

Axioma Insight

Quarterly Risk Review

Asia Pacific ex-Japan Edition

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For this issue we are tracking a few additional benchmarks and benchmark derivatives. In addition, for many regional benchmarks we are calculating risk in both the local currency and US dollars. Due to currency effects, these estimates can be quite different, as Table 1 illustrates. Most benchmarks saw their risk increase since the end of the third quarter, and risk estimates were substantially higher across the board than they were a year ago. For many of the benchmarks we track, however, risk peaked in October or November, and declined by the end of the year.

PIIGS, FTSE Europe, FTSE Eurobloc and the SP-ASX 200 denominated in USD showed the highest risk, joined by the Russell 2000. Among the European indexes, PIIGS and FTSE Eurobloc also appeared quite risky even in their home currency, whereas the non-Eurobloc indexes exhibited some of the lowest risk when denominated in EUR. Risk estimates in USD for many of these developed markets are also substantially higher than predicted risk in the same currency for the FTSE Emerging index, indicating the ongoing fragility of the markets. The SP-ASX 200 denominated in AUD, with one of the lowest risk estimates, stood in sharp contrast to the high risk of the same stocks in USD.

The death of Kim Jong Il in December, although big news in Asia and globally, did not seem to have any meaningful impact on risk forecasts for the Asia Pacific region, Japan or in emerging markets.

Fourth Quarter Highlights:

- Stock correlations eased a bit at year end and agreement among Axioma's four risk model variants increased, perhaps pointing to better times ahead for managers focused on individual stock selection.
- Benchmark risk continued to rise at the end of 2011. Eurobloc markets, especially PIIGS, led the pack in predicted risk, in both local and USD terms. Japan and Australia (in local currencies) had the lowest risk, joined by non-Eurobloc euro-denominated benchmarks (Table 1. Comparison of Benchmark Predicted Volatilities).
- While not in complete agreement, risk forecasts from Axioma's four model variants moved closer to each other at the end of 2011 relative to their peaks early in the fourth quarter (Figure 4). Statistical model forecasts remained below their fundamental counterparts, and short-term forecasts dropped significantly from above long-term forecasts to slightly below.
- A low volatility strategy would have been the best single-factor strategy for 2011 (Figure 8). A medium-term momentum strategy worked well through August, and a large-cap strategy fared well in the fourth quarter.
- We have added a new report to help investors determine what is driving the change in risk from one period to the next. This allows you to understand the impact of changes in portfolio composition, volatility and correlation. See Figure 7 for more detail.
- A decomposition of our statistical model showed that Japanese interest-rates, several credit spread variables, and the Purchasing Managers' Index (PMI) in several countries/regions were among those most highly correlated with our Asia ex-Japan statistical factors (Table 2).
- Asset-asset correlations climbed throughout most of 2011, although they retreated somewhat by the end of the year. Currency correlations were at or near record highs (Figures 10 and 13).

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Table 1. Comparison of Benchmark Predicted Volatilities¹

	Benchmark Predicted Volatility (%)			Change Vs.	
	Most Recent (30 Dec 2011)	Quarter Ago (30 Sep 2011)	Year Ago++ (31 Dec 2010)	Quarter Ago	Year Ago
North America					
Russell 1000	24.4	23.7	16.8	0.7	7.6
Russell 2000	31.2	29.4	21.6	1.8	9.5
FTSE North America	24.6	23.3	15.9	1.3	8.6
Europe					
FTSE 350					
GBP	23.8	23.4	16.6	0.4	7.2
USD	28.0	27.2	14.4	0.8	13.6
FTSE Eurobloc					
EUR	29.8	27.9	17.0	1.9	12.9
USD	36.5	34.6	23.1	1.8	13.4
FTSE Europe					
EUR	25.3	24.5	15.9	0.8	9.4
USD	31.1	30.1	21.1	1.0	10.0
FTSE Developed Europe					
EUR	25.1	24.4	15.8	0.6	9.2
USD	30.9	30.1	21.1	0.8	9.7
Non-Eurobloc*					
EUR	23.0	23.0	16.0	0.1	7.1
USD	27.8	27.3	20.1	0.5	7.7
Non-Eurobloc Developed**					
EUR	22.4	22.7	15.8	-0.3	6.7
USD	27.1	27.0	20.0	0.1	7.2
PIIGS***					
EUR	30.9	29.0	20.5	1.9	10.3
USD	37.9	36.2	26.8	1.6	11.1
Asia-Pacific					
FTSE Asia Pacific	24.2	21.7	13.9	2.5	10.3
Asia Pacific ex-Japan****	28.6	25.2	16.3	3.3	12.2
SP-ASX 200					
AUD	21.5	19.5	14.2	1.9	7.3
USD	34.5	32.3	22.6		
Japan+					
JPY	20.3	21.2	16.4	-0.9	3.9
USD	23.6	21.1	13.8	2.5	9.9
FTSE Developed	26.6	25.3	16.2	1.4	10.4
FTSE Emerging	28.1	25.0	17.8	3.1	10.3
FTSE-All World	26.6	25.0	16.4	1.5	10.2

All figures based on Medium-Horizon Fundamental risk model

* FTSE Europe minus FTSE Eurobloc

**FTSE Developed Europe minus FTSE Eurobloc

***Portugal, Italy, Ireland, Greece and Spain from FTSE Eurobloc

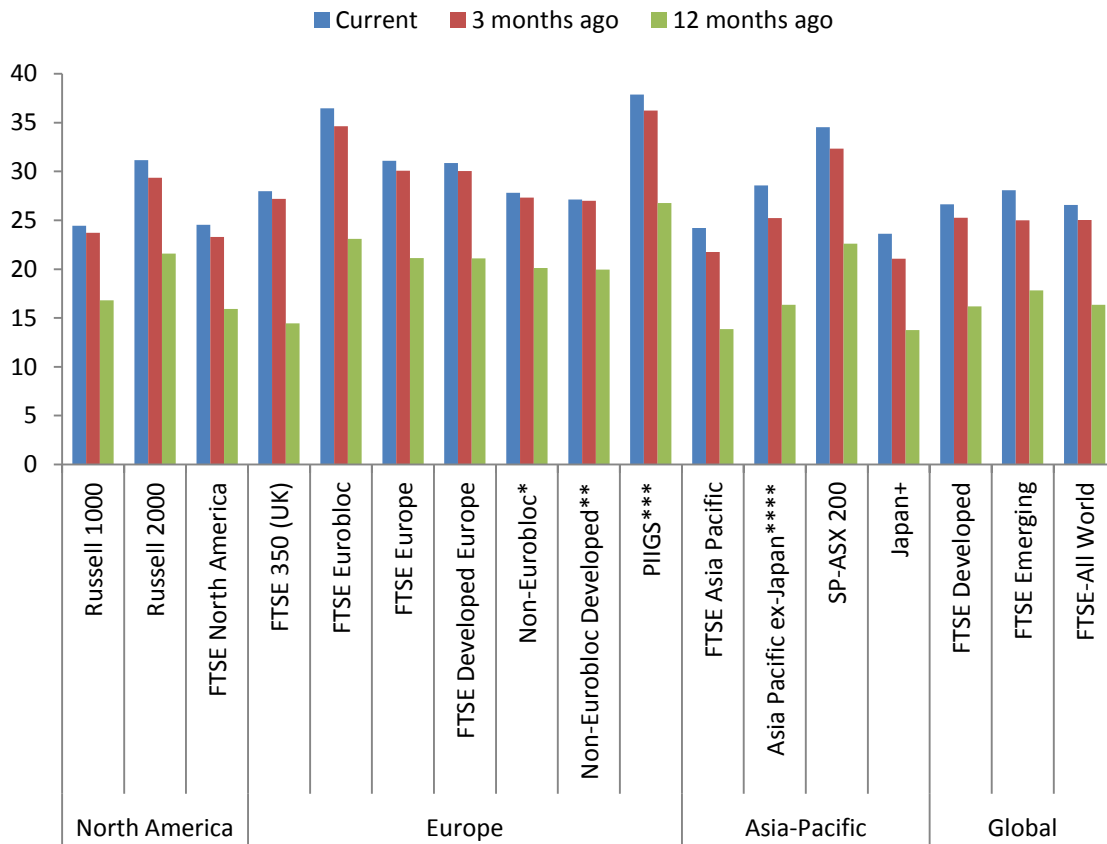
****FTSE Asia Pacific using Asia Pacific Ex-Japan Risk Model

+Russell Developed minus Russell Developed ex-Japan.

++ 30 December for Japan

Source: FTSE, Frank Russell, Standard & Poor's, Axioma Inc. All figures in USD unless otherwise noted.

Figure 1. Risk Forecasts (in USD) for Eurobloc and PIIGS Were By Far the Highest



All figures based on Medium-Horizon Fundamental risk model

* FTSE Europe minus FTSE Eurobloc

** FTSE Developed Europe minus FTSE Eurobloc

*** Portugal, Italy, Ireland, Greece and Spain from FTSE Eurobloc

**** FTSE Asia Pacific using Asia Pacific Ex-Japan Risk Model

+ Russell Developed minus Russell Developed ex-Japan.

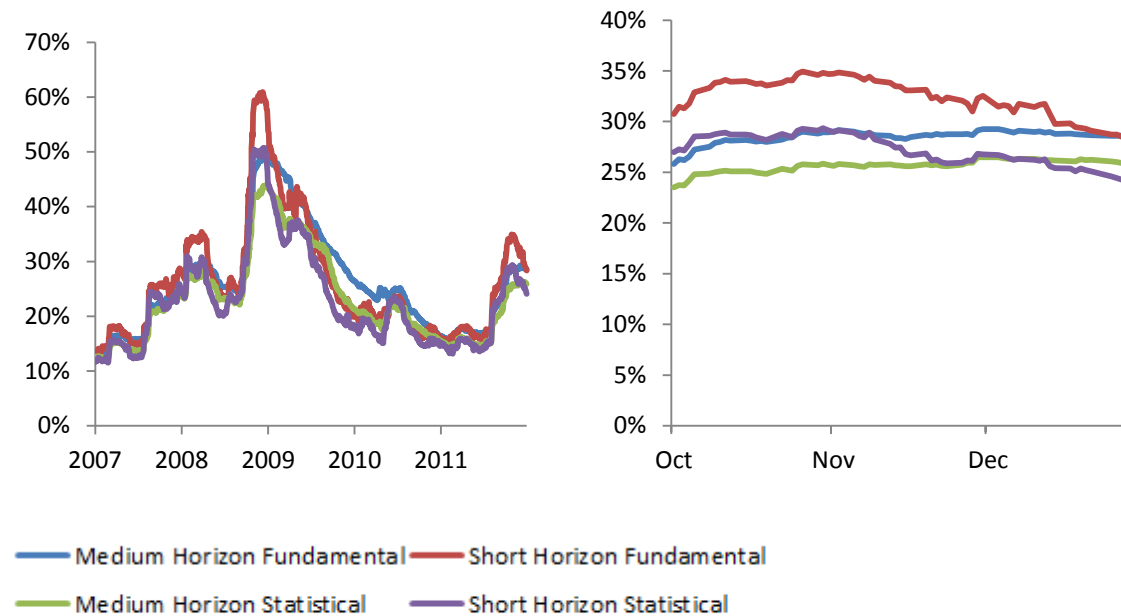
++ 30 December for Japan

Source: FTSE, Frank Russell, Standard & Poor's, Axioma Inc. All figures in USD unless otherwise noted.

