Asia Pacific Market Report

Asia Pacific Equities in a Correlated World

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Introduction

The 2008 financial crisis put global markets into a volatile "risk-on / risk-off" swing, where investors have been driven by two opposing views of the future. When people worry about recession or deflation, their risk aversion goes up and they shift to low-risk assets, thus hurting risky assets like equities. In contrast, when people expect a recovery or inflation, their risk aversion goes down and they shift into high-risk assets.

This binary attitude results in a high degree of synchronization among the movements of different markets, thus causing a high degree of correlation. High levels of correlation may point to a common source of risk across all markets. Under these conditions, the higher the market correlation, the higher the portfolio volatility.

This risk-on / risk-off climate has been with us for five years and investors are looking for ways to handle the correlated swings in global markets. In this paper, we examine these high correlations and see if they affect the Asia Pacific markets (ex-Japan). Barra regional models are used to gauge correlations among Asia, the U.S. and Europe, focusing on how Asia Pacific equities may be contaminated by global risk-on / risk-off swings.

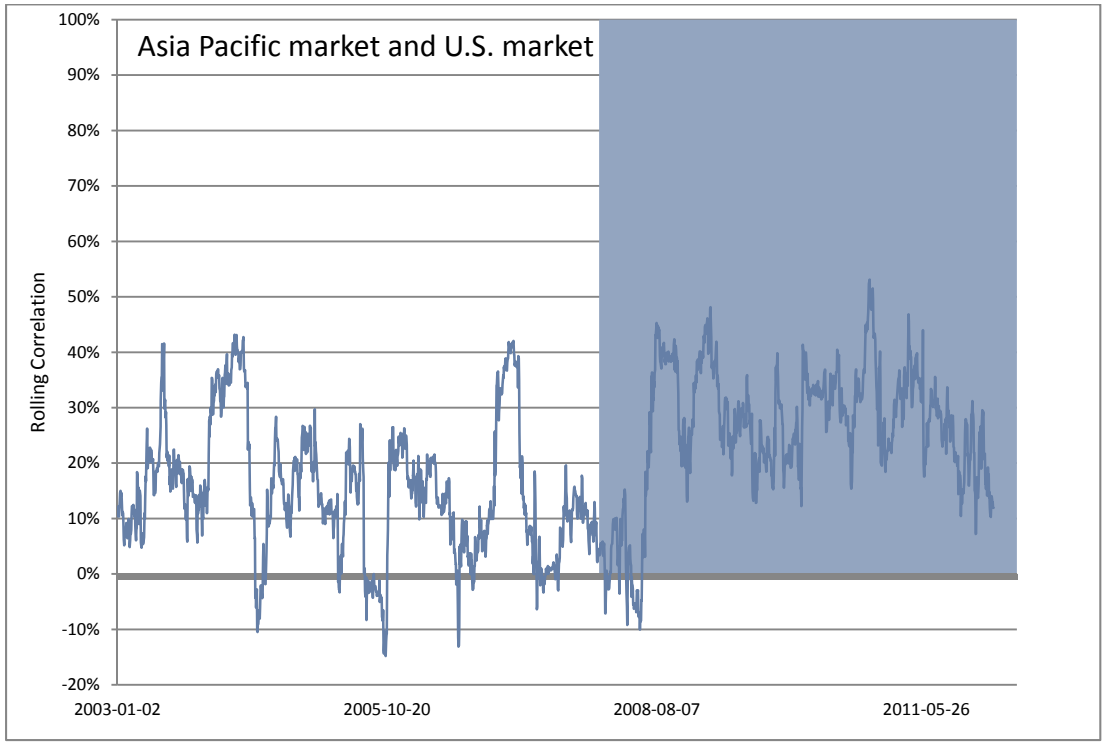
Rising Correlations

While the economies in Asia Pacific have kept growing, there has been slow growth in the U.S. and austerity in Europe. Given its growth status, can we expect the Asia Pacific market to be exempt from the risk-on / risk-off asset allocation?

In Figure 1 through Figure 3, correlations of market returns have been compared between the pre-crisis and post-crisis periods. The cross-market rolling correlation tracks the strength of the common price component.[1]

Notice that the cross-market rolling correlations were pushed high and have remained high since the 2008 financial crisis. The pre-crisis correlation between Asia and U.S. fluctuated around zero, while the post-crisis correlation leaped into positive territory and remained there. Similarly, the rolling correlation between U.S. and Europe has steadily risen and has almost doubled after the crisis. Today it is up to an all-time high of 86 percent. In contrast, the relationship between Asia Pacific and Europe resembled an expanding sine wave, suggesting more volatility in the correlation.

Figure 1: Correlations of Market Returns: Asia Pacific and the U.S., Pre-Crisis versus Post-Crisis.



[1] The region/country factors of three Barra equity models are used to calculate daily returns of three regional markets. Daily returns of Asia Pacific markets are estimated with the Barra Asia Pacific Equity Model ex Japan (ASE1SXJP) and MSCI All Country (AC) Asia Pacific ex Japan Index. Daily returns of the U.S. market are estimated with Barra U.S. Equity Model (USE4S) and the MSCI USA Index. Daily returns of Europe markets are estimated with the Barra Europe Equity Model (EUE3S) and the MSCI Europe Index. All the three regional returns are denominated in USD.

Figure 2: Correlations of Market Returns: Asia Pacific and Europe, Pre-Crisis versus Post-Crisis.

