This study concludes that Asian investors would benefit from greater global diversification.

International diversification may reduce sector and security concentration.

Over the long-term, international diversification can reduce return volatility, losses and risk.
Investors worldwide exhibit a strong bias towards investments in their home market. This bias can result in investment concentration and introduce unnecessary and unrewarded risks into a portfolio. International diversification can reduce sector and security concentration, and portfolio return volatility. When judged over the long-term, international diversification can reduce volatility, decrease losses and generally decrease investment risk. When investing internationally, investors should consider the impact of currency returns on investment returns. This paper discusses why we recommend that Asian investors should consider increasing their allocation to international equities.

**Home bias in Asia**

Typically, when making asset allocation decisions, investors favour domestic over international markets. This is true in the US, Europe, Australia and Asia.\(^1\) This preference for domestic securities is known as home bias. While the Asian equity markets (excluding Japan) make up approximately 8% of the global market, local investors allocate well in excess of this proportion to their local equity markets. As shown in Figure 1, we estimate that 41% of equity investments made in the Asia ex-Japan region are invested in local markets. Such a heavy overweight to the local market can have a large impact on the performance of an investment portfolio.

Prior Vanguard research (Philips, 2012) has investigated the factors that cause investors to overweight domestic securities. These include future return expectations, a preference for the familiar, corporate governance standards, the need to hedge domestic liabilities (if applicable), perceived global exposure through multinationals and currency risk. Although these factors influence investors to different degrees, we suggest that Asian investors should consider increasing their allocation to international equities.

**Figure 1. Asian investors favour local equity investments**

![Figure 1. Asian investors favour local equity investments](image)

Source: Equity market capitalisation figures are based on MSCI data. We use IMF Coordinated Portfolio Investment Survey and MSCI Market Capitalisation data to estimate Asian investment allocations. Rest of the world investment allocations are from the IMF Coordinated Portfolio Investment Survey. Asia ex-Japan investment allocations are calculated as the difference between MSCI market capitalisations and Inward Foreign equity investments (from the IMF Coordinated Portfolio Investment Survey) for each country. The reported figures are based on data for India, Malaysia, Thailand, South Korea, Singapore, Indonesia, Philippines and Hong Kong. Inward foreign direct equity investment data for China and Taiwan were unavailable.

\(^1\) For an in-depth analysis of the home bias, see Philips (2012).
The case for investing in global equities

Beyond the opportunity to invest across a broader market, global equities have, on average, diversified the returns of Asia ex-Japan equities over time. The reason is clear: Asia stocks are exposed to economic and market forces within Asia, while foreign-domiciled stocks offer exposure to a wider array of economic and market forces. These differing economic and market forces produce returns that can vary from those of Asia equities. Figure 2 shows that, all else being equal, an Asian investor should realise a diversification benefit from investing globally because the equity markets of other developed and emerging economies are less than perfectly correlated with the Asia ex-Japan equity market.

Given global exposure, how much?

The decision to invest globally is only the first step. The next step is to determine an appropriate allocation. The standard financial theory approach, whether for allocating globally or within a specific country or market, is to invest proportionally according to market capitalisation. This method assumes that markets are reasonably efficient and that stock prices reflect all the available information, investment positions and expectations of investors as a group. As shown in Figure 1, Asia ex-Japan equities currently make up approximately 8% of the global equity market. According to this theory, Asian investors would currently have 92% of their equity portfolio in equities outside of the Asia ex-Japan region, and this weight would fluctuate with market performance. However, due to home bias, Asian investors currently allocate 59% of their equity portfolio to international equities. The optimal allocation will vary based on investor preferences but would fall somewhere between a lower bound of 59% represented by home bias and an upper bound of 92% consistent with global market capitalisation.