Focus on Asia-Pacific ex-Japan

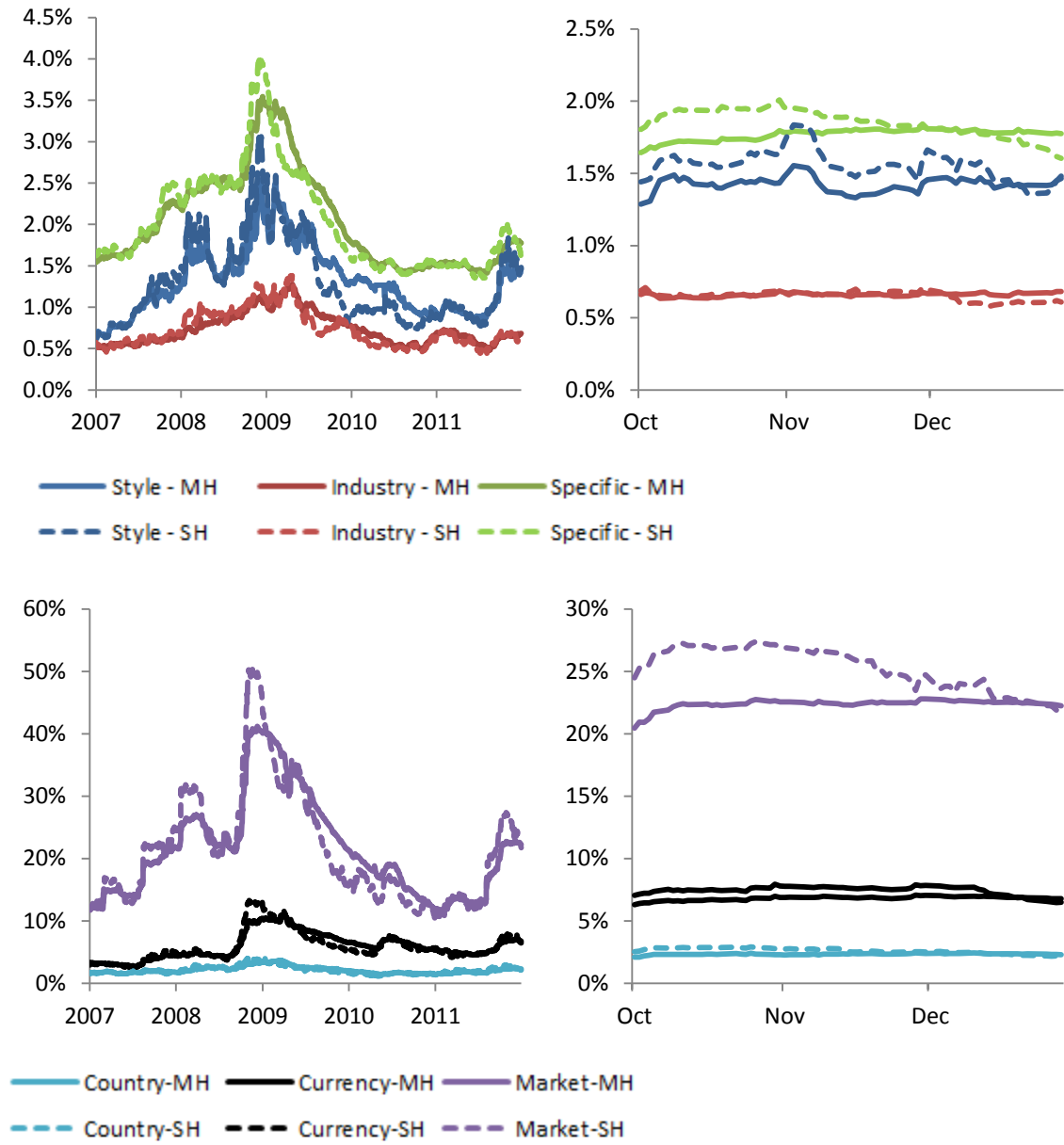
By the end of 2011, risk estimates for the FTSE Developed index had edged down from their highs at the beginning of October, but they remained well above their recent lows at the end of 2010 (Figure 2). In addition, estimates from Axioma’s four model variants were in more agreement than they were at the beginning of the fourth quarter. Most major components of risk remained fairly steady during the quarter, but we did observe a decline in short-term stock specific risk and, most notably, in short-term market risk (Figure 3).

Figure 2. Asia Pacific Ex-Japan, Risk Characteristics, Last Five Years and Most Recent Three Months



Source: FTSE, Axioma, Inc.

Figure 3. Asia Pacific Ex-Japan Components of Risk



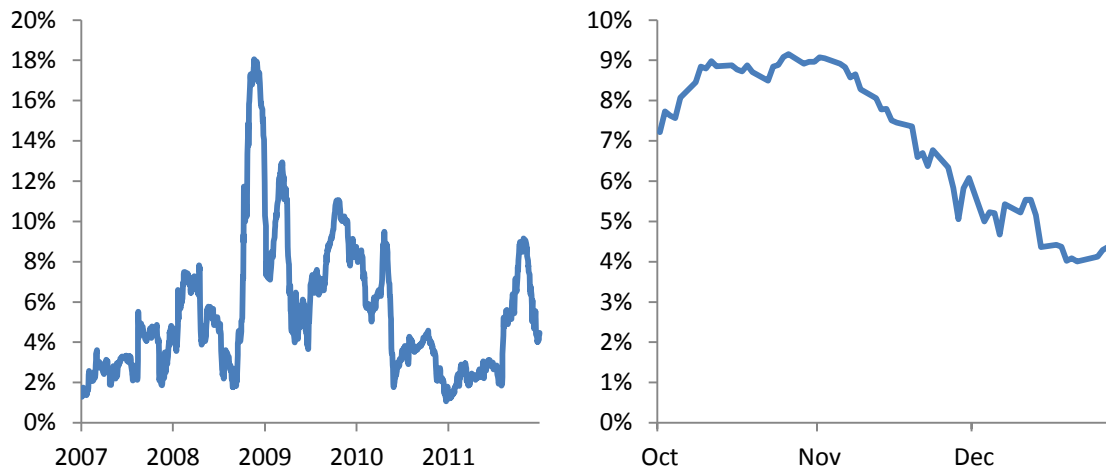
Source: FTSE, Axioma, Inc.

Differences in risk estimates are described further by risk *spreads*. The predicted risk spread measures the difference between the largest and smallest risk estimates from the four risk models (medium-term fundamental, medium-term statistical, short-term fundamental and short-term statistical). The higher the number, the larger the disagreement among models. Short-horizon models may lead their medium-horizon counterparts as risk changes, and statistical models may pick up new or different factors that are not detected by their fundamental counterparts.

In 2011, the risk spread reached a peak in early October, but declined sharply and steadily throughout November and December (Figure 4).

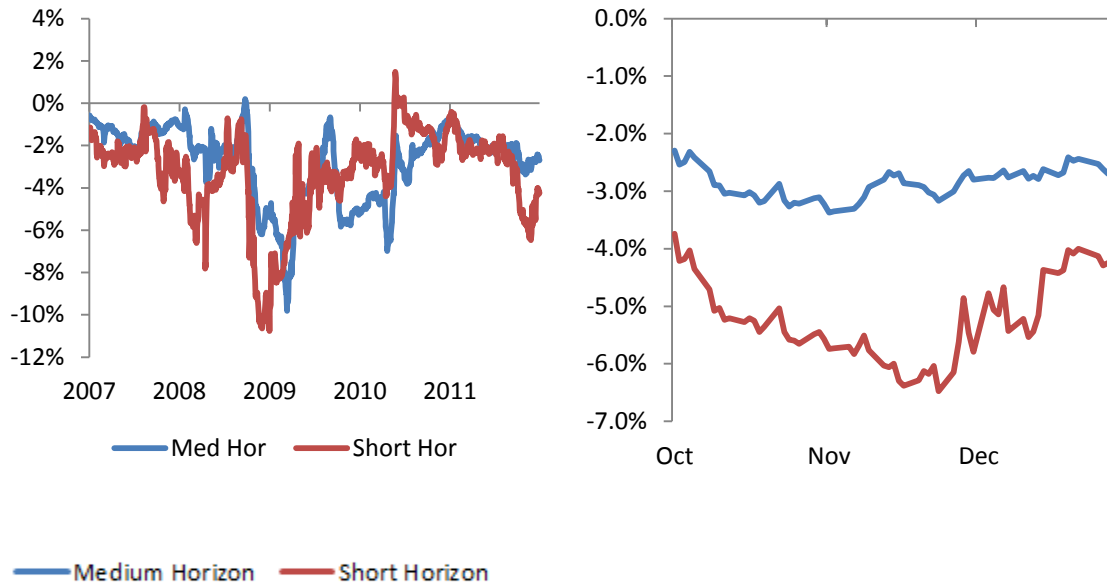
The statistical models have typically forecast lower risk for Asia ex-Japan than the fundamental models (Figure 5). That continued to be true during the fourth quarter, although the gap narrowed somewhat for the short-horizon models. The big change came from the short-medium spread. Whereas the short-horizon models forecast substantially higher risk than their medium-horizon counterparts at the beginning of the quarter, that difference narrowed steadily, and in fact the short-horizon variants ended 2011 with lower forecasts than the medium-horizon models (Figure 6).