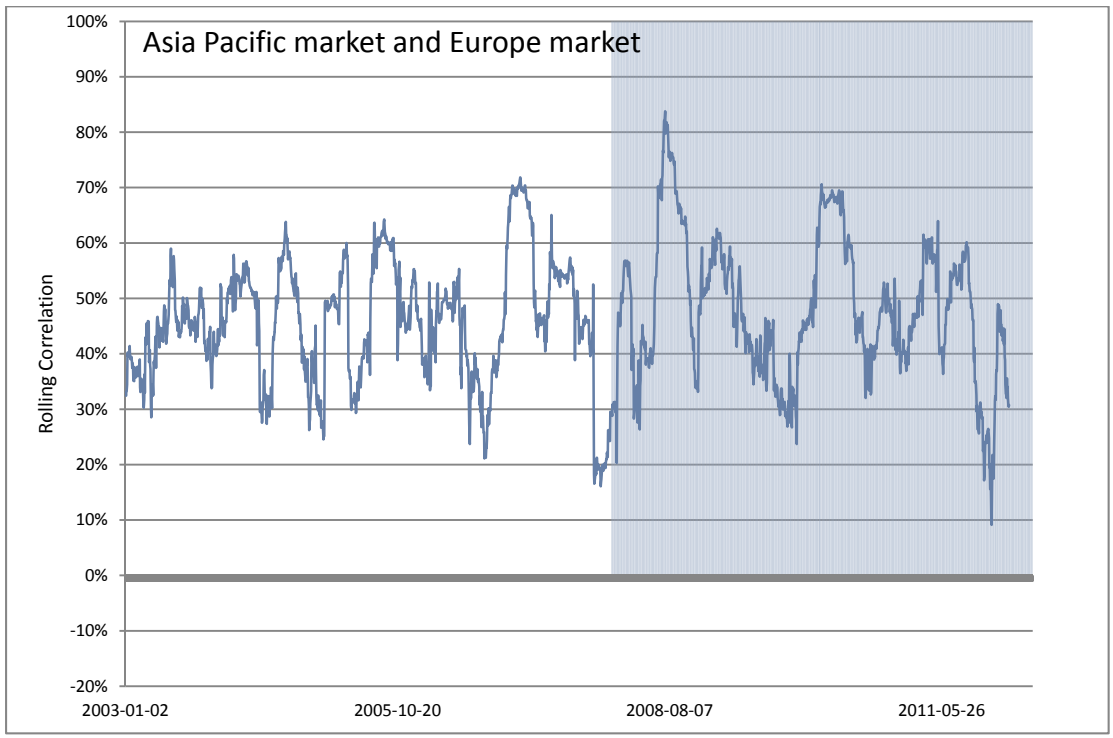
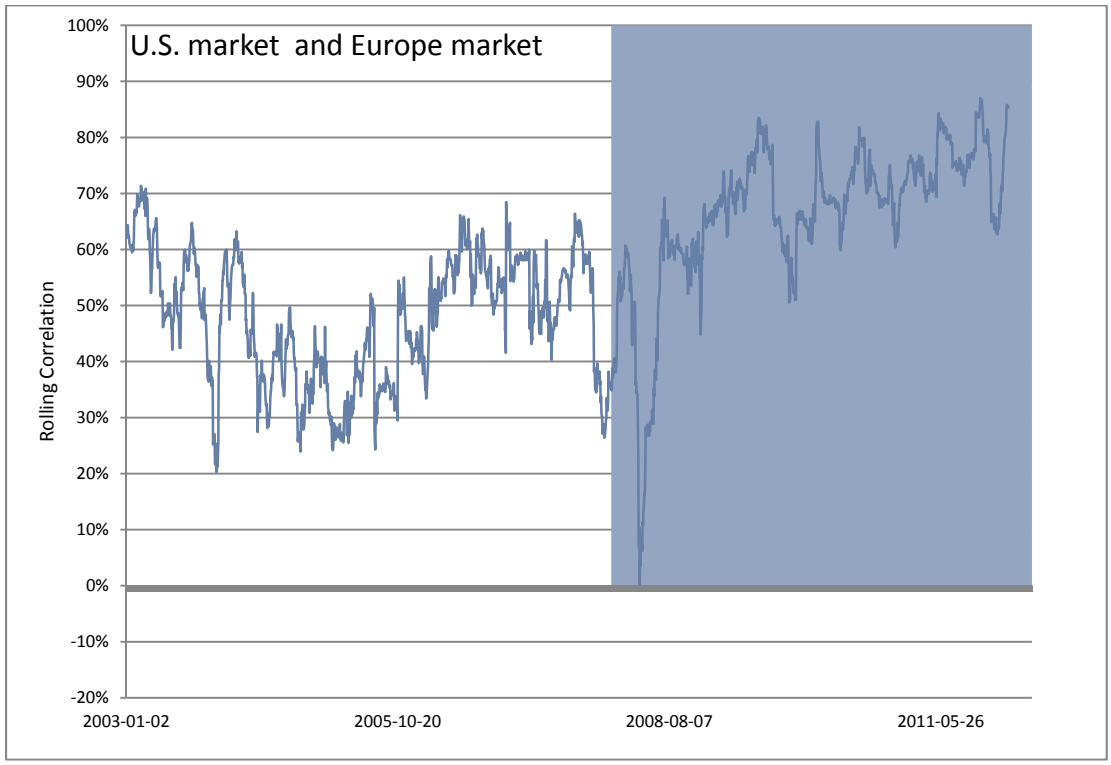