This paper highlights the key points an investor should consider when deciding on the mix of local and international equities. Specifically, we discuss sector and security concentration, and portfolio volatility. We also explore considerations such as the long-term

Figure 2. Correlations of returns in Asian ex-Japan equity markets with the global equity markets

Notes: All countries are represented by local currency MSCI Indices. Calculations are based on monthly returns for the period July 1994 to June 2014.
Source: Vanguard calculations using data from FactSet.
effectiveness of international diversification and currency risk. Our analysis uses the regional MSCI Asia ex Japan Index to represent the homebias portion of an Asian investor’s portfolio.\(^2\) While the definition of the homemarket will vary across countries, this regional index gives a useful approximation of the local market characteristics. Where appropriate, we also use individual country data to provide a more detailed picture of investment portfolio characteristics.

**Sector concentration**

Asian investors maintain a large proportion of their equity allocation in domestically listed shares and across the broader Asia region in general. This results in a high level of sector concentration in these portfolios.\(^3\) Figure 3 compares the sector exposures of Asia ex-Japan equities to the global equity market. We see that relative to the global equity market, the Asia ex-Japan region is heavily exposed to the financials and information technology sectors.\(^4\) Because of this concentration, Asia ex-Japan equities are more sensitive to events in those sectors compared with the global market.

The Asia ex-Japan region is underweight in other industries as a consequence of being overweight in financials and information technology. Investors who focus solely on this region may find that their portfolio underweights sectors such as health care, energy and consumer staples. All of these sectors represent a significant part of the global economy, and importantly, offer diversification benefits for investors. A portfolio that has large exposures to specific sectors, at the expense of others, is exposed to unnecessary and unrewarded risks. By increasing international equity holdings, investors can reduce sector concentration and decrease the overall risk to their portfolios.

**Figure 3.** Asia ex-Japan sector weights relative to the global equity market

Note: Asia ex-Japan sector weights are derived from MSCI Asia ex Japan Index. Global equity market represented by MSCI All Country World Index. Source: FactSet, based on data available as at 30 June 2014.

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\(^2\) The Asia ex-Japan region is made up of India, Malaysia, Taiwan, China, Thailand, South Korea, Singapore, Indonesia, Philippines and Hong Kong.

\(^3\) See Zilbering and Kwon (2012) for a comparison of sector concentrations across international markets.

\(^4\) Similarly, the individual countries that make up the Asia ex-Japan region will be concentrated in specific sectors at the expense of others.
Security concentration

Just as Asian country indices have higher sector concentrations than the global equity market, they also have higher security concentrations. That is, rather than being diversified across a large number of companies globally, many investor portfolios are concentrated in a few large domestic or regional holdings.

Figure 4 measures security concentration by showing the proportion of a country or region represented by its top ten stocks. We can see that the least concentrated portfolio is the global equity market, where the top ten companies make up only 7% of its representative index. Security concentration is higher for the Asia ex-Japan region, which has 21% of its exposure in its top ten companies. Security concentration is even more pronounced for individual countries. The least concentrated country is India, with the top ten countries representing 44% of its index. Most countries in the Asia-ex Japan region have over half of their market concentrated in only ten stocks. When we compare regions and individual countries to the global equity market, it is clear that security concentration can be significantly reduced through broader international diversification.

Figure 4. International diversification decreases security concentration

![Chart showing security concentration](chart.png)

Note: Countries and regions are represented by their respective MSCI indices.
Source: FactSet, based on data available as at 30 June 2014.
Global diversification reduces security concentration

Figure 5 shows the top ten companies in the Hong Kong equity market and their respective weights. These ten companies make up approximately 61% of the Hong Kong market — AIA Group by itself is more than 16% of the market.

Consider the impact a fall in the price of AIA Group can have on an investor’s portfolio. Let’s assume an investor has 54% of their equity exposure invested in the Hong Kong market. Based on the figures reported in Figure 5, this investor would hold almost 9% of their equity portfolio in the AIA Group, as shown in Figure 6. In a scenario where AIA Group reports poor earnings, causing the stock price to fall 15%, the value of the entire portfolio will fall just over 1%. In such a concentrated portfolio, a single event specific to only one company can have a noticeable impact on the total portfolio return.