Figure 4. Predicted Risk Spread: The Difference Between the Highest and Lowest Risk Estimates Based on the Four Model Variants



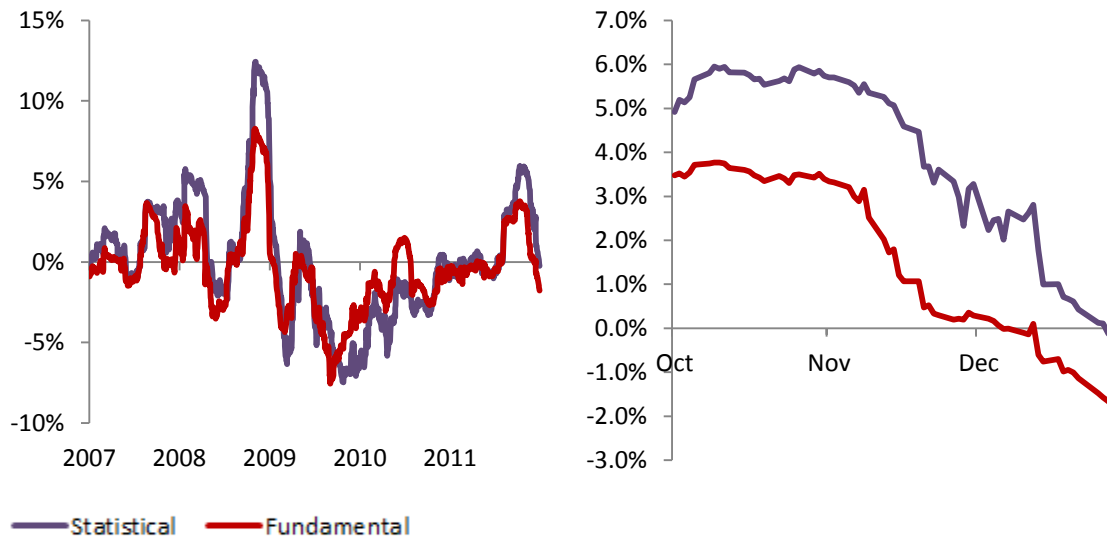
Source: FTSE, Axioma, Inc.

Figure 5. Statistical – Fundamental Spread



Source: FTSE, Axioma, Inc.

Figure 6. Short – Medium Spread



Source: FTSE, Axioma, Inc.

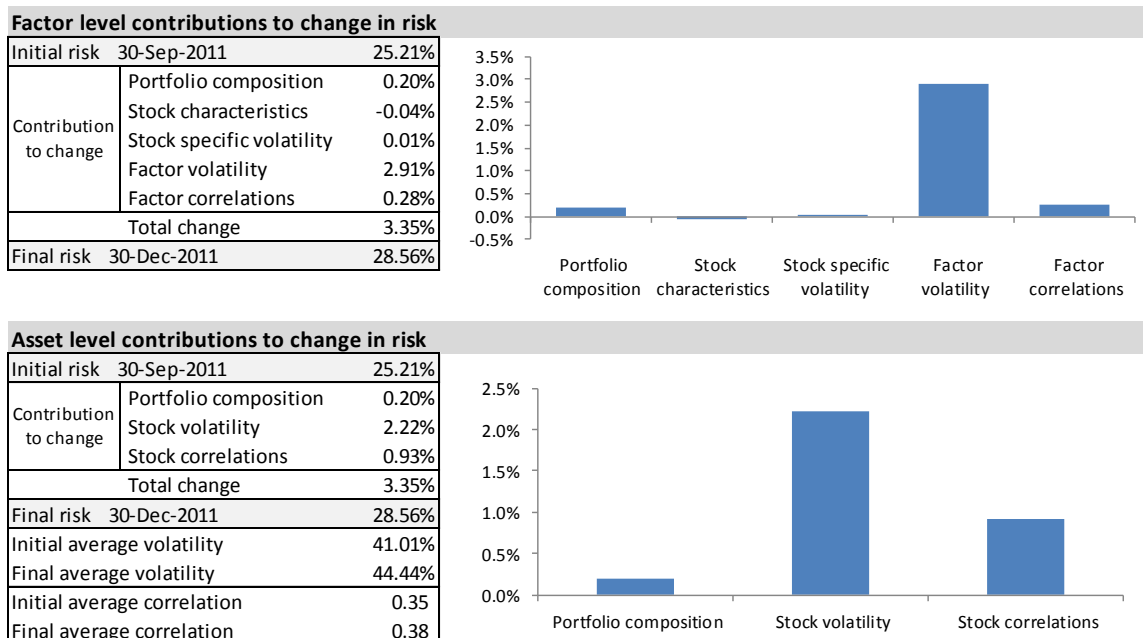
Change in Risk Decomposition

The issue of high stock-stock correlations has been front and center in the financial media and in Axioma’s own reporting for quite a while now. High correlation clearly has an impact on market risk, and below we aim to quantify that effect relative to other components of risk estimates.

To understand what is driving the change in risk for each benchmark we look at the contribution to change from each of the underlying components: portfolio composition/weights, portfolio stock characteristics, stock-specific volatility, factor volatility and factor correlationsⁱⁱ. The overall impact of asset level correlations is not seen until we combine these components, so to see the impact of changes in stock correlations we also do decomposition of the full asset covariance matrix.

Figure 7 describes these changes in risk for Asia ex-Japan from the end of the third quarter to the end of the fourth. Increased factor- and asset-level volatility was the major source of the change in risk. Factor correlations had a slightly positive impact on the change in risk at the factor level. At the asset level, increased correlations had an even bigger impact.

Figure 7. Change in Risk Decomposition, Asia Ex-Japan



Macro Influences

One of the advantages of using a statistical factor model is that the structure of the model is not fixed, which allows for the possibility of significant transient factors that come and go over time. We monitor the correlation of the statistical factors with a number of macro variables to better understand the macro effects that are currently influencing the markets. Table 2 shows the absolute value of correlations between the statistical factors and macro variables, where the correlations are greater than 0.2 and above the 90% confidence level. Only the first five statistical factors are shown in this list. A complete list is available on request.

The first statistical factor, that which has the biggest influence on volatility, is essentially a market factor. Those factors correlated with the market – such as interest rates and credit spreads – have been consistent drivers of the statistical factors. Similarly, many of the style factors are correlated with the stat factors, and have been consistently throughout the year.

Interestingly, there is a strong correlation between the current stat factors and the Purchasing Managers' Index in Great Britain as well as the PMI in Australia and Europe. Risk in Asia is becoming increasingly linked with the state of the European markets, with European yields and economic indicators becoming more influential in the last quarter. Measures of volatility, especially the Axioma Volatility risk factor, have also had a strong influence throughout the year.

Table 2. Macro Influences on Asia Ex-Japan

Macro Variables		Current Stat Factors					Last Quarter Stat Factors					Last Year Stat Factors				
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Yield	US 1y yield															
	US 5y yield															
	US 10y yield															
	JP 1y yield															
	JP 5y yield	0.33					0.25									
	JP 10y yield	0.38					0.28									
	EU 1y yield						0.26									
	EU 5y yield			0.20												0.25
	EU 10y yield			0.25								0.21				
	US yield spread															
	JP yield spread	0.40					0.28									
	EU yield spread			0.25												
Credit	US TR CDI SPREAD	0.41		0.25			0.37				0.27	0.45				
	Itraxx Europe 3Y Spread	0.38		0.28			0.37				0.21	0.55				
	Itraxx Asia Ex Japan 5Y Spread	0.40					0.43					0.61		0.23		
Volatility	VIX	0.22					0.27				0.21	0.25				
	VSTOXX	0.26					0.21									
Commodity	GOLD (USD)											0.20				
	SILVER (USD)	0.26					0.29									
	OIL (WTI)(USD)											0.32				
	HSBC JC BASE METAL INDEX	0.24					0.29					0.30				
	CREDIT SUISSSE S&P GSCI SOFTs															
Economic	JAPAN CPI				0.74											
	UK CPI															
	US CPI															
	EURO CPI															
	US PMI											0.52				
	China PMI						0.59					0.59				
	AU PMI		0.55													
	GB PMI	0.74		0.75			0.61							0.57		
	EURO PMI		0.55						0.70							
	US ISM INVENTORY					0.57						0.62				0.56
OECD + Major Six NME													0.75			
Local Style	Exchange Rate Sensitivity					0.27					0.21	0.22				
	Growth	0.24														
	Leverage			0.35	0.23		0.40					0.28	0.27	0.23		
	Liquidity	0.45			0.27	0.24	0.45			0.33		0.42		0.38		
	Medium-Term Momentum															
	Short-Term Momentum	0.69					0.62					0.39				
	Size	0.31		0.38		0.24		0.28			0.29	0.29				
	Value			0.47	0.26			0.39	0.26			0.26				
	Volatility	0.88		0.25			0.85					0.87	0.23			

Source: Axioma, Inc.

Volatilities and Returns

Factor returns were substantially larger than average in October, some more than one standard deviation above and some the same magnitude below (Table 3). These large deviations settled down in November and December, corresponding with the decline in market risk.

For the full year, following a low volatility strategy would have been the most profitable among Axioma's style factors (Figure 8). While low volatility was faring well, so was a positive tilt on Medium-Term Momentum. Returns for both strategies were flat for the fourth quarter, when a large-cap strategy would have taken over as the best and most consistent performer.