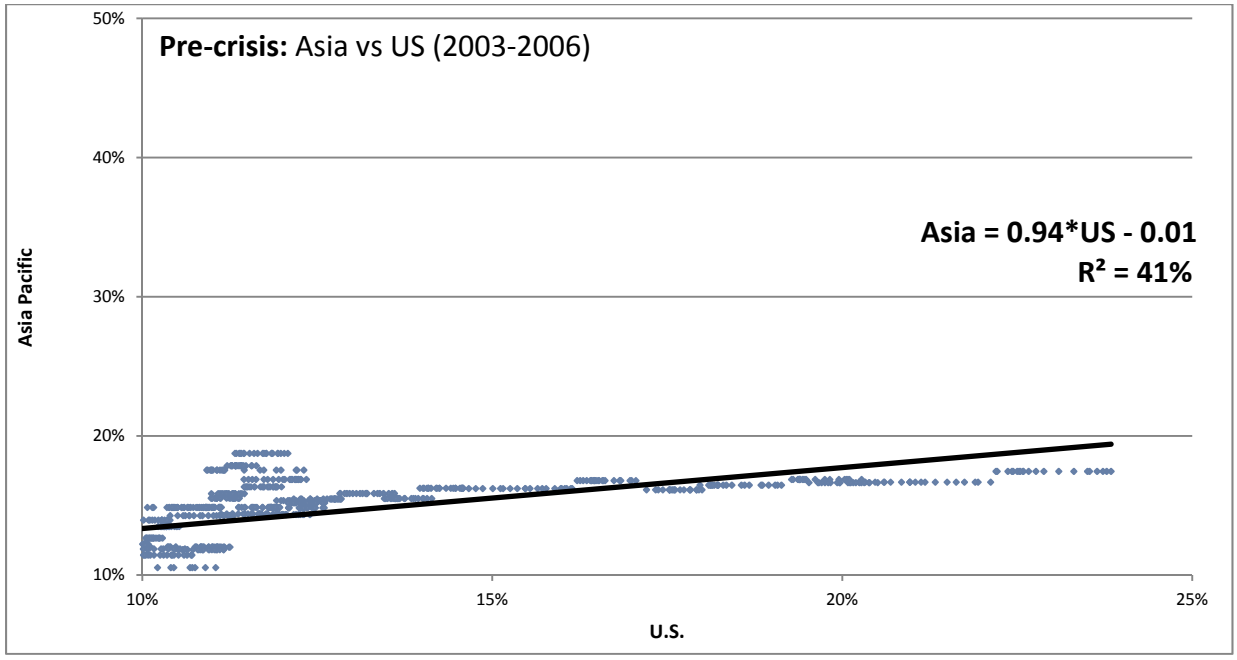
Figure 3: Correlations of Market Returns: the U.S. and Europe, Pre-Crisis versus Post-Crisis.



These higher levels of the post-crisis correlation suggest that the returns from Asia Pacific markets have become increasingly similar with the U.S. and Europe.

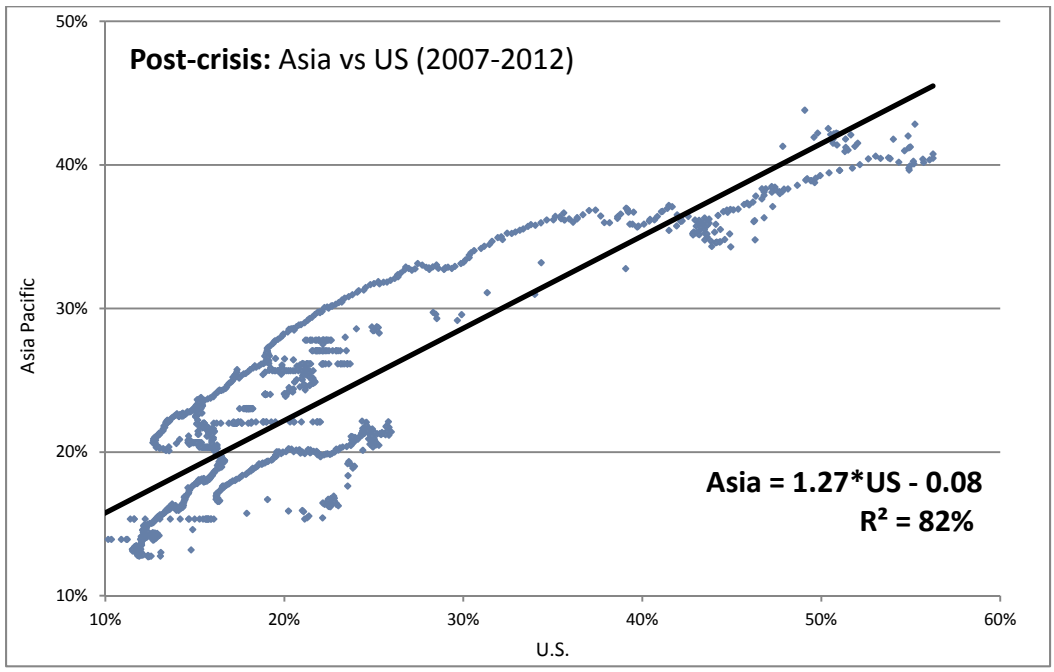
Relative to market returns, macro volatility appears to be a more significant driver of stock correlations. Figure 4 through Figure 7 compares the correlation of market volatilities between the pre-crisis and post-crisis periods.[2]

Figure 4: Correlations of Market Volatilities: Asia Pacific and the U.S., Pre-Crisis.



[2] Daily volatilities of region/country factors are calculated across three regional markets. Daily volatilities of Asia Pacific market are estimated with Barra Asia Pacific Equity Model ex Japan (ASE1SXJP) and MSCI AC Asia Pacific ex Japan Index. Daily volatilities of U.S. market are estimated with Barra U.S. Equity Model (USE4S) and MSCI USA Index. Daily volatilities of Europe market are estimated with Barra Europe Equity Model (EUE3S) and MSCI Europe Index. All the three regional volatilities are denominated in USD.

Figure 5: Correlations of Market Volatilities: Asia Pacific and the U.S., Post-Crisis.



In the volatility landscape, the Asia Pacific market has become far more correlated with the U.S. and Europe after the financial crisis. Correlations before the crisis were not impressive, with R-squares at 40 percent. After the crisis, however, the correlations increased, with R-squares rising to 80 percent. The results suggest that disparate equity markets have a much greater tendency to move together than before, and individual stocks are increasingly dominated by a common price component.

Figure 6: Correlations of Market Volatilities: Asia Pacific and Europe, Pre-Crisis.

