Very Important' and 'Critical' for the first half of questions. Twenty-three professionals responded. The findings on the importance of cross-border selling of funds in Asia towards the success of the wealth management industry in Asia was unanimous – 100 percent found it to be important with 48 percent considering this factor as 'Very Important' to 'Critical' for success.

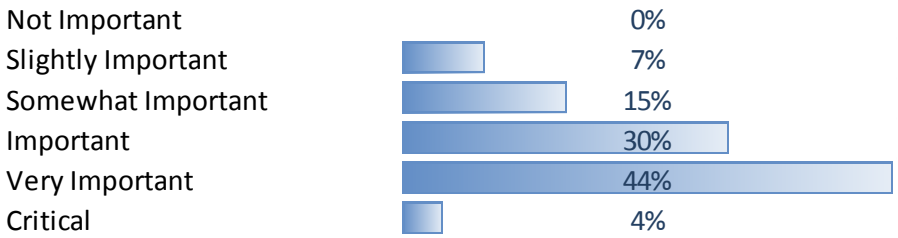
On the issues of harmonization and optimization across the economies via the ARFP (including regulatory differences, administrative costs as well as tax treatment), the survey findings showed that 100 percent of respondents found these factors to be important potential impediments to be overcome for the cross-border selling of funds in Asia. A marked majority of 67 percent considered regulatory differences as 'Very Important' to 'Critical' and 37 percent viewed differences in tax treatment as 'Very Important' to 'Critical' as a hindrance to subdue cross-border selling. Relative to these two factors, 78 percent of respondents considered administrative costs to be 'Somewhat important' to 'Important', in recognition that the dominant factor is the heterogeneity of economic frameworks in the region.

On a scale of 'Highly Unlikely', 'Unlikely', 'Maybe', 'Likely', 'Very Likely' to 'Most Likely', 89 percent of participants expected an increase in wealth management investment in Asia as a result of the ARFP scheme. A total of 52 percent foresaw that diversification out of UCITS into Asia-domiciled funds was 'Likely' to 'Very likely'. Last but not least, 70 percent expected the ARFP to provide an incremental growth in the range and sophistication of wealth management products in Asia.

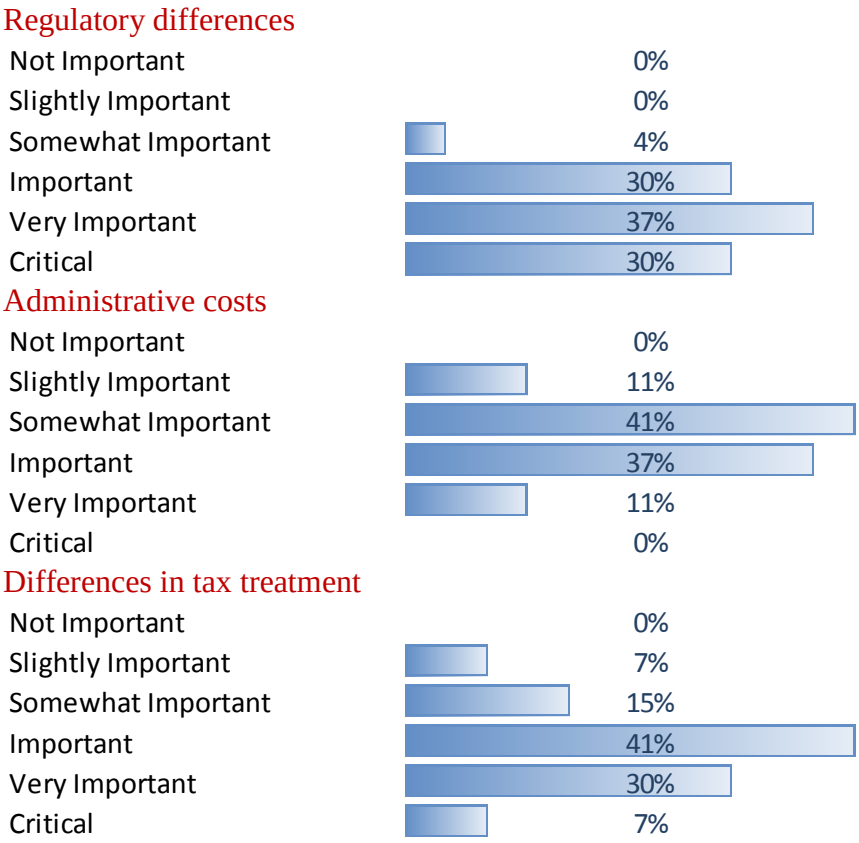
Overall, the results indicated strong support for the ARFP concept as a boost for cross-border selling of funds in Asia. Participants readily admitted that there are hurdles that have to be crossed but they were generally optimistic that the ARFP can be instrumental in enhancing the success of the wealth management industry of Asia.