Compare this situation to that of a more diversified investor who invests in a global portfolio. The largest stock in the global market is Apple Inc., which has a weighting of 1.83%. If the stock price of Apple were to fall 15%, the impact at the portfolio level would be much smaller. In fact, the impact would be a fraction of a percent, or 0.27% to be more precise. By diversifying globally, investors can reduce security concentration and decrease the sensitivity of a portfolio’s returns to the volatility of individual securities.

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**Figure 5. Top ten holdings in the Hong Kong equity market**

<table>
<thead>
<tr>
<th>Company</th>
<th>Market weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIA Group Limited</td>
<td>16.06</td>
</tr>
<tr>
<td>Hutchison Whampoa Limited</td>
<td>7.18</td>
</tr>
<tr>
<td>Cheung Kong (Holdings) Limited</td>
<td>6.33</td>
</tr>
<tr>
<td>Hong Kong Exchanges &amp; Clearing Ltd.</td>
<td>5.98</td>
</tr>
<tr>
<td>Sun Hung Kai Properties Limited</td>
<td>5.94</td>
</tr>
<tr>
<td>Galaxy Entertainment Group Limited</td>
<td>4.75</td>
</tr>
<tr>
<td>Sands China Ltd.</td>
<td>4.33</td>
</tr>
<tr>
<td>CLP Holdings Limited</td>
<td>3.86</td>
</tr>
<tr>
<td>Hong Kong &amp; China Gas Co. Ltd.</td>
<td>3.41</td>
</tr>
<tr>
<td>Hang Seng Bank, Limited</td>
<td>3.18</td>
</tr>
</tbody>
</table>

Note: Weights are derived from MSCI Hong Kong Index.
Source: FactSet, based on data available as at 30 June 2014.

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**Figure 6. Security concentration: The average MPF investor**

Sources: Mandatory Provident Fund Schemes Statistical Digest (2014); FactSet, based on data available as at 30 June 2014.

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5 Data reported in the Mandatory Provident Fund Schemes Statistical Digest (2014) indicate that, in aggregate, Hong Kong investors allocate 54% of their equity exposure to the Hong Kong market.
Reducing portfolio volatility

The primary reason for international diversification is to reduce portfolio risk. International portfolios are more effectively diversified across securities and sectors, and generally exhibit lower levels of volatility than portfolios concentrated in either regional or domestic markets. This is the case even for the world’s largest equity market, the US.

By increasing exposure to international equities, many investors can reduce portfolio return volatility. Figure 7 compares the volatilities of global and Asia ex-Japan equity markets. It shows that, for most of the last 20 years, the volatility of the global market has been lower than that of Asia ex Japan. An investor who avoids or limits international diversification is taking on additional risk that may not be rewarded with higher returns.

Figure 8 compares the volatility of various indices over the past 20 years. The World Index, diversified across in excess of 8,500 securities, has the lowest volatility. The Asia ex Japan Index has higher volatility than the World Index, while the individual countries have higher volatility again. Over the long-term, investors that focus on individual countries will experience higher levels of portfolio return volatility than those who invest in regional or global indices. By increasing allocations to international equities, investors can reduce portfolio risk and portfolio return volatility.

Figure 7. International diversification persistently results in lower volatility

![Graph showing the rolling 12-month standard deviation of returns for Asia ex-Japan and global equity markets from May 1995 to June 2014.]

Source: Morningstar, based on data available as at 30 June 2014.

Figure 8. International diversification decreases long-run volatility

![Bar chart showing the annualised standard deviation of returns for various indices from 1994 to 2014.]