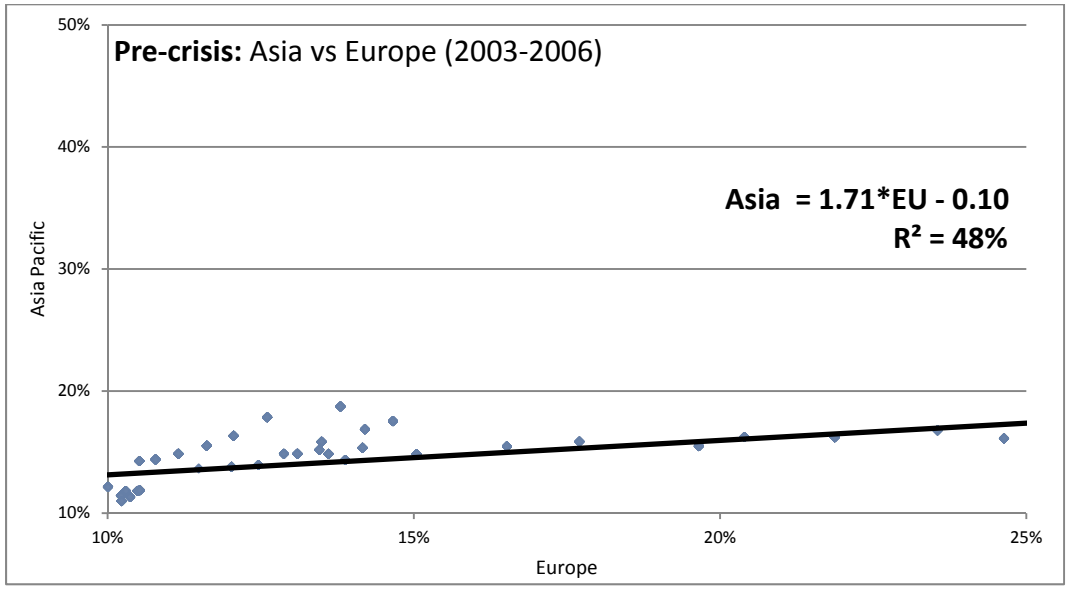
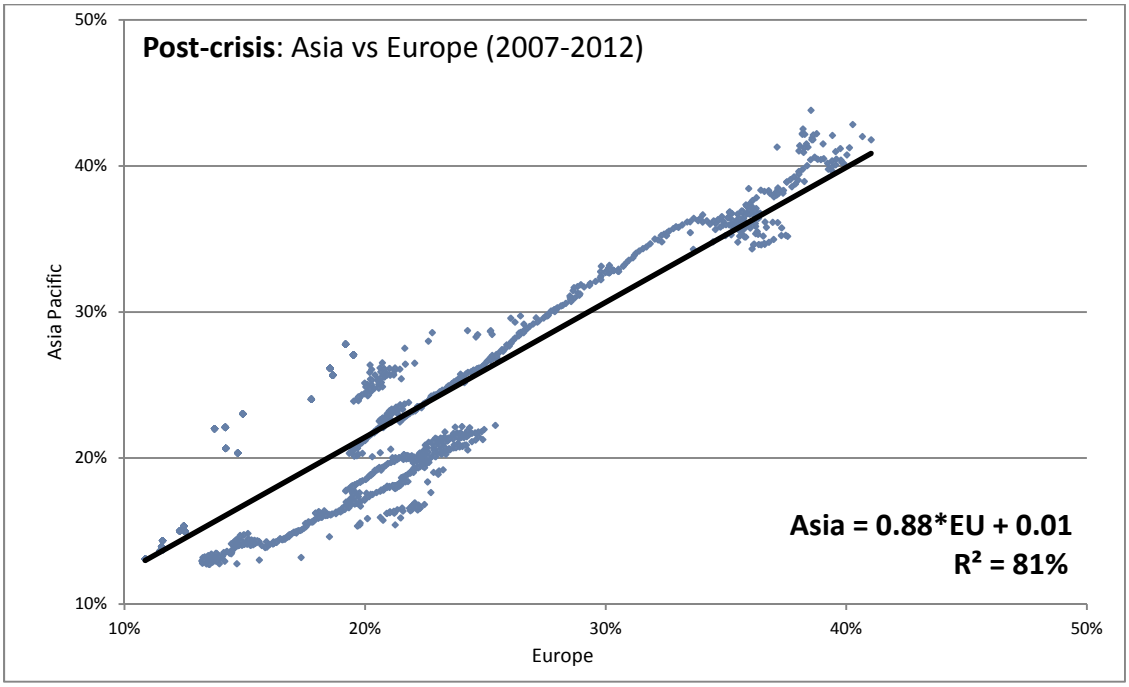


Figure 7: Correlations of Market Volatilities: Asia Pacific and Europe, Post-Crisis.



As shown in Figure 5, the U.S. market volatilities are not only mirrored in the Asia Pacific region, but even amplified by a factor of 1.27 in the post-crisis period. Similar to a high-beta stock, a more volatile market is likely to underperform in a down-market. In fact, the MSCI Asia Index did underperform the MSCI USA Index during the last five years. As the one growing economy in the world, the Asia Pacific region ends up much choppier than other regions trapped in recession. Why?

Asia has long been a fast-growing territory; paradoxically, that happens to be the source of its weakness, since the flip side of Asia's strength is its dependency on the demand of other markets. A severe balance-sheet recession dries up global demand, which exposes Asia's weakness. That explains how Asia Pacific exposures might become another "risk-on" manifestation despite its growth status.