*SURVEY RESULTS*

**1. How do you rate the importance of cross-border selling of funds in Asia towards the success of the wealth management industry in Asia?**




**2. How do you rate the following issues "AS IMPEDIMENTS" to the development of cross-border selling of funds in Asia?**



**3. If there is the Asia Region Funds Passport scheme that allows cross-border selling, would you expect:**

An increase in wealth management investments in Asia


Diversification out of UCITS into Asia domiciled funds


A growth in the range and sophistication of wealth management products in Asia


Source: Survey Analysis conducted in July 2013 by Volguard

## ANNEX B: GLOSSARY OF TERMS

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| **Actively managed funds** | Funds that have active managers that rely on analytical research, forecasts, and their own judgment and experience in making investment decisions on what securities to buy, hold and sell. |
| **Adviser** | An organization employed by a mutual fund to give professional advice on the fund's investments and asset management practices. Also known as investment adviser. |
| **Alternative investments** | Investments outside the mainstream. Can include hedge funds, venture capital, art, wine, infrastructure funds, etc. |
| **Asset allocation funds** | A fund that spreads its portfolio among a wide variety of investments, including domestic and foreign stocks and bonds, government securities, gold bullion and real estate stocks. Some of these funds keep the proportions allocated between different sectors relatively constant, while others alter the mix as market conditions change. |
| **Asset breakpoints** | The dollar amounts at which many mutual funds offer reduced fees to investors through a reduction in management fees that fund advisers may charge their associated funds as fund assets surpass a given level. |
| **Asset class** | Types of investments, such as stocks, bonds, real estate and cash. |
| **Assets** | Securities, cash, and receivables owned by a fund. |
| **Assets under management** (AuM) | The market value of assets that an investment company manages on behalf of investors. |
| **Asset-weighted expense ratio** | Expense ratio calculated using a weighted average method based on the AuM. |
| **Back-end load** | A redemption charge an investor pays when withdrawing money from an investment. |
| **Basis Points (bps)** | One one-hundredth of 1 percent (0.01 percent); thus, 100 basis points equal 1 percent. When applied to $1.00, 1 basis point is $0.0001; 100 basis points equal one cent ($0.01). |
| **Benchmark** | A standard against which the performance of a portfolio can be measured. Generally, broad market and market segment stock and bond indices are used for this purpose. |
| **Beta** | A relative measure of the sensitivity of a fund's return to changes in the benchmark's return. The beta (or 'slope') between two funds is the amount the fund moves when the benchmark moves by one unit. For example, a beta of 0.5 implies that if the benchmark goes up 1 percent the fund goes up 0.5 percent. If the benchmark goes down 1 percent the fund goes down 0.5 percent.<br>The general rule: |

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| | Beta >1: The fund is more volatile that the benchmark.<br>Beta <1: The fund is less volatile that the benchmark. |
| **Bond** | Debt issued for a period of more than one year, that requires the issuer to pay the purchaser a specified interest rate, usually at specific intervals (i.e. every six months), and to repay the principal amount at maturity. Bondholders have an "IOU" from the issuer; however they have no corporate ownership privileges, such as voting rights, as stockholders do. |
| **Bucketed AuM** | Funds grouped by their AuM ranges. |
| **Capital market line** (CML) | A capital allocation line provided by the market index portfolio. |
| **Capital markets** | Includes longer-term, relatively riskier securities. |
| **Concentration risk** | Probability of loss arising from heavily lopsided exposure to a particular group of counterparties. |
| **Correlation** | Shows the strength of a linear relationship between two investments. A perfect correlation is when the investments behave in exactly the same manner. |
| **Correlation coefficient** | Measures the closeness of the relationship between two sets of variables. The correlation coefficient will vary from –1 to +1. +1 indicates that the two variables move exactly in line together, and –1 indicates that they move in equal but opposite directions. A result close to 0 implies that they are unrelated. |
| **Cost of capital** | The minimum required return on a new investment. |
| **Custodial fees** | Fees paid to the bank or trust company that maintains a mutual fund's assets, including its portfolio of securities or some record of them. The custodian provides safekeeping of securities and has no role in portfolio management. |
| **Debt funds** | A fund invests its corpus in debt securities like government securities, treasury bills, corporate bonds etc., yielding steady returns. These funds carry low returns, as the risk involved is low. These funds are generally preferred by investors with low risk appetite and who need regular returns from their investment. |
| **Distribution** | A method of selling fund shares to the public. |
| **Diversification** | The practice of investing broadly across a number of different securities, industries, or asset classes to reduce risk. Diversification is a key benefit of investing in mutual funds and other investment companies that have diversified portfolios. |
| **Domiciliation** | Economy or state of incorporation or registration of a firm where it has its legal address or registered office, or which is considered in law as the center of its corporate affairs. |
| **Economies of scale** | Cost advantages that are obtained due to size, with cost per unit of output generally decreasing with increasing scale as fixed costs are spread out over |