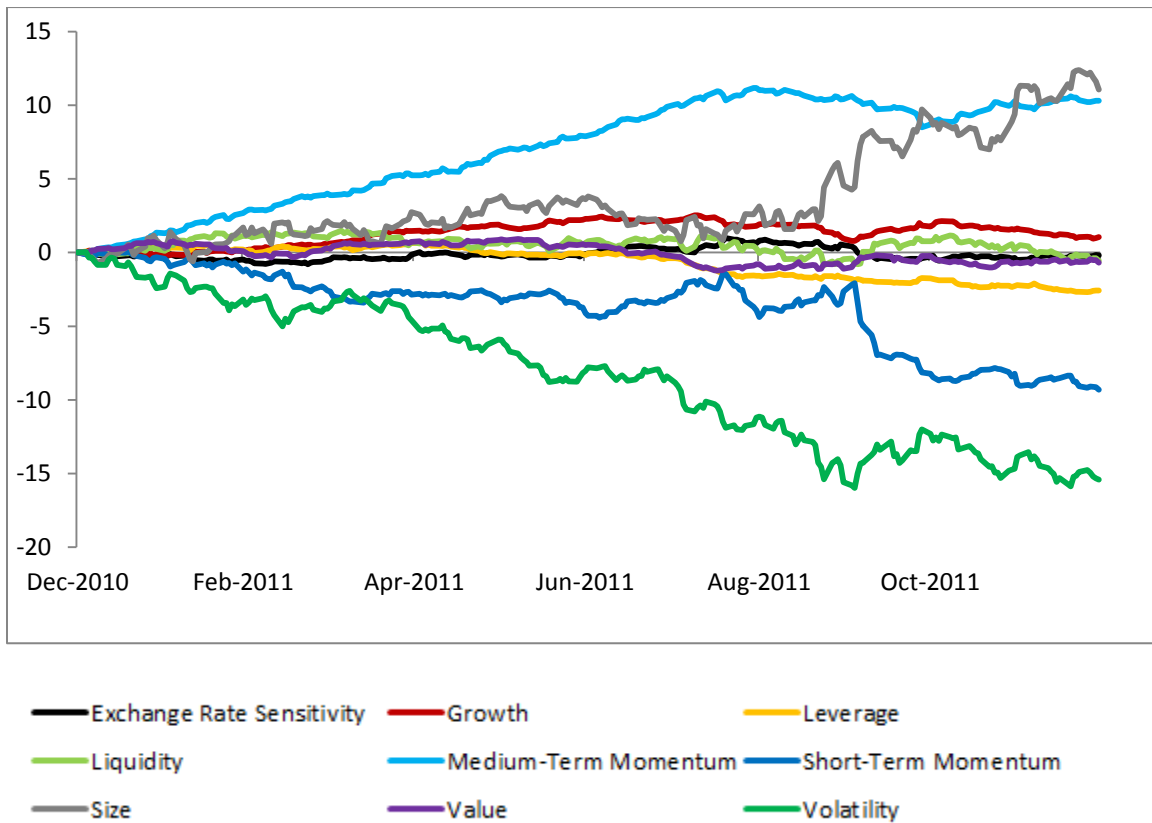
Table 3. Asia Pacific ex-Japan Realized Factor Returns

Axioma Medium Horizon Model Risk Factor	2011 Returns			Average Monthly Return				
	Dec	Nov	Oct	3Q 2011	2Q 2011	1Q 2011	4Q 2010	Long Term*
Exchange Rate Sensitivity	0.18	-0.10	-0.77	0.20	0.12	-0.16	0.09	0.01
Growth	-0.50	-0.21	0.83	-0.44	0.55	0.21	0.07	0.21
Leverage	-0.32	-0.52	-0.07	-0.51	-0.18	0.12	-0.09	-0.14
Liquidity	-0.76	-0.56	1.22	-0.37	-0.17	0.39	-0.29	-0.27
Medium-Term Momentum	0.03	1.45	-1.55	0.77	1.26	1.29	0.90	0.45
Short-Term Momentum	-1.20	0.01	-5.73	0.52	-0.51	-0.89	0.22	-0.70
Size	1.52	0.25	4.39	0.31	0.53	0.66	0.25	0.27
Value	0.02	-0.49	0.87	-0.53	0.09	0.08	0.58	0.56
Volatility	-0.88	-2.71	3.89	-2.80	-1.54	-1.22	-0.14	-0.65

* January 1999 - present

Highlighted cells are 1 standard deviation above or below average

Figure 8. APxJP Medium-Horizon Model Cumulative Style Factor Returns, 12 Months Ended December 2011 (%)





































































Source: Axioma, Inc.

Predicted risk for most style factors changed little during the fourth quarter, although in most cases it was higher than it was at the end of 2010 (Table 4). Short-term momentum and size (medium-horizon) had higher forecasts at the end of the quarter. Exposure to the Asian market increased substantially as a medium-horizon risk factor during the quarter, but fell at the short-horizon.

Predicted volatilities for countries, currencies and industries appear in the appendixes.

Table 4. APxJP Style Factor Predicted Volatility

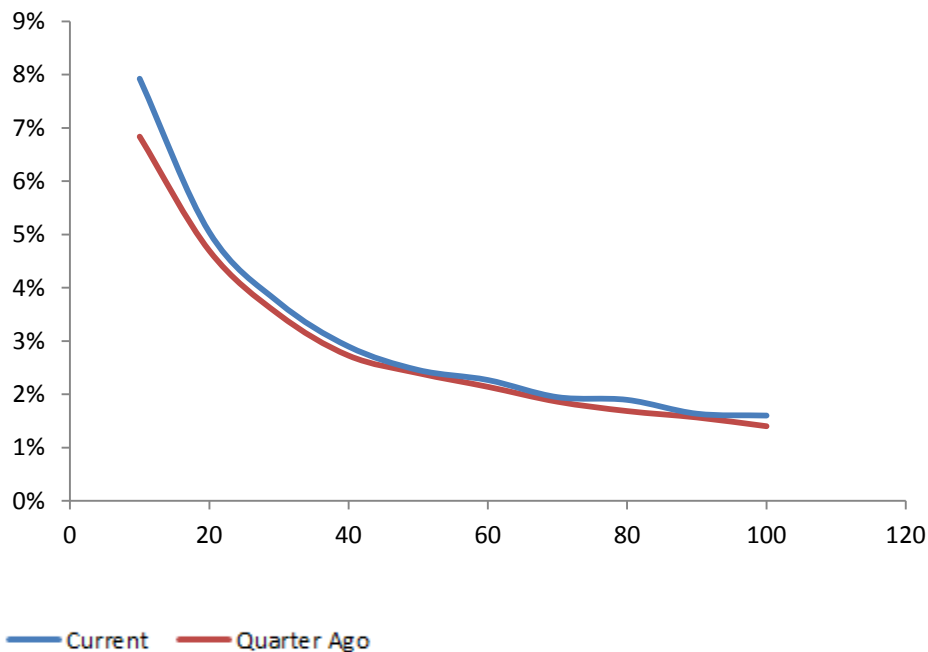
	Month-End Predicted Volatility (%)			Current Vs.		MH Minus SH	Trends		
	Dec 2011	Sep 2011	Dec 2010	Quarter Ago	Year Ago		5 Year	1 Year	1 Quarter
Asian Market									
Medium Horizon	22.2	19.8	11.9	2.4	10.3	0.5			
Short Horizon	21.7	23.5	10.7	-1.8	11.0				
Domestic China									
Medium Horizon	23.5	22.6	17.9	0.8	5.5	-0.4			
Short Horizon	23.8	25.2	18.7	-1.4	5.1				
Exchange Rate Sensitivity									
Medium Horizon	1.5	1.4	1.1	0.1	0.3	0.1			
Short Horizon	1.3	1.6	1.2	-0.2	0.2				
Growth									
Medium Horizon	1.4	1.3	1.0	0.1	0.4	0.1			
Short Horizon	1.4	1.5	1.0	-0.1	0.3				
Leverage									
Medium Horizon	1.2	1.2	1.0	0.0	0.2	0.0			
Short Horizon	1.2	1.2	1.1	0.0	0.1				
Liquidity									
Medium Horizon	3.0	2.8	2.2	0.2	0.8	0.1			
Short Horizon	2.9	3.2	2.3	-0.3	0.6				
Medium-Term Momentum									
Medium Horizon	2.5	2.4	2.7	0.1	-0.2	0.0			
Short Horizon	2.5	2.4	2.3	0.1	0.2				
Short-Term Momentum									
Medium Horizon	5.3	3.9	2.7	1.5	2.6	0.0			
Short Horizon	5.3	4.5	2.5	0.8	2.8				
Size									
Medium Horizon	7.8	6.6	4.6	1.3	3.3	-0.2			
Short Horizon	8.1	7.8	4.6	0.3	3.5				
Value									
Medium Horizon	1.8	1.7	1.6	0.1	0.3	0.2			
Short Horizon	1.7	1.8	1.7	-0.2	0.0				
Volatility									
Medium Horizon	7.4	6.5	4.1	0.9	3.2	0.1			
Short Horizon	7.2	7.5	4.0	-0.2	3.2				

Source: Axioma, Inc.

Implications for Tracking Error

Changes in market level risk almost inevitably imply changes in active risk for managers who are tracking a benchmark. In the following chart we show the minimum active risk for index tracking portfolios of varying number of stocks. The implications of the increase in predicted risk over the quarter were generally quite small. While a 10-stock portfolio would have had over 1% more tracking error at the end of the fourth quarter versus the end of the third, a 50-stock portfolio's tracking error would have been only six basis points higher.

Figure 9. Tracking Error as Number of Stocks Increases, APxJP



As of 30 Dec 2011

Source: FTSE, Axioma Inc.

Correlations and Cross-Sectional Dispersion

Stock correlations rose substantially in 2011, although correlations across Asia were generally lower than they were in other parts of the world. Both 20- and 60-day correlations within Asia ex-Japan ended the year below their end-of-August peak, but they remained well above their historical average (Figure 10). This is in sharp contrast to their near all-time-low value at the beginning of 2011. At around 10%, the proportion of stock pairs that have a negative correlation has risen since the low in September 2011, but like the median it remains well below average (Figure 11).