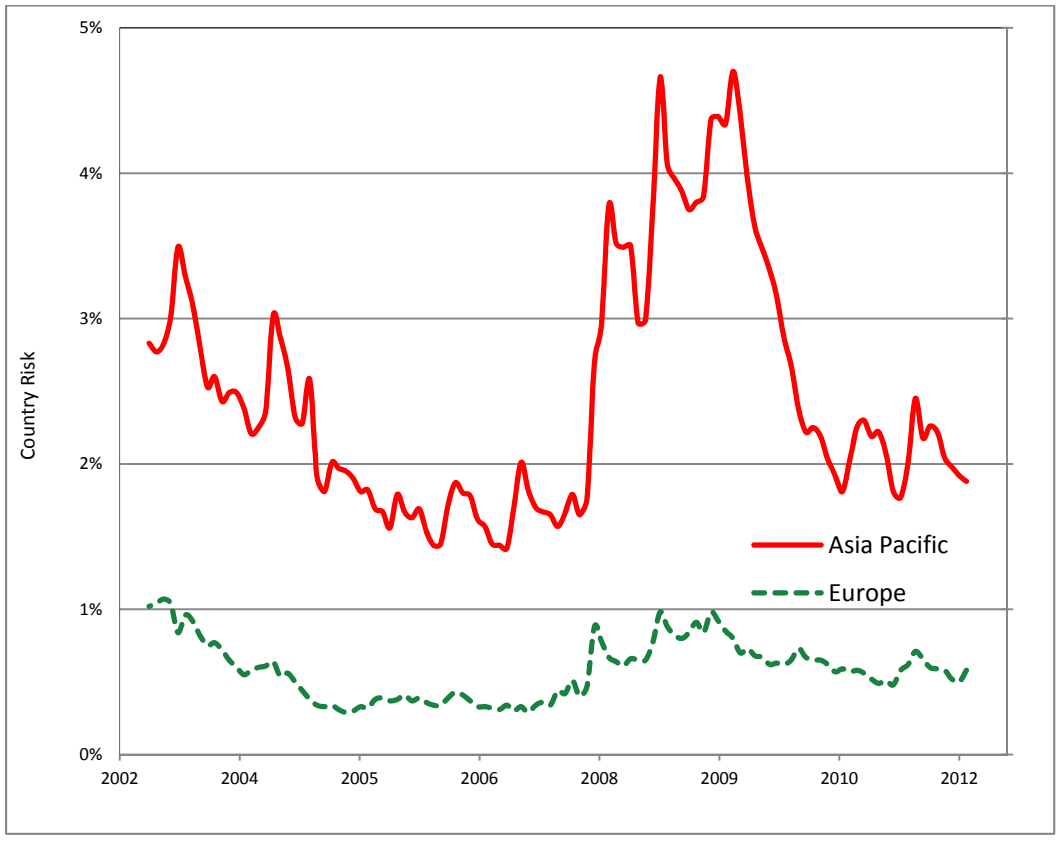
Country Diversification in Asia

Any stock has an exposure to macro risk and some stock specific alpha. An increase of cross-market correlation could deplete Asia-specific sources of returns. With all the markets behaving a similar way, many wonder: is there any Asia-specific return remaining? In fact, these returns are still available, and we can trace them through two distinct channels.

First, to what extent is Asia dominated by the global common price component? Asia's return correlation with other regions remains weak in comparison to other markets; the recent April 2012 figure highlights the point. As shown in Figure 1, Asia has a weak, albeit positive, relationship to the U.S. with a correlation in the low teens. By contrast, the correlation between the U.S. and Europe remains at an all time high of 85-86 percent.

Second, to what extent is Asia internally correlated? By comparing the country effect between Asia versus Europe markets,[3] we found that the benefit of country diversification is rich in Asia, but negligible in Europe. Figures 8 – 10 are illustrative.[4]

Figure 8: Country Risk: Asia Pacific and Europe.

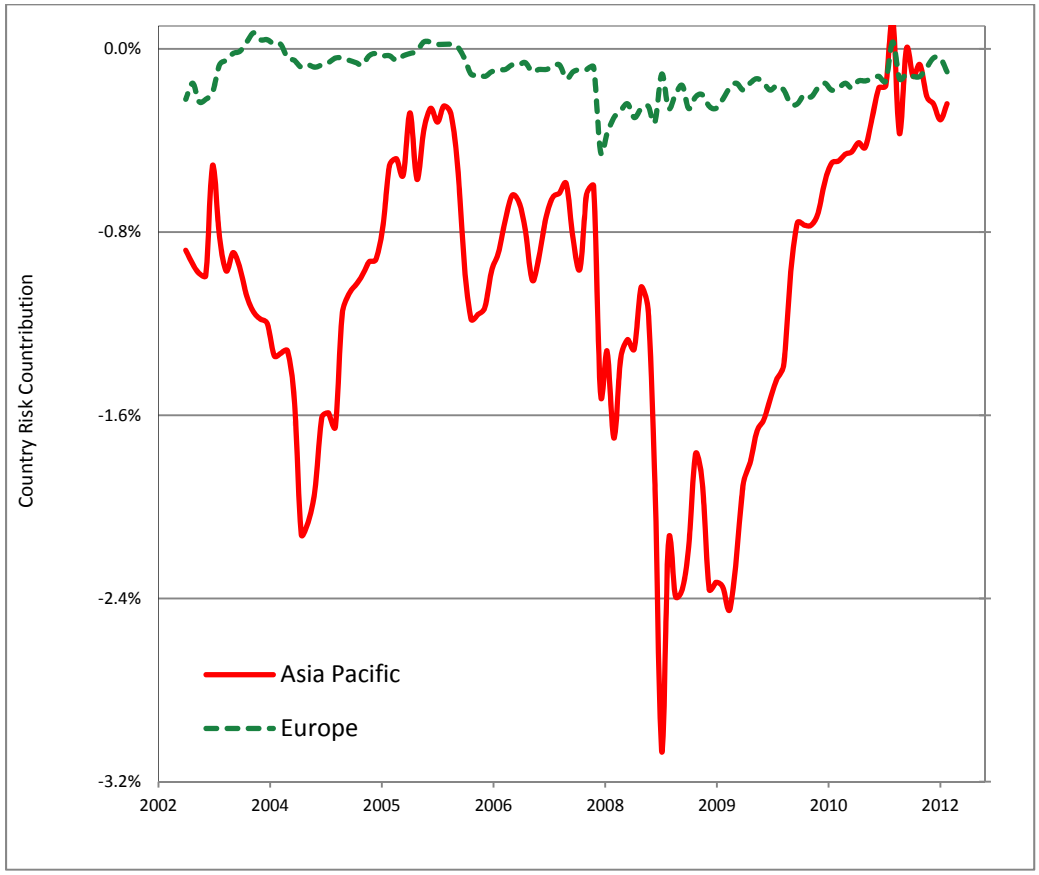


The first chart (Figure 8) shows that the Asia Pacific region has had much higher volatility of country factors than its regional counterpart in Europe. Higher country risk tends to have a larger size of country factor returns, indicating that a proper country allocation in the Asia Pacific market could be a built-in mechanism of risk reduction and return enhancement.