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| | more units of output. |
| **Efficient diversification** | The organizing principle of modern portfolio theory, which maintains that any risk-averse investor will search for the highest expected return for any level of portfolio risk. |
| **Efficient frontier (Markowitz)** | A curve connecting the set of mean variance efficient portfolios in a risk-reward graph, and is created using the Modern Portfolio Theory. The portfolios lying on this line are expected to provide the highest return per unit of risk. |
| **Emerging markets** | Financial markets in newly industrialized economies in the early stages of development. |
| **Equities** | Shares issued by a company that represent ownership in it. Ownership of property, usually in the form of common stocks, as distinguished from fixed-income securities such as bonds or mortgages. Stock funds may vary depending on the fund's investment objective. |
| **Equity fund** | A fund that concentrates its investments in equity. |
| **Exchange traded commodities** | Investment vehicles (asset backed bonds) that track the performance of an underlying commodity index including total return indices based on a single commodity. |
| **Exchange-traded funds** (ETFs) | An investment company, typically a mutual fund or unit investment trust, whose shares are traded intraday on stock exchanges at market-determined prices. Investors may buy or sell ETFs shares through a broker just as they would the shares of any publicly traded company. |
| **Expected return** | Return on a risky asset expected in the future. |
| **Expense ratio** | A fund’s total expenses, disclosed in the prospectus and shareholder reports, expressed as a percentage of its assets. |
| **Financial transaction tax** (FTT) | A tax applied to financial transactions, usually at a very low rate. A financial transaction applies to the exchange of financial instruments and transactions on the financial markets. The financial instruments in question can for instance include securities, bonds, shares and derivatives. |
| **Fixed cost** | Cost components that are independent of fund size. |
| **Front-end load** | A fee imposed by some funds at the point of purchase. |
| **Fund of funds** | Mutual funds that primarily hold and invest in shares of other mutual funds. |
| **Geographic focus of a fund** | Describes where the fund is focusing its investments The four choices are emerging markets, regions, single economy and global. A fund’s geographical focus dictates which investment area choices can be made for example a fund which has a focus of emerging markets would have the options of Southeast Asia, Brazil, Russia, China and India as |

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| | well as several other choices. |
| **Global minimum variance portfolio** | The portfolio of risky assets with lowest variance. |
| **Gross domestic product** (GDP) | Measures the total volume of goods and services produced in the economy. Therefore, the percentage change in the GDP from year to year reflects the economy's annual economic growth rate. |
| **Hedge fund** | A private investment pool for qualified (typically wealthy) investors that, unlike a mutual fund, is exempt from SEC registration. |
| **Hedging** | The use of derivatives to protect a portfolio against a fall in value. |
| **Hybrid fund** | A mutual fund that invests in a mix of equity and fixed-income securities. |
| **Inception date** | The date on which the fund commenced operations. |
| **Index** | A statistical indicator providing a representation of the value of the securities that constitute it. Indices often serve as barometers for a given market or industry and as benchmarks against which financial or economic performance is measured. |
| **Index mutual fund** | A fund designed to track the performance of a market index. The fund's portfolio of securities is either a replicate or a representative sample of the designated market index. |
| **Investment focus** | The different types of investment focus a fund may be undertaking, the funds can have multiple investment focuses and again the options available for each fund will be determined by the asset class they sit within. |
| **Leverage** | The use of borrowed capital to over invest in a portfolio. |
| **Liquidity** | The ability of an asset to be quickly and easily converted into investable cash without any loss of value. |
| **Load fund** | A mutual fund that imposes a sales charge – either when fund shares are purchased (front-end load) or redeemed (contingent deferred sales load) – or a fund that charges a 12b-1 fee greater than 0.25 percent. |
| **Loads** | (back-end, front-end and no-load). Sales charges on mutual funds. A back-end load is assessed at redemption (see contingent deferred sales charge), while a front-end load is paid at the time of purchase. No-load funds are free of sales charges. |
| **Mean of returns** | The average percentage return achieved by the portfolio or benchmark over a given period. |
| **Median** | Statistically, the median is the mid-point of a series of numbers put in ascending order. For example, in the series of numbers 1, 3, 5, 7 and 11, the median is 5. Note that median is not the same as average. |
| **Modern portfolio theory** | Describes how risk-averse investors can construct |