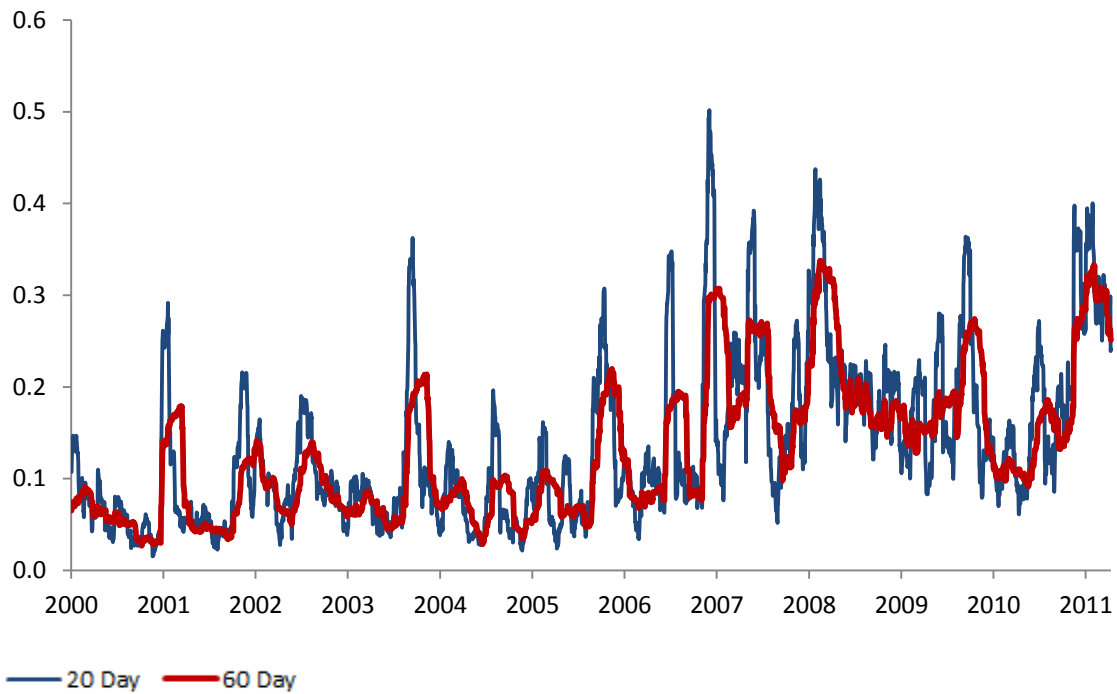
When the holding period is extended to monthly, and we calculate the dispersion (cross-sectional standard deviation) of returns, the conclusion was similar (Figure 12). Stocks' returns were more similar to each other. This is not necessarily a bad thing. Current levels of dispersion are similar to what we observed in the long stretch from 2003 through 2007, which was a time of generally good markets *and* active returns.

As stock returns have been more similar to each other recently, so have global currency returns (Figure 13). Currencies started the decade of the 2000s with fairly low correlations, but those correlations climbed throughout the decade, especially for developed currencies, and likely due to the increasing significance of the euro. Since 2005 correlations have stayed in a (wide) range, with emerging currencies trending a bit higher. At the end of 2011 correlations for developed currencies were above the prior high of their range, and emerging market currencies were just below their high in 2010.

Finally, the standard deviations of predicted volatility for the country, currency, industry and style risk model components (Figure 14) are close to their long-term averages. Each (except that for industries) rose in the second half of 2011.

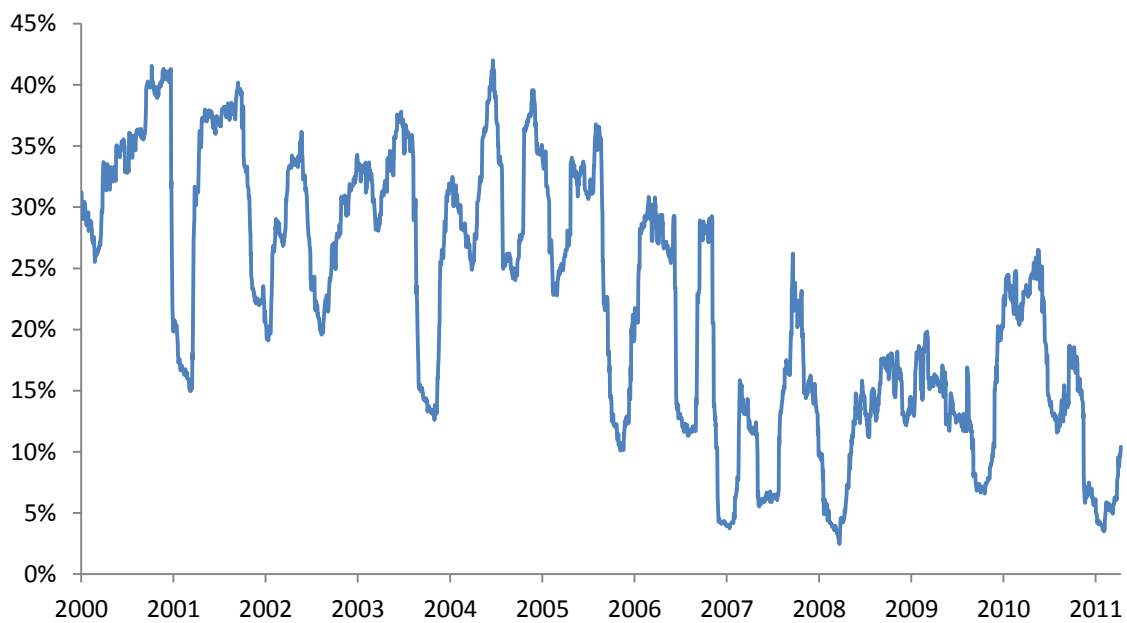
The correlation of Exchange Rate Sensitivity with most other factors fell from the third quarter to the fourth (Table 5), after rising over the prior quarter. The biggest changes occurred in the correlation of Short-Term Momentum to Growth and Size. Country and currency correlations appear in the appendixes.

Figure 10. APxJP Median Realized 20- and 60-day Pairwise Asset Correlations



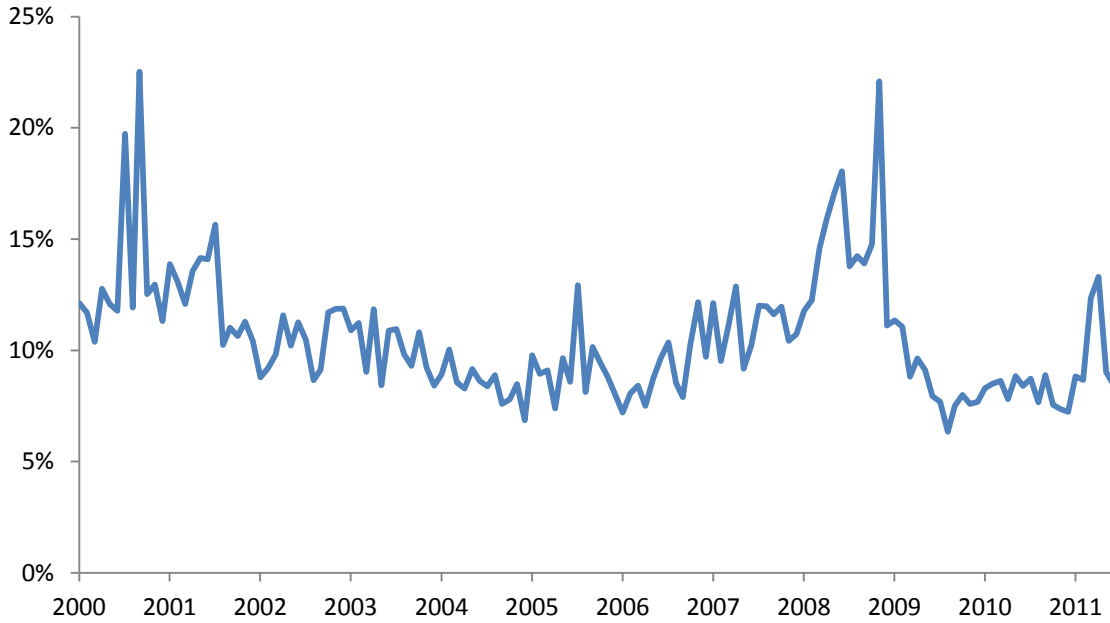
Source: FTSE, Axioma, Inc.

Figure 11. Percent of Negative APxJP Stock-Stock Correlations



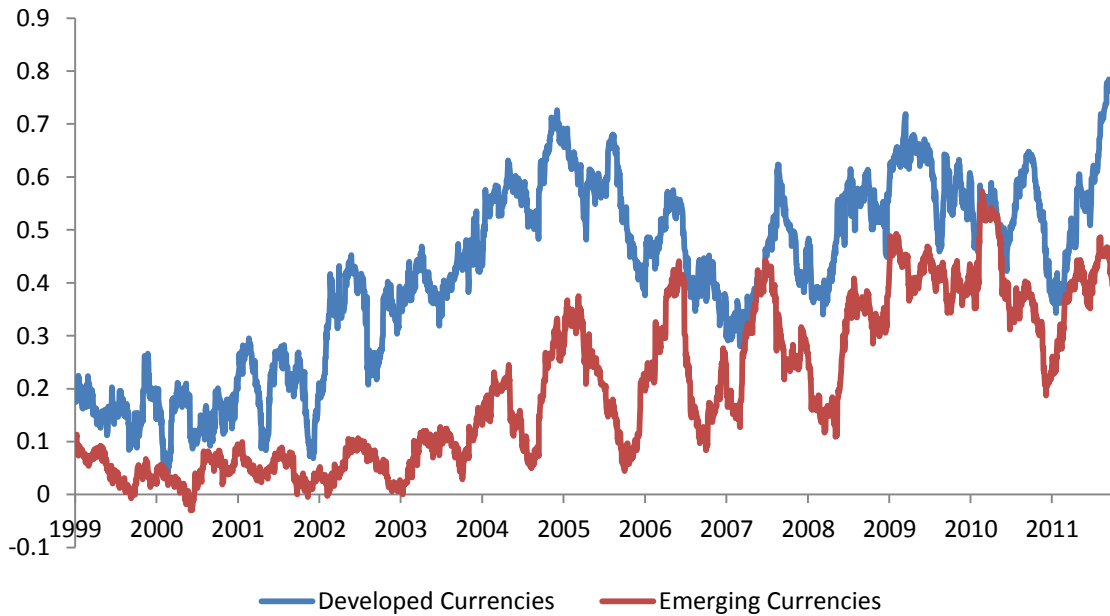
Source: FTSE, Axioma, Inc.