[3] The Barra Asia Pacific Equity Model ex Japan covers 14 countries (ASE1xJP) and the Barra Europe Equity Model include 29 countries (EUE3).

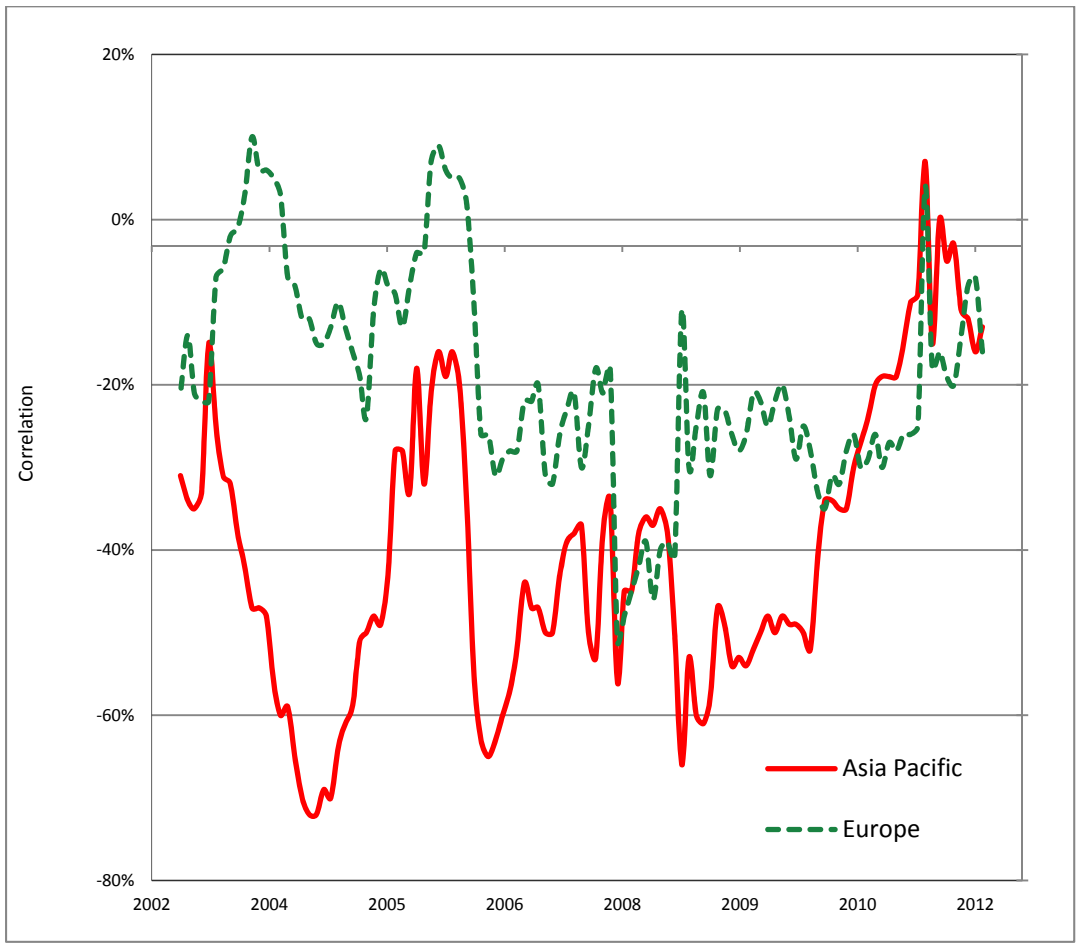
[4] Asia Pacific country volatilities, country risk contributions and correlations are estimated with Barra Asia Pacific Equity Model ex Japan (ASE1SJP) and the MSCI AC Asia Pacific ex Japan Index. Europe country volatilities, country risk contributions and correlations are estimated with Barra Europe Equity Model (EUE3S) and the MSCI Europe Index.

Figure 9: Risk Contribution of Country Factors, Asia Pacific versus Europe.



In the second chart (Figure 9), we see a negative risk contribution of country factors. The negative value of risk contribution confirms that diversification might benefit Asia Pacific investors through diverse country allocations. By contrast, such a diversification effect was negligible for Europe markets.

Figure 10: Correlation of Country Factors to the Underlying Market, Asia Pacific versus Europe.



Lastly, the third chart (Figure 10) tracks the source of diversification. The country-factor returns have a strong and negative relationship with the underlying market. In the Asia Pacific, such a negative correlation has remained steady over time – in a range of 40 to 60 percent – with only a brief dip into the high teens during the 2005 credit stress and the 2003 deflation fear. Even in late 2008 and early 2009, hammered by extreme market moves, the negative correlations stayed as high as 60 percent and the diversification benefits reached an historical high.

The negative correlation, however, collapsed to an all-time low of 10 percent since the second half of 2011, and so did diversification benefits. There could be two potential explanations. It could be a temporary dip, as it happened before, due to a massive repatriation of money back to Europe as a result of the eurozone banking crisis last year. It might also represent an early signal of major structural shift in the Asia Pacific region as the Chinese economy slows down.

Conclusion

Asset management has become more challenging with disparate markets moving in lockstep and swinging between risk-on and risk-off phases. An elevated cross-market correlation has even spilled over into an unlikely place – the Asia Pacific market.

Through the lens of the Barra regional models, we see that the Asia Pacific market tends to follow, and even amplify, U.S. market volatilities. However, this correlation does not diminish the market identity of the Asia Pacific region. In our study, the Barra models helped to uncover diversification benefits embedded in the country factors. Our analysis suggested that searching for Asia Pacific alpha has become more urgent, and challenging, as macroeconomics movements matter more and more in this correlated world.