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| | portfolios to maximize expected return for a given level of risk. Investors can select a mean-variance efficient portfolio from the efficient frontier that is in line with their tolerance for risk. |
| **Money market** | The global financial market for short-term borrowing and lending where short-term instruments such as Treasury bills, commercial paper, and repurchase agreements are bought and sold. |
| **Money market** (MM) **fund** | A mutual fund that invests in short-term, high-grade fixed-income securities, and seeks the highest level of income consistent with preservation of capital (i.e., maintaining a stable share price). |
| **Morningstar ratings** | System for rating open- and closed-end mutual funds and annuities by Morningstar Inc. of Chicago. The system rates funds from one to five stars, using a risk-adjusted performance rating in which performance equals total return of the fund. |
| **Net asset value (NAV)** | The per-share value of an investment company, calculated by subtracting the fund's liabilities from the current market value of its assets and dividing by the number of shares outstanding. Mutual funds calculate their NAVs at least once daily. |
| **Open-ended investment company (**OEICs) | A type of investment product that offers indirect investment in securities and other assets. |
| **Operating expenses** | Business costs paid from a fund's assets. These include management fees, 12b-1 fees, and other expenses. |
| **Pooled-vehicles** | Funds from many individual investors that are aggregated for the purposes of investment, as in the case of a mutual or pension fund. |
| **Portfolio** | A collection of securities owned by an individual or an institution (such as a mutual fund) that may include stocks, bonds, money market instruments, and other securities. |
| **Portfolio allocation** | Amount of assets in a portfolio specifically designated for a certain type of investment. |
| **Portfolio asset weights** | Percentage of a portfolio's total value in a particular asset. |
| **Portfolio diversification** | Investing in different asset classes and in securities of many issuers in an attempt to reduce overall investment risk and to avoid damaging a portfolio's performance by the poor performance of a single security, industry, (or economy). |
| **Portfolio manager** | The person or entity responsible for making investment decisions of the portfolio to meet the specific investment objective or goal of the portfolio. |
| **Quantitative analysis** | An approach to investment management based on statistical or numerical methods to assess potential investments. |
| **Quantitative easing** | A monetary policy tool that is often used when the |

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| | key interest rate is already close to zero. A central bank purchases large volumes of bonds, particularly long-dated sovereign bonds, the aim being to further reduce the long-term interest rates. The purchase of bonds creates central bank money, meaning that the money supply is increased, hence the term quantitative easing. |
| **R Squared** ($R^2$) | A statistical measure that represents the percentage of a portfolio's or security's movements that are explained by movements in a benchmark index. R-Squared values range from 0 to 100%. A score of 100 means all movements of a security are completely explained by movements in the index. |
| **Regression** | A statistical process that attempts to determine the linear relationship between the dependent variable and a series of independent variables, or risk factors. |
| **Return-to-risk ratio** | Measure of the possible range of returns calculated using standard deviation and other volatility risk measures. |
| **Risk tolerance** | The degree to which you can tolerate volatility in your investment values. |
| **Risk/return trade-off** | The principle that an investment must offer higher potential returns as compensation for the likelihood of higher volatility in returns. |
| **Sharpe ratio** | Measures a fund's return in excess of the risk free rate for a given period and divides this by the standard deviation of those returns. The Sharpe ratio is a measure of how effectively a fund utilizes risk. This means that the higher a fund's Sharpe ratio the better the fund's historical risk-adjusted performance. |
| **Short selling** | The selling of a security in advance, that the seller does not own but expects to buy it later (cover the short selling) at a lower amount. |
| **SICAVs** | Société investissement à capital variable. An open-ended collective investment fund. Usually operated under the UCITS Directive. Sells units in the fund to the public. Operates on a single (mid) pricing basis. |
| **Skew** | An expression for the differences in volatility seen across different strike prices. |
| **Sovereign debt** | Debt issued by a government in its domestic market. Considered to be the most creditworthy securities in the relevant market although there will be cross-market credit risk. |
| **Standard deviation** | The level of risk associated with an investment as measured by the standard deviation from the expected return. |
| **Strategic asset allocation** | The choice of assets to be held in a client portfolio and the limits set on the weightings by the client. |
| **Total assets** | See assets under management (AuM) |
| **Total expense ratio** (TER) | The total annual costs involved in running an |