Figure 12. APxJP Cross-Sectional Dispersion of Monthly Returns



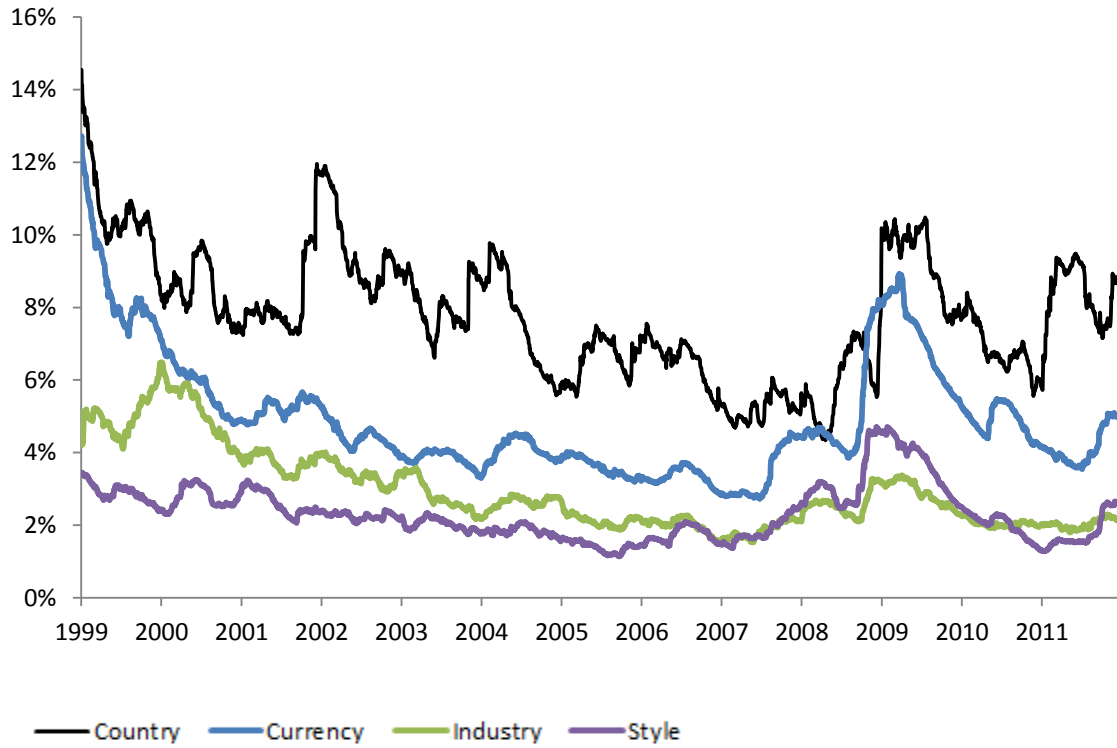
Source: FTSE, Axioma, Inc.

Figure 13. Median Global Currency Correlations



Source : Axioma, Inc.

Figure 14. APxJP Medium-Horizon Fundamental Model, Cross-Sectional Dispersion, Common Factors



Source: Axioma, Inc.

Table 5. Style, Currency and Country Correlations

As of 30 Dec 2011	Asian Market	Value	Leverage	Growth	Size	Short-Term	Medium-Term	Volatility	Liquidity	Exch Rate Sens	Domestic China	Country	Average	
						Mom	Mom						Currency	Industry
Asian Market	1	0.35	0.19	0.29	0.44	-0.61	-0.27	0.89	0.29	-0.03	-0.56	-0.12	0.35	-0.11
Value	0.35	1	0.30	-0.04	0.28	-0.28	-0.25	0.29	-0.07	-0.06	-0.17	-0.03	0.10	-0.03
Leverage	0.19	0.30	1	0.14	0.00	-0.04	-0.07	0.16	-0.01	-0.01	-0.07	-0.06	0.07	-0.03
Growth	0.29	-0.04	0.14	1	0.07	-0.24	-0.03	0.26	0.09	-0.16	-0.20	-0.04	0.09	-0.05
Size	0.44	0.28	0.00	0.07	1	-0.30	-0.07	0.36	-0.04	-0.14	-0.28	-0.01	0.17	-0.01
Short-Term Momentum	-0.61	-0.28	-0.04	-0.24	-0.30	1	0.22	-0.56	-0.24	0.14	0.38	0.05	-0.21	0.05
Medium-Term Momentum	-0.27	-0.25	-0.07	-0.03	-0.07	0.22	1	-0.31	-0.11	-0.07	0.12	0.02	-0.06	0.03
Volatility	0.89	0.29	0.16	0.26	0.36	-0.56	-0.31	1	0.28	-0.04	-0.53	-0.11	0.32	-0.11
Liquidity	0.29	-0.07	-0.01	0.09	-0.04	-0.24	-0.11	0.28	1	0.03	-0.06	-0.08	0.08	-0.04
Exchange Rate Sensitivity	-0.03	-0.06	-0.01	-0.16	-0.14	0.14	-0.07	-0.04	0.03	1	0.08	-0.01	0.00	0.00
Domestic China	-0.56	-0.17	-0.07	-0.20	-0.28	0.38	0.12	-0.53	-0.06	0.08	1	0.06	-0.23	0.05

As of 30 Sep 2011	Asian Market	Value	Leverage	Growth	Size	Short-Term	Medium-Term	Volatility	Liquidity	Exch Rate Sens	Domestic China	Country	Average	
						Mom	Mom						Currency	Industry
Asian Market	1	0.34	0.18	0.18	0.31	-0.56	-0.15	0.88	0.25	0.06	-0.55	-0.12	0.35	-0.11
Value	0.34	1	0.33	-0.11	0.26	-0.22	-0.21	0.25	-0.10	-0.01	-0.17	-0.04	0.10	-0.03
Leverage	0.18	0.33	1	0.09	-0.04	-0.04	0.00	0.12	-0.01	-0.04	-0.09	-0.06	0.05	-0.03
Growth	0.18	-0.11	0.09	1	-0.01	-0.08	0.07	0.14	0.01	-0.07	-0.18	-0.03	0.16	-0.05
Size	0.31	0.26	-0.04	-0.01	1	-0.17	0.01	0.23	0.01	-0.09	-0.20	0.00	0.03	0.00
Short-Term Momentum	-0.56	-0.22	-0.04	-0.08	-0.17	1	0.11	-0.50	-0.19	0.02	0.36	0.05	-0.19	0.05
Medium-Term Momentum	-0.15	-0.21	0.00	0.07	0.01	0.11	1	-0.21	-0.05	-0.12	0.03	0.00	0.00	0.02
Volatility	0.88	0.25	0.12	0.14	0.23	-0.50	-0.21	1	0.26	0.03	-0.53	-0.11	0.31	-0.12
Liquidity	0.25	-0.10	-0.01	0.01	-0.13	-0.19	-0.05	0.26	1	0.10	0.01	-0.08	0.05	-0.03
Exchange Rate Sensitivity	0.06	-0.01	-0.04	-0.07	-0.09	0.02	-0.12	0.03	0.10	1	0.05	-0.01	0.02	-0.01
Domestic China	-0.55	-0.17	-0.09	-0.18	-0.20	0.36	0.03	-0.53	0.01	0.05	1	0.05	-0.22	0.06

































































































Change	Asian Market	Value	Leverage	Growth	Size	Short-Term	Medium-Term	Volatility	Liquidity	Exch Rate Sens	Domestic China	Country	Average	
						Mom	Mom						Currency	Industry
Asian Market	0	0.01	0.01	0.11	0.12	-0.05	-0.12	0.02	0.03	-0.09	0.00	0.00	0.01	0.00
Value	0.01	0	-0.03	0.07	0.02	-0.06	-0.04	0.04	0.02	-0.05	0.00	0.00	0.00	0.00
Leverage	0.01	-0.03	0	0.04	0.04	0.00	-0.07	0.04	-0.01	0.03	0.02	0.00	0.02	-0.01
Growth	0.11	0.07	0.04	0	0.09	-0.16	-0.09	0.12	0.08	-0.09	-0.02	-0.02	0.04	-0.01
Size	0.12	0.02	0.04	0.09	0	-0.14	-0.08	0.13	0.09	-0.05	-0.08	-0.01	0.04	-0.01
Short-Term Momentum	-0.05	-0.06	0.00	-0.16	-0.14	0	0.10	-0.06	-0.05	0.13	0.02	0.00	-0.02	0.00
Medium-Term Momentum	-0.12	-0.04	-0.07	-0.09	-0.08	0.10	0	-0.10	-0.05	-0.05	0.09	0.02	-0.06	0.02
Volatility	0.02	0.04	0.04	0.12	0.13	-0.06	-0.10	0	0.03	-0.08	0.00	0.00	0.01	0.00
Liquidity	0.03	0.02	-0.01	0.08	0.09	-0.05	-0.05	0.03	0	-0.06	-0.07	-0.01	0.03	0.00
Exchange Rate Sensitivity	-0.09	-0.05	0.03	-0.09	-0.05	0.13	0.05	-0.08	-0.06	0	0.03	0.00	-0.03	0.00
Domestic China	0.00	0.00	0.02	-0.02	-0.08	0.02	0.09	0.00	-0.07	0.03	0	0.01	-0.01	-0.01

Source: Axioma, Inc.

Conclusion













































































































Risk globally was substantially higher for most of 2011 than it had been since mid-2009, although it ticked down toward the end of the year, and the Asia Pacific ex-Japan region exhibited a similar pattern. The four risk models disagreed about prospective risks for much of 2011, and the disagreement climbed substantially through most of the first three quarters of the year. By the end of December, however, they showed much more agreement, led by declines in risk forecasts from the short-horizon models. While stock-stock correlations rose substantially throughout 2011 and neared record highs since at least 1999, they eased downward by the end of the year. We hope and expect this will improve prospects for active managers, particularly those focused on individual stock selection.