Appendix: Monthly Asia Pacific Market Equity Watch

Market Environment

Figure 11: Performance and Risk Forecast, MSCI AC Asia Pacific ex Japan IMI, December 1994 – April 2012.

Figure 12: Performance and Risk Forecast, MSCI AC Asia Pacific ex Japan IMI, October 31, 2011 – 30 April 30, 2012.

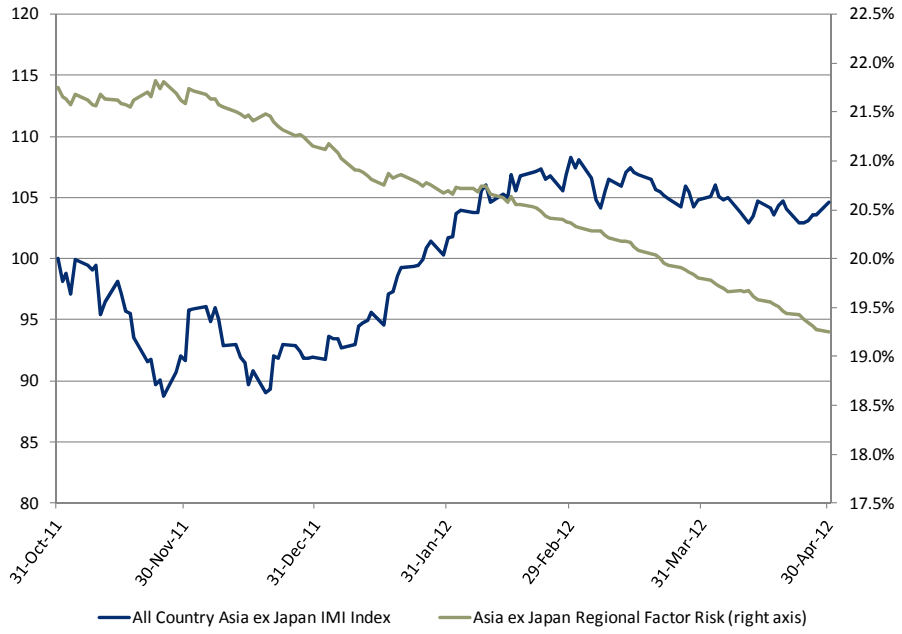


Figure 13: Risk Forecast for the Regional Factor, Asia Pacific ex Japan Model Long and Short Versions, December 1994 – April 2012.

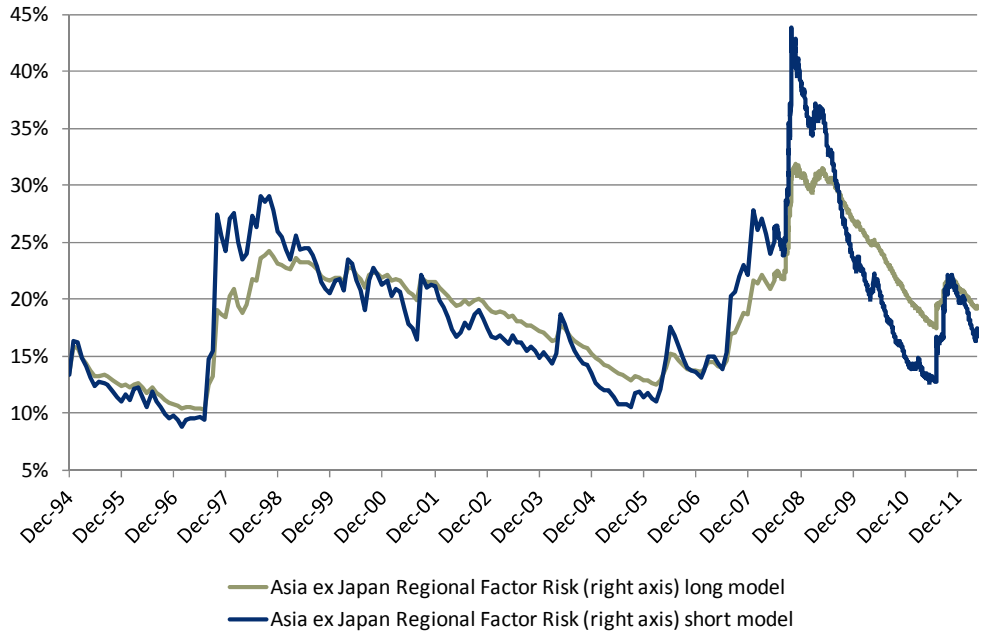


Figure 14: Risk Forecast for the Regional Factor, Asia Pacific ex Japan Model Long and Short Versions, 31 October 2011 – 30 April 2012.