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| | investment fund. It consists principally of the manager's annual charge, but also includes the costs for other services paid for by the fund, such as the fees paid to the trustee (or depositary), custodian, auditors and registrar. |
| **Total net assets** (TNA) | Value of fund/portfolio including deductions for accrued income and expenses. |
| **Total return** | A measure of a fund's performance that encompasses all elements of return: dividends, capital gains distributions, and changes in net asset value. Total return is the change in value of an investment over a given period, assuming reinvestment of any dividends and capital gains distributions, expressed as a percentage of the initial investment. |
| **Transfer agent fees** | Fees paid to professional firms that maintain the records of unit holders of the fund. |
| **Unit trusts** | An open-ended fund, diversifying investments to spread the risk to the investors. Investors buy units directly from the fund manager. Authorized unit trusts are subject to FCA investment regulations. Unauthorized funds are not so restricted, but cannot make a financial promotion to retail customers. |
| **Variance** | A measure of volatility, risk or statistical dispersion. Variance is the square of the standard deviation. |
| **Variance covariance matrix** | A symmetric matrix that contains the variance of the risk factors on its main diagonal and the co-variances between two risk factors elsewhere. |
| **Volatility** | The amount and frequency with which an investment fluctuates in value. |
| **Weighted average maturity** (WAM) | A fund's WAM calculates an average time to maturity of all the securities held in the portfolio, weighted by each security's percentage of net assets. The calculation takes into account the final maturity for a fixed income security and the interest rate reset date for floating rate securities held in the portfolio. This is a way to measure a fund's sensitivity to potential interest rate changes. |
| **Yield** | A measure of income (dividends and interest) earned by the securities in a fund's portfolio less the fund's expenses during a specified period. A fund's yield is expressed as a percentage of the maximum offering price per share on a specified date. |

## ANNEX C: DATA SOURCES

The data sources that were used include Bloomberg, Investment Company Institute, EFAMA and Morningstar.[23] We supplement and cross check this with information from Morningstar available through its local sites and Yahoo Finance where necessary. All data provided for the statistics of funds available in a particular market for our analysis are as of May 2013.

With regards to total AuM per market, the study focuses on home-domiciled, open-ended, retail investment funds as elaborated on page 9. These data are seldom available in generic reports. In the cases of Hong Kong, China and Singapore, for example, reports such as "Why Australia: Benchmark Report Update (June 2013)" provide much higher figures equivalent to the total aggregate of asset management and funds advisory business, including pension funds, institutional funds, government funds, insurance portfolios and overseas retail funds. These reports rely on surveys such as the Singapore Asset Management Industry Survey which is based on a survey of financial institutions comprising banks, finance and treasury centers, capital markets services licensees (including REIT managers), financial advisers and insurance companies.

Efforts have been used to derive AuM calculations from actual Bloomberg data taking into account the distinction required by our study. Our findings are similar to those reported by Cerulli Associates (that is, China: USD 427 billion; Korea: USD 282 billion; Hong Kong, China: USD 92 billion; Singapore: USD 52 billion) as explained in "Asia mutual fund assets to hit $1.9 trillion by 2017" (http://www.reidin.com/news/showNews/hk_haymea-hkasiind-20130419-2/asia-mutual-fund-assets-to-hit-19-trillion-by-2017.html).

The Bloomberg website provides information by individual share class of a fund and not aggregate for all share classes of a fund. Thus, in order to get information about the distinct number of funds available, we need to aggregate the share class data by fund or ensure that only one share class per fund is used to calculate the number of unique funds. As total fund assets data is available for each share class, we accomplish this by sorting the data by fund name and fund size and retaining only one share class for each fund. This data forms the basis for calculations of the number of funds available, their size and their distributions.