Appendix 1. Predicted Country Volatility

	Month-End Predicted Volatility (%)			Current Vs.		MH Minus SH	Trends		
	Dec 2011	Sep 2011	Dec 2010	Quarter Ago	Year Ago		5 Year	1 Year	1 Quarter
Australia									
Medium Horizon	11.4	11.3	8.3	0.1	3.1	0.9			
Short Horizon	10.5	12.5	7.7	-1.9	2.8				
Bangladesh									
Medium Horizon	42.0	33.6	16.3	8.4	25.7	-4.2			
Short Horizon	46.2	33.7	16.0	12.5	30.2				
China									
Medium Horizon	12.3	11.7	8.8	0.7	3.5	0.7			
Short Horizon	11.6	13.5	9.3	-1.8	2.4				
Hong Kong									
Medium Horizon	8.6	8.3	7.0	0.3	1.6	0.6			
Short Horizon	8.0	9.2	7.0	-1.2	1.0				
India									
Medium Horizon	16.2	15.6	11.9	0.7	4.3	-1.2			
Short Horizon	17.5	17.1	12.9	0.4	4.6				
Indonesia									
Medium Horizon	14.7	14.9	14.9	-0.2	-0.2	1.3			
Short Horizon	13.4	16.4	16.7	-3.0	-3.3				
Korea, Republic of									
Medium Horizon	13.5	13.1	9.4	0.4	4.1	1.0			
Short Horizon	12.5	15.3	9.7	-2.8	2.7				
Malaysia									
Medium Horizon	9.6	8.6	6.5	1.0	3.0	-0.4			
Short Horizon	10.0	9.5	6.7	0.4	3.2				
New Zealand									
Medium Horizon	9.4	9.2	8.3	0.2	1.1	0.8			
Short Horizon	8.7	10.5	7.7	-1.8	1.0				
Pakistan									
Medium Horizon	18.4	17.6	16.9	0.8	1.5	0.7			
Short Horizon	17.8	19.4	12.7	-1.6	5.1				
Philippines									
Medium Horizon	14.1	15.7	14.7	-1.5	-0.5	0.6			
Short Horizon	13.5	17.5	15.4	-4.0	-1.8				
Singapore									
Medium Horizon	10.4	11.1	7.9	-0.7	2.5	1.7			
Short Horizon	8.6	12.8	8.2	-4.2	0.5				
Sri Lanka									
Medium Horizon	22.6	21.3	22.6	1.3	0.0	-0.9			
Short Horizon	23.5	22.8	18.6	0.7	4.9				
Taiwan									
Medium Horizon	13.1	11.0	10.0	2.0	3.1	-1.6			
Short Horizon	14.7	12.1	9.4	2.5	5.2				
Thailand									
Medium Horizon	16.7	14.9	12.9	1.8	3.8	0.8			
Short Horizon	16.0	15.1	11.4	0.8	4.6				
Vietnam									
Medium Horizon	29.7	31.2	27.0	-1.4	2.8	0.0			
Short Horizon	29.7	32.8	27.3	-3.1	2.4				









































































Source: Axioma, Inc.

Appendix 2. Predicted Currency Volatility

	Month-End Predicted Volatility (%)			Current Vs.		MH Minus SH	Trends		
	Dec 2011	Sep 2011	Dec 2010	Quarter Ago	Year Ago		5 Year	1 Year	1 Quarter
AUD									
Medium Horizon	16.2	14.6	12.7	1.6	3.5	0.7			
Short Horizon	15.6	16.4	13.4	-0.8	2.2				
BDT									
Medium Horizon	2.5	2.5	1.7	0.0	0.8	-0.3			
Short Horizon	2.9	2.8	1.9	0.0	1.0				
CNY									
Medium Horizon	2.1	1.8	1.8	0.2	0.2	-0.3			
Short Horizon	2.3	1.9	2.2	0.5	0.2				
EUR									
Medium Horizon	12.6	12.5	10.1	0.2	2.5	1.0			
Short Horizon	11.6	13.9	11.1	-2.4	0.5				
HKD									
Medium Horizon	0.8	0.8	0.7	0.0	0.1	-0.1			
Short Horizon	0.9	0.8	0.5	0.1	0.3				
IDR									
Medium Horizon	5.5	4.5	3.8	0.9	1.6	-0.8			
Short Horizon	6.2	5.4	3.6	0.8	2.6				
INR									
Medium Horizon	8.0	6.5	6.5	1.5	1.5	-1.3			
Short Horizon	9.3	7.2	6.8	2.1	2.5				
JPY									
Medium Horizon	9.2	10.0	10.0	-0.8	-0.8	1.3			
Short Horizon	7.9	10.6	9.5	-2.7	-1.6				
KRW									
Medium Horizon	11.2	10.8	10.7	0.4	0.5	0.7			
Short Horizon	10.5	11.7	10.6	-1.1	-0.1				
LKR									
Medium Horizon	1.9	1.1	1.3	0.8	0.6	-0.5			
Short Horizon	2.5	1.0	1.4	1.5	1.1				
MYR									
Medium Horizon	7.2	6.3	6.6	0.9	0.6	-0.1			
Short Horizon	7.3	7.2	6.4	0.1	0.9				
NZD									
Medium Horizon	15.9	15.1	13.1	0.7	2.8	0.9			
Short Horizon	15.0	16.5	13.6	-1.6	1.3				
PHP									
Medium Horizon	5.8	5.2	6.2	0.6	-0.4	-0.1			
Short Horizon	5.9	5.1	6.5	0.8	-0.6				
PKR									
Medium Horizon	3.3	2.6	2.3	0.7	0.9	-0.3			
Short Horizon	3.5	2.6	2.0	1.0	1.5				
SGD									
Medium Horizon	8.2	7.0	5.1	1.1	3.1	0.1			
Short Horizon	8.1	8.1	5.8	-0.1	2.3				
THB									
Medium Horizon	5.1	4.5	3.4	0.5	1.6	-0.2			
Short Horizon	5.3	4.8	3.6	0.5	1.7				
TWD									
Medium Horizon	4.6	4.8	4.4	-0.2	0.2	0.4			
Short Horizon	4.2	4.6	4.9	-0.4	-0.7				
VND									
Medium Horizon	2.0	2.4	1.5	-0.4	0.6	0.6			
Short Horizon	1.4	2.6	1.0	-1.2	0.4				









































































Source: Axioma, Inc.

Appendix 3. Predicted Industry Volatility

	Month-End Predicted Volatility (%)			Current Vs.		MH	Trends		
	Dec 2011	Sep 2011	Dec 2010	Quarter Ago	Year Ago		Minus SH	5 Year	1 Year
Auto & Components									
Medium Horizon	8.4	9.1	8.4	-0.8	-0.1	0.8			
Short Horizon	7.5	9.5	8.1	-2.0	-0.6				
Banks									
Medium Horizon	5.0	4.6	4.6	0.4	0.4	0.3			
Short Horizon	4.7	4.9	4.8	-0.2	-0.1				
Capital Goods									
Medium Horizon	3.4	3.5	3.0	-0.1	0.4	0.6			
Short Horizon	2.9	3.6	2.8	-0.8	0.1				
Comm & Prof Services									
Medium Horizon	5.5	5.5	5.7	0.0	-0.2	0.2			
Short Horizon	5.3	5.8	5.6	-0.5	-0.3				
Cons Durables & Apparel									
Medium Horizon	4.1	4.4	4.1	-0.3	0.0	0.0			
Short Horizon	4.1	4.0	4.1	0.0	-0.1				
Consumer Services									
Medium Horizon	6.6	6.9	5.5	-0.3	1.1	0.3			
Short Horizon	6.3	7.6	5.3	-1.3	0.9				
Diversified Financials									
Medium Horizon	3.9	3.5	4.2	0.4	-0.3	-0.3			
Short Horizon	4.2	3.5	4.1	0.7	0.1				
Energy									
Medium Horizon	5.4	6.2	5.6	-0.8	-0.2	0.3			
Short Horizon	5.1	6.3	5.7	-1.2	-0.6				
Food & Staples Retailing									
Medium Horizon	8.2	8.5	7.2	-0.4	1.0	1.0			
Short Horizon	7.1	9.0	6.8	-1.9	0.4				
Food, Beverage & Tobacco									
Medium Horizon	4.6	4.8	3.8	-0.2	0.8	0.4			
Short Horizon	4.2	5.2	3.5	-1.0	0.7				
Health Care Equip & Svcs									
Medium Horizon	7.1	6.8	6.6	0.3	0.5	0.3			
Short Horizon	6.9	7.5	6.9	-0.6	-0.1				
Household & Pers Prods									
Medium Horizon	10.7	9.8	8.5	0.9	2.2	0.5			
Short Horizon	10.2	10.7	7.4	-0.5	2.8				

Source: Axioma, Inc.

Appendix 3. Continued

	Month-End Predicted Volatility (%)			Current Vs.		MH Minus SH	Trends		
	Dec 2011	Sep 2011	Dec 2010	Quarter Ago	Year Ago		5 Year	1 Year	1 Quarter
Insurance									
Medium Horizon	6.6	6.6	7.4	0.0	-0.8	-0.1			
Short Horizon	6.7	6.6	7.8	0.1	-1.0				
Materials									
Medium Horizon	5.0	5.0	4.4	-0.1	0.6	0.3			
Short Horizon	4.7	5.5	4.1	-0.8	0.6				
Media									
Medium Horizon	6.2	6.4	5.2	-0.2	1.0	0.6			
Short Horizon	5.6	6.9	5.2	-1.3	0.4				
Pharma, Biotech & Life Sci									
Medium Horizon	6.3	6.1	6.4	0.2	-0.1	0.6			
Short Horizon	5.7	6.4	6.0	-0.7	-0.3				
Real Estate									
Medium Horizon	4.8	4.7	4.8	0.0	0.0	0.0			
Short Horizon	4.8	4.8	4.7	0.0	0.1				
Retailing									
Medium Horizon	7.6	7.7	5.5	-0.1	2.1	0.7			
Short Horizon	6.9	8.8	5.7	-1.9	1.3				
Semicond & Semi Equip									
Medium Horizon	11.6	12.8	12.1	-1.2	-0.5	0.8			
Short Horizon	10.8	13.5	11.2	-2.7	-0.4				
Software & Services									
Medium Horizon	8.2	7.5	6.3	0.6	1.8	0.3			
Short Horizon	7.9	8.4	5.4	-0.5	2.5				
Tech Hardware & Equip									
Medium Horizon	7.7	8.1	8.6	-0.4	-0.9	0.3			
Short Horizon	7.3	8.5	8.3	-1.2	-1.0				
Telecomm Services									
Medium Horizon	8.9	8.2	6.0	0.8	2.9	0.6			
Short Horizon	8.3	9.4	5.9	-1.1	2.4				
Transportation									
Medium Horizon	4.4	4.5	4.6	-0.1	-0.2	0.0			
Short Horizon	4.4	4.4	4.8	-0.1	-0.5				
Utilities									
Medium Horizon	6.0	5.3	4.4	0.7	1.6	0.2			
Short Horizon	5.7	5.7	4.2	0.0	1.5				

Appendix 4. Asia ex-Japan Country Correlations

The Axioma country factors look at returns in-excess of the market factor, so correlations in the following tables are all relative to the Asia Pac ex-Japan market.