Source: MSCI, based on data available as at 30 June 2014.
Evaluate diversification over the long-term

During the Global Financial Crisis (GFC), the benefits of diversification were challenged by some critics. Equity market losses experienced during this time affected global markets — international diversification did little to protect investors from experiencing losses on their equity investments. It is important, however, to judge the benefits of diversification over the long-term.

Figure 9 compares the historical losses experienced by the Asia ex Japan to those of global equity market. We can see that losses experienced during the GFC were similar for the two portfolios — international diversification did little to stem the losses experienced during this period. Examining the entire series, however, we can see that international diversification has been very effective in mitigating losses. During the Asian Financial Crisis, the Asia ex-Japan equity market experienced losses of just over 60%. At the same time, global equities experienced significantly smaller losses of approximately 15%. The losses sustained on global equities were not only much smaller, but the recovery from these losses came much faster. Global investors recovered their losses within a few months, while it took almost two years for Asia ex-Japan equities to recover from their low. During the turmoil experienced during the Asian Financial Crisis the benefits of global diversification were very clear. In the short-term, international diversification may not always reduce volatility. However, when evaluated over the long-term, it is effective at reducing losses and mitigating risk.

Currency risk

The returns on international investments can be affected by foreign currency movements. Foreign currency can impact both the return and risk of an investment portfolio. As shown in Figure 10, currency movements may contribute to, or detract from, investment returns. For example, in 2013, currency movements detracted approximately 2.5% from the global equity returns of Hong Kong investors, but added 6.4% for Thai investors.

The impact of currency movements on total portfolio volatility can vary over time. At times, currency exposures can act as a diversifier, reducing total portfolio risk. In other periods, however, currency exposures can contribute to total portfolio risk. This is due to the correlation between equities and currencies changing over time. Because of the changing relationship between currency and equity market returns, the impact of currency hedging is unclear.

Figure 9. International diversification reduces the severity of losses over the long-term

![Cumulative index losses](image)

<table>
<thead>
<tr>
<th>Year</th>
<th>MSCI Asia ex Japan Index</th>
<th>MSCI All Country World</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>-70</td>
<td>-70</td>
</tr>
<tr>
<td>1996</td>
<td>-60</td>
<td>-60</td>
</tr>
<tr>
<td>1998</td>
<td>-50</td>
<td>-50</td>
</tr>
<tr>
<td>2000</td>
<td>-40</td>
<td>-40</td>
</tr>
<tr>
<td>2002</td>
<td>-30</td>
<td>-30</td>
</tr>
<tr>
<td>2004</td>
<td>-20</td>
<td>-20</td>
</tr>
<tr>
<td>2006</td>
<td>-10</td>
<td>-10</td>
</tr>
<tr>
<td>2008</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2010</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>2012</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>2014</td>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>

Note: Vanguard calculations based on monthly MSCI Asia ex Japan Index and MSCI All Country World Index data for the period of August 1994 to July 2014. Source: Factset.

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6 The GFC had a large impact on US and European equity markets, reducing the benefits of diversification for Asian investors during this period.
7 LaBarge et al. (2014) explore the topic of currency hedging in more detail.
Summary

Many Asian investors allocate a large proportion of their equity holdings to the Asia ex-Japan region. We recommend that investors increase their allocation to international equities to better diversify their portfolios. As previously stated, Asian investors currently allocate 59% of their equity portfolio to international equities when financial theory suggests an upper limit of 92% based on global market capitalisation. The optimal allocation will vary based on investor preferences but would fall somewhere between a lower bound of 59% represented by home bias and an upper bound of 92% consistent with market capitalisation. A higher allocation to international equities can reduce sector and security concentration, and reduce portfolio return volatility. In combination, these factors can reduce portfolio risk.

When investing internationally, it is important for investors to judge the effectiveness of diversification over the long-term. While international diversification may not reduce losses in some environments, over the long-term, international diversification has resulted in lower volatility, smaller losses and faster recoveries from losses. When investing in international equities, investors should consider the implications of currency risk on their portfolio.
References