We use Bloomberg Classifications on Asset Class Focus to differentiate funds by asset class. The classifications are: alternative, asset allocation, commodity, debt, equity, money market and real estate. Data are also available on fund type: mutual funds, unit trusts, open-ended funds, closed-ended funds and open-ended pensions (for Hong Kong, China) are included in our study. We exclude hedge funds as they are beyond the scope of this study and the data available on hedge funds are limited. Funds of funds are excluded in the total asset calculation to avoid double counting.

Fund domicile information is available which helps us to calculate the size of the local fund management industry in each economy. It also helps us determine the extent of penetration of foreign funds in an economy (in terms of number of funds). Fund inception dates and minimum investment amount is also provided for most funds.
Holdings based data are available for a number of funds. We use information on the geographic focus of holdings to get more insight about investment preferences within an economy and by asset class.

[23] Bloomberg, Investment Company Institute, EFAMA and Morningstar

Share class assets, total assets in fund currency and total assets in USD are available for most funds with the date of publication of the data. We use the total assets in USD for unique funds to determine the size of AuM.

**Data collection**

Where available, especially for expense ratio information, we confirm the data with other sources such as individual fund websites, regulator websites, and funds management industry associations.

Unlike the case of Europe, cost structure data are not easily available. There are differing rules for cost disclosure in the economies in the Asia-Pacific. For example, funds in Hong Kong, China disclose a fund expense ratio which is available via the MPFA website. Funds in Hong Kong, China provide a break-up of fund costs in their annual reports.

Funds in China do not report a total expense ratio (TER) in their marketing material. However, some funds do provide a list of costs such as maximum fund management fees, custodian fees, subscription and redemption fees.

Funds in Korea provide a break-up of costs into management fees, custody fees, redemption fees, among others, although the amount of granularity available can vary between funds. TERs are available from shareholder reports.

Funds in Chinese Taipei disclose the maximum management fee and custody fees in their marketing material. TERs are available from annual reports but the break-up of fees presented is not uniform across funds.

In most markets, only the highest cost is disclosed with respect to front load, back load and other fees whereas in reality, loads can reduce based on investment amount or holding period. A sliding scale with breakpoints is used whereby front load reduces as investment amount increases and back end load reduces as holding period for the fund increases and this trend is common across markets especially China; Hong Kong, China; and Chinese Taipei. In many economies, these loads are also subject to negotiation and sales compensation can be paid by the investor as opposed to being refunded by the fund manager.

It should be noted that we did not include Australian funds in the analysis, mainly because they were exhibiting abnormally high returns during the period analyzed. On a longer time horizon, there may be huge volatility of these returns. As such, the high returns may only be temporary and hence unable to capture the true nature of the funds. However, the efficient frontier plot that includes Australian funds is included in Annex C for reference. From this analysis, we observe a leftward and upward shift of all the efficient frontiers towards the new frontier. Therefore the ARFP can help investors realize a decrease in risk and/or volatility under the new diversification strategy for any given return.

**Economies of scale: general analysis methodology**

Funds that release data on expense ratios are filtered; funds with "NA" in expense ratio columns are filtered out. At a minimum, hedge funds, funds of funds, ETFs, and exchange-traded commodities are excluded from analysis. This is because their cost bases and

composition are different from mutual funds. Other funds that are excluded in specific parts of the report are specified within the respective sections.

Using the aggregate number of funds and sorting by asset class, histograms for expense ratio are plotted. This provides a clearer picture of the expense ratio distribution. Only funds domiciled in the local market are considered in this analysis. Asset-weighted expense ratios for the local and foreign funds available in an economy (on aggregate and by asset class) are calculated. This allows a comparison between cost structures in different domiciles.

To understand the impact of scale on expense ratio, the median expense ratio by asset size buckets is plotted. For expense ratio, the median is preferred over the average as it is less susceptible to distortion by the presence of outliers. To calculate the buckets by asset class, the total AuM of each unique fund is used. This is to avoid wrongly attributing economies of scale gained through larger "parent" funds, to share classes that have small class assets.

The selection of funds into asset size buckets is driven by appropriate balance between the number of funds in each bucket as well as low dispersion of total assets in each bucket. This ensures that funds and fund buckets are representative of the underlying distribution of funds while not placing undue weight on the contribution of any single bucket.