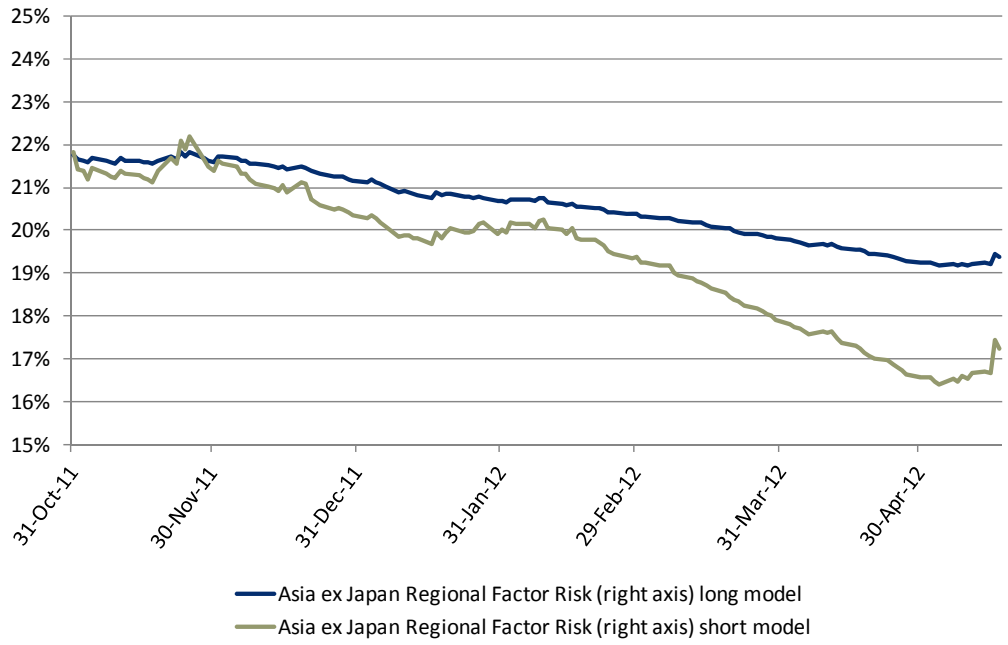


Figure 15: Risk Forecasts of the Five Most Risky Countries, ASE1XJP Model, December 1996 – April 2012.

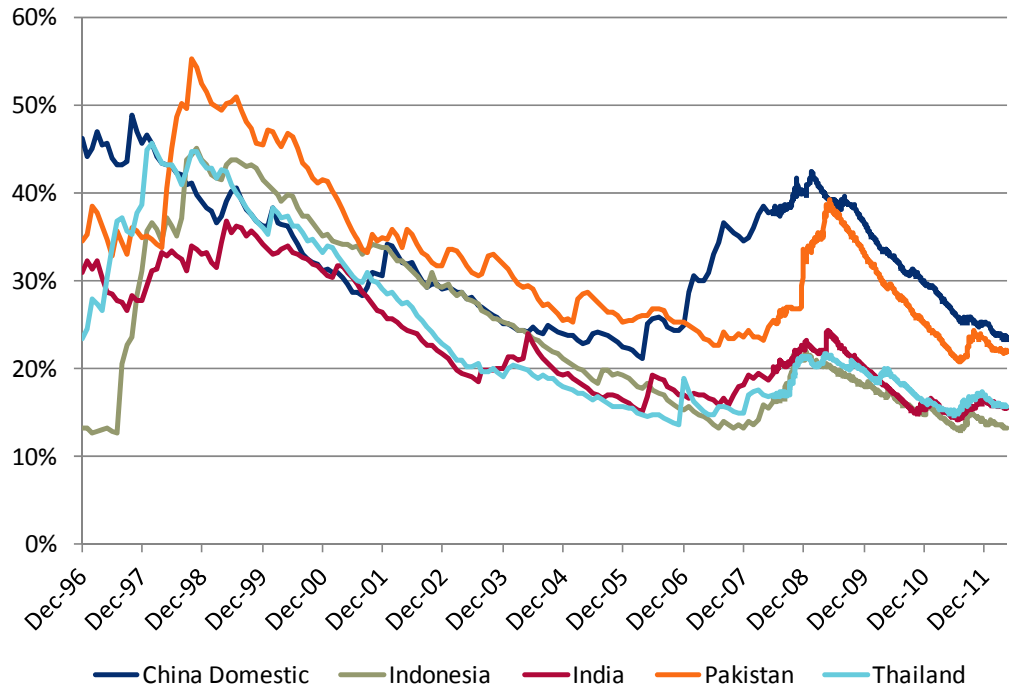
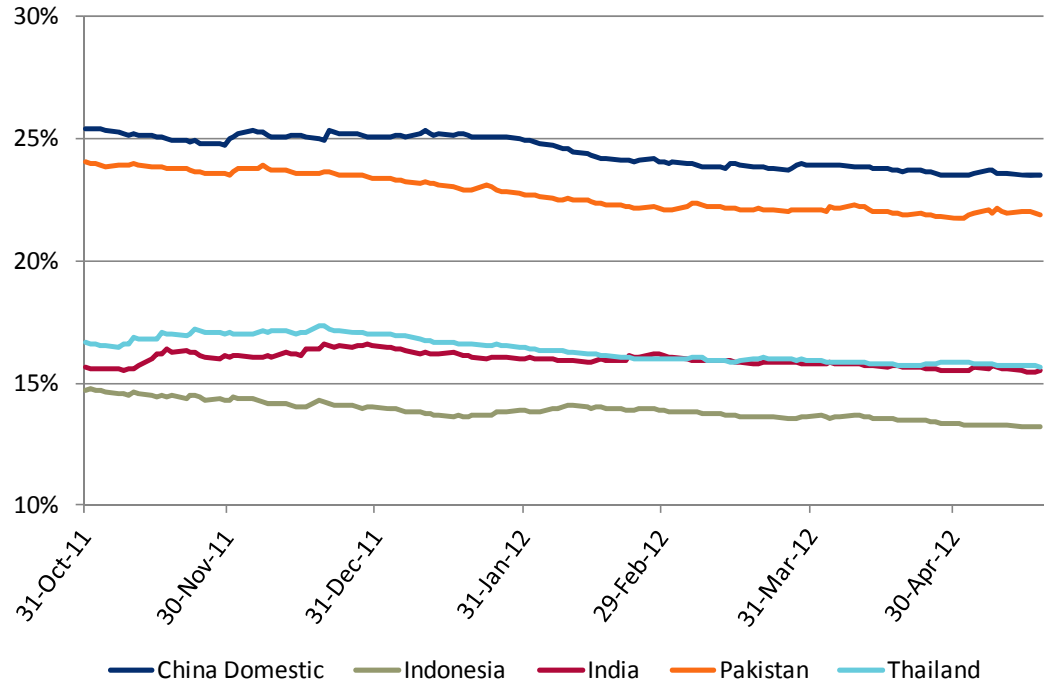


Figure 16: Risk Forecasts of the Five Most Risky Countries, ASE1XJP model, 31 October 2011 – 30 April 2012.



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[1] *As of June 30, 2011, based on eVestment, Lipper and Bloomberg data.*