Within each bucket, the median expense ratio is calculated and outliers are identified. Outliers are defined as funds in the bucket with expense ratios that are more than one standard deviation away from the median. After removing these outliers, the median is recalculated. This revised median is then plotted against the average asset size in each bucket. Drawing from previous studies on scale, a decreasing relationship between expense ratio and fund size is expected. A trend line based on expense ratio regressed against the inverse of asset size is plotted to test the same. This analysis is completed for the locally domiciled equity funds available within each market.

**Efficient frontier analysis**

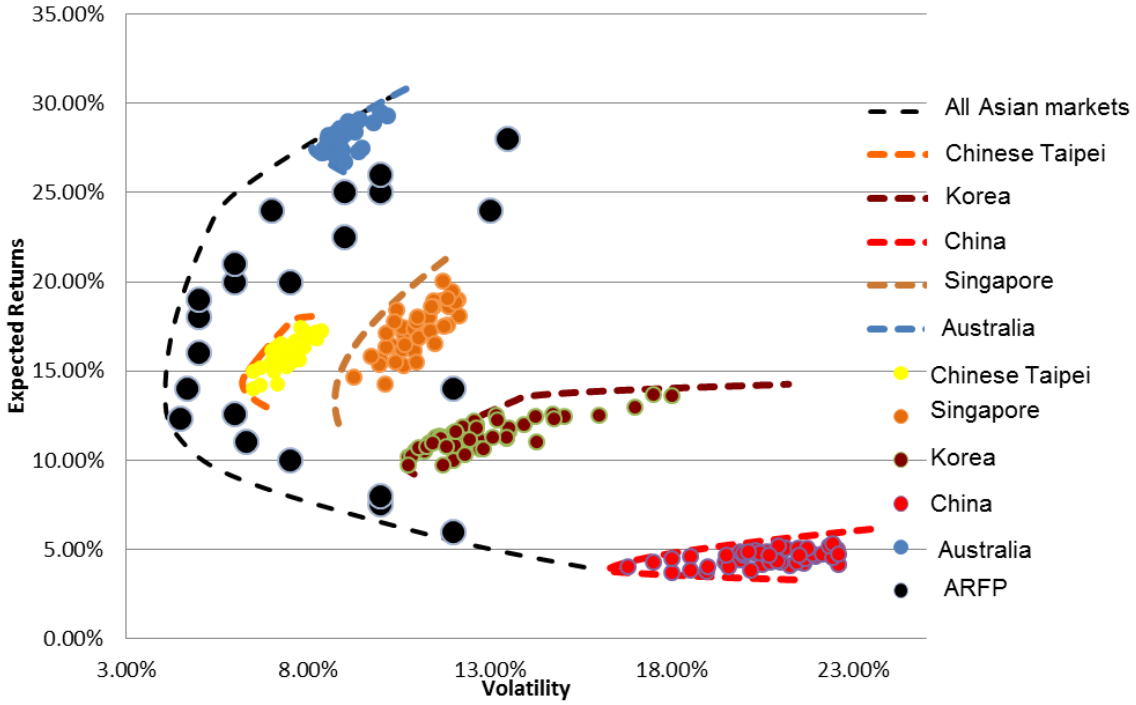
The analysis of efficient frontier was based on a pool of funds listed in table A.C.1 and A.C.2. Monthly prices and dividends of this pool of fund for the period between 30 June 2012 and 31 May 2013 were used to calculate expected monthly returns and expected monthly volatilities. Outlying funds with an abnormally high return with respect to volatility can potentially skew the efficient frontier by concentrating the asset weights towards these much more favorable funds. Conversely, funds with abnormally low returns with respect to volatility will not be allocated any weight in any portfolio and is redundant. Hence in order to detect and remove these outliers, we find the ratio of monthly-expected returns to monthly volatility. We selected two to four funds that are closest to the median of that ratio to be used in the generation of the efficient frontier.

Next, we generate the Annualized Covariance-Variance Matrix as well as the Correlation Matrix using the monthly returns of the selected funds. Since the calculation of average returns is essentially an exercise of estimation, $(n - 1)$ instead of $n$ is used as a divisor in the calculation of the average used in the computation of covariance, where n is the total number of observations.

For each of the portfolios used in the efficient frontier later in the analysis, the annualized portfolio volatility and the annualized expected monthly returns are calculated using matrix

equations. Lastly, we generate the efficient frontier by finding the best allocation of funds (by weight).

Figure A.C.1: Efficient frontiers across the Asian region




ARFP = Asia Region Funds Passport, AU = Australia, CN = China, KR = Korea, SG = Singapore, TW = Chinese Taipei
Source: Volguard Analytics

When we include the funds from Australia in our efficient frontier, we notice that it shifts significantly leftward and upward. As mentioned earlier, this is due to the exceptionally high returns that the funds from Australia are experiencing.

Table A.C.1: Funds used to perform Markowitz analysis

| Market | Selected Funds | Abbreviations |
|---|---|---|
| **AUSTRALIA** | PLATINUM INTERNATIONAL FD-C | A1 |
| | AMP CAP ENH INDEX INTL S-W | A2 |
| | AMP-FUT DIRECT CORE INTL-A | A3 |
| | PLATINUM ASIA FUND-C | A4 |
| **CHINA** | CHINA AMC SHSZ300 INDEX | C1 |
| | GUANGFA JUFENG EQUITY FUND | C2 |
| | E FUND SSE50 INDEX ENHANCED | C3 |
| | CHINA 50 ETF | C4 |
| **KOREA** | KITM SAMSUNG GROUP RSP 2 | K1 |
| | KITM SAMSUNG GROUP RSP 1 | K2 |
| | SAMSUNG KODEX LEVERAGE ETF | K3 |
| | MIRAE CHINA SOLOMON EQ 1 | K4 |
| **SINGAPORE** | UNITED CHINA/INDIA DY GR-SGD | S1 |
| | PRULINK CHINA-INDIA FUND | S2 |
| | PRULINK ASIAN EQUITY FUND | S3 |
| | ABERDEEN INDIA OPPORT - S$ | S4 |
| **CHINESE TAIPEI** | YUANTA/P-SHRS TW TOP 50 ETF | T1 |
| | UPAMC QUALITY GROWTH FUND | T2 |
| | CAPITAL MARATHON FUND | T3 |
| | JPMORGAN TW CHINA CONCEPT FD | T4 |

Table A.C.2: Funds used for correlations calculations

| | |
|---|---|
| CHINESE TAIPEI | YUANTA/P-SHRS TOP 50 ETF<br>ALLIANZ GLB INV GLB ECO TREN<br>UPAMC QUALITY GROWTH FUND<br>CATHAY DRAGON FUND<br>CAPITAL MARATHON FUND<br>EASTSPRING INDIA FUND<br>JPMORGAN TW CHINA CONCEPT FD |
| KOREA | KB VALUE FOCUS-A<br>SHBNPP BONJOUR CHINA-2<br>KITM SAMSUNG GROUP RSP 2<br>KITM SAMSUNG GROUP RSP 2<br>SAMSUNG KODEX LEVERAGE ETF<br>MIRAW CHINA SOLOMON EQ 1 |
| CHINA | HUANN MID/SMALL-CAP FUND<br>HARVEST SHENZHEN 300 IN LOF<br>CHINA AMC SHSZ300 INDEX<br>GUANGFA JUFENG EQUITY FUND<br>E FUND SSE50 INDEX ENHANCED<br>E FUND SI100 INDEX FUND<br>CHINA 50 ETF<br>CHINA AMC ADVANTAGE GROWTH<br>TONGLI SERIES FUND-INDEX |
| HONG KONG, CHINA | TRACKER FUND OF HONG KONG<br>ISHARES FTSE A50 CHINA INDEX<br>HANG SENG INDEX ETF<br>HANG SENG H-SHARE INDEX ETF |
| SINGAPORE | WISE - CSI 300 CHINA TRACKER<br>FIRST STATE DIVIDEND ADV-S$<br>ABERDEEN PACIFIC EQUITY - S$<br>UNITED CHINA/INDIA DY GR-SGD<br>EASTSPRING INV UT DRGPK<br>PRULINK CHINA-INDIA FUND<br>PRULINK ASIAN EQUITY FUND<br>ISHARES MSCI INDIA INDEX ETF |
| AUSTRALIA | AIA REGIONAL EQUITY FUND<br>ABERDEEN INDIA OPPORT - S$<br>PLATINUM INTERNATIONAL FD-C<br>AMP CAP ENH INDEX INTL S-W<br>VANGUARD AUST SHARE INDEX<br>CFST FCWI-FIRSTCHOICE AU SHR<br>AUMP-FUT DIRECT CORE INTL-A<br>VANGUARD INTL SHARES IDX-ORD<br>CFST FCWI-FIRSTCHOICE GLB SH<br>PLATINUM ASIA FUND-C |