As of 30 Dec 2011	Taiwan	Vietnam	Australia	China	Hong Kong	India	Indonesia	Rep of Korea	Malaysia	New Zealand	Pakistan	Philippines	Singapore	Thailand	Sri Lanka	Bangladesh
Taiwan	1	-0.16	0.05	-0.25	-0.23	-0.20	-0.17	0.04	-0.06	0.00	0.04	-0.02	-0.16	-0.19	0	-0.05
Vietnam	-0.16	1	0.14	-0.16	-0.11	0.10	-0.07	0.00	0.06	0.28	0.14	0.05	-0.02	0.04	0.20	0
Australia	0.05	0.14	1	-0.32	-0.24	-0.25	-0.13	-0.02	-0.01	0.43	0.14	0.05	-0.04	-0.12	0.09	0.00
China	-0.25	-0.16	-0.32	1	0.62	-0.29	-0.04	-0.27	-0.03	-0.23	-0.26	-0.13	0.06	-0.06	-0.18	-0.21
Hong Kong	-0.23	-0.11	-0.24	0.62	1	-0.39	0.01	-0.15	0.01	-0.13	-0.17	-0.08	0.20	0.04	-0.08	-0.11
India	-0.20	0.10	-0.25	-0.29	-0.39	1	-0.18	-0.39	-0.26	-0.04	0.02	-0.18	-0.19	-0.14	0.13	0.06
Indonesia	-0.17	-0.07	-0.13	-0.04	0.01	-0.18	1	-0.06	0.19	-0.12	-0.05	0.23	0.11	0.20	-0.04	0.20
Rep of Korea	0.04	0.00	-0.02	-0.27	-0.15	-0.39	-0.06	1	-0.02	-0.07	0.05	0.06	-0.10	0.04	-0.04	0.03
Malaysia	-0.06	0.06	-0.01	-0.03	0.01	-0.26	0.19	-0.02	1	0.15	0.12	0.23	0.13	0.18	0.02	0.03
New Zealand	0.00	0.28	0.43	-0.23	-0.13	-0.04	-0.12	-0.07	0.15	1	0.31	0.13	0.00	-0.03	0.29	0.12
Pakistan	0.04	0.14	0.14	-0.26	-0.17	0.02	-0.05	0.05	0.12	0.31	1	0.13	-0.05	0.04	0.17	0.14
Philippines	-0.02	0.05	0.05	-0.13	-0.08	-0.18	0.23	0.06	0.23	0.13	0.13	1	-0.14	0.15	0.01	0.13
Singapore	-0.16	-0.02	-0.04	0.06	0.20	-0.19	0.11	-0.10	0.13	0.00	-0.05	-0.14	1	0.02	-0.05	-0.03
Thailand	-0.19	0.04	-0.12	-0.06	0.04	-0.14	0.20	0.04	0.18	-0.03	0.04	0.15	0.02	1	0.01	0.00
Sri Lanka	-0.02	0.20	0.09	-0.18	-0.08	0.13	-0.04	-0.04	0.02	0.29	0.17	0.01	-0.05	0.01	1	0.15
Bangladesh	-0.05	0.20	0.00	-0.21	-0.11	0.06	0.20	0.03	0.03	0.12	0.14	0.13	-0.03	0.00	0.15	1

As of 30 Sep 2011	Taiwan	Vietnam	Australia	China	Hong Kong	India	Indonesia	Rep of Korea	Malaysia	New Zealand	Pakistan	Philippines	Singapore	Thailand	Sri Lanka	Bangladesh
Taiwan	1	-0.13	0.07	-0.27	-0.16	-0.24	-0.13	0.07	-0.06	0.01	0.03	0.01	-0.15	-0.13	0	-0.01
Vietnam	-0.13	1	0.15	-0.14	-0.15	0.09	-0.08	0.02	0.08	0.27	0.14	0.03	-0.03	0.02	0.23	0
Australia	0.07	0.15	1	-0.31	-0.25	-0.26	-0.11	0.00	-0.03	0.43	0.13	0.00	-0.01	-0.16	0.10	-0.01
China	-0.27	-0.14	-0.31	1	0.65	-0.30	-0.08	-0.25	-0.06	-0.22	-0.28	-0.12	0.06	-0.08	-0.15	-0.16
Hong Kong	-0.16	-0.15	-0.25	0.65	1	-0.41	-0.04	-0.16	0.01	-0.17	-0.22	-0.10	0.21	0.00	-0.07	-0.17
India	-0.24	0.09	-0.26	-0.30	-0.41	1	-0.13	-0.44	-0.20	-0.04	0.10	-0.14	-0.18	-0.06	0.14	0.08
Indonesia	-0.13	-0.08	-0.11	-0.08	-0.04	-0.13	1	-0.08	0.15	-0.10	-0.05	0.24	0.05	0.16	-0.02	0.18
Rep of Korea	0.07	0.02	0.00	-0.25	-0.16	-0.44	-0.08	1	0.03	-0.03	0.04	0.07	-0.12	0.06	-0.06	0.02
Malaysia	-0.06	0.08	-0.03	-0.06	0.01	-0.20	0.15	0.03	1	0.15	0.14	0.22	0.11	0.15	0.06	0.02
New Zealand	0.01	0.27	0.43	-0.22	-0.17	-0.04	-0.10	-0.03	0.15	1	0.31	0.10	0.03	-0.06	0.30	0.10
Pakistan	0.03	0.14	0.13	-0.28	-0.22	0.10	-0.05	0.04	0.14	0.31	1	0.09	-0.04	0.02	0.18	0.12
Philippines	0.01	0.03	0.00	-0.12	-0.10	-0.14	0.24	0.07	0.22	0.10	0.09	1	-0.19	0.13	0.03	0.08
Singapore	-0.15	-0.03	-0.01	0.06	0.21	-0.18	0.05	-0.12	0.11	0.03	-0.04	-0.19	1	-0.02	-0.02	-0.05
Thailand	-0.13	0.02	-0.16	-0.08	0.00	-0.06	0.16	0.06	0.15	-0.06	0.02	0.13	-0.02	1	0.05	-0.01
Sri Lanka	-0.09	0.23	0.10	-0.15	-0.07	0.14	-0.02	-0.06	0.06	0.30	0.18	0.03	-0.02	0.05	1	0.06
Bangladesh	-0.01	0.17	-0.01	-0.16	-0.17	0.08	0.18	0.02	0.02	0.10	0.12	0.08	-0.05	-0.01	0.06	1

Change	Taiwan	Vietnam	Australia	China	Hong Kong	India	Indonesia	Rep of Korea	Malaysia	New Zealand	Pakistan	Philippines	Singapore	Thailand	Sri Lanka	Bangladesh
Taiwan	0	-0.04	-0.02	0.02	-0.06	0.04	-0.03	-0.03	0.00	0.00	0.01	-0.03	-0.01	-0.05	0	-0.03
Vietnam	-0.04	0	-0.01	-0.03	0.04	0.01	0.01	-0.01	-0.02	0.01	0.00	0.02	0.02	0.02	-0.03	0
Australia	-0.02	-0.01	0	-0.01	0.00	0.01	-0.02	-0.02	0.02	0.00	0.01	0.05	-0.03	0.05	-0.01	0.00
China	0.02	-0.03	-0.01	0	-0.03	0.00	0.04	-0.02	0.03	-0.01	0.01	-0.01	0.00	0.02	-0.04	-0.05
Hong Kong	-0.06	0.04	0.00	-0.03	0	0.02	0.05	0.00	0.00	0.04	0.06	0.03	0.00	0.04	0.00	0.07
India	0.04	0.01	0.01	0.00	0.02	0	-0.05	0.05	-0.06	0.00	-0.07	-0.04	-0.01	-0.08	-0.01	-0.03
Indonesia	-0.03	0.01	-0.02	0.04	0.05	-0.05	0	0.02	0.04	-0.02	0.00	-0.01	0.06	0.04	-0.02	0.01
Rep of Korea	-0.03	-0.01	-0.02	-0.02	0.00	0.05	0.02	0	-0.05	-0.04	0.01	0.00	0.02	-0.01	0.03	0.02
Malaysia	0.00	-0.02	0.02	0.03	0.00	-0.06	0.04	-0.05	0	0.01	-0.01	0.02	0.02	0.03	-0.04	0.01
New Zealand	0.00	0.01	0.00	-0.01	0.04	0.00	-0.02	-0.04	0.01	0	0.00	0.03	-0.03	0.03	-0.01	0.02
Pakistan	0.01	0.00	0.01	0.01	0.06	-0.07	0.00	0.01	-0.01	0.00	0	0.05	-0.01	0.01	-0.01	0.02
Philippines	-0.03	0.02	0.05	-0.01	0.03	-0.04	-0.01	0.00	0.02	0.03	0.05	0	0.04	0.01	-0.02	0.05
Singapore	-0.01	0.02	-0.03	0.00	0.00	-0.01	0.06	0.02	0.02	-0.03	-0.01	0.04	0	0.04	-0.03	0.02
Thailand	-0.05	0.02	0.05	0.02	0.04	-0.08	0.04	-0.01	0.03	0.03	0.01	0.01	0.04	0	-0.04	0.00
Sri Lanka	0.06	-0.03	-0.01	-0.04	0.00	-0.01	-0.02	0.03	-0.04	-0.01	-0.01	-0.02	-0.03	-0.04	0	0.10
Bangladesh	-0.03	0.03	0.00	-0.05	0.07	-0.03	0.01	0.02	0.01	0.02	0.02	0.05	0.02	0.00	0.10	0

Appendix 5. Asia Ex-Japan Currency Correlations

As of 30 Dec 2011	PKR	VND	AUD	TWD	THB	MYR	IDR	KRW	INR	CNY	BDT	NZD	PHP	LKR	SGD	EUR	JPY
PKR	1	-0.01	-0.02	-0.01	-0.03	-0.02	0.01	0.01	-0.03	0.01	0.01	-0.02	0.01	-0.01	-0.08	-0.04	-0.05
VND	-0.01	1	0.05	0.05	0.03	0.04	0.00	0.04	0.04	0.01	-0.01	0.02	0.02	0.03	0.01	0	-0.01
AUD	-0.02	0.05	1	0.53	0.42	0.59	0.32	0.65	0.54	0.26	0.11	0.89	0.50	0.09	0.85	0.67	0.07
TWD	-0.01	0.05	0.53	1	0.43	0.59	0.41	0.78	0.44	0.20	0.11	0.51	0.57	0.10	0.56	0.44	-0.03
THB	-0.03	0.03	0.42	0.43	1	0.44	0.29	0.51	0.32	0.17	0.08	0.41	0.38	0.06	0.50	0.36	0.12
MYR	-0.02	0.04	0.59	0.59	0.44	1	0.39	0.71	0.45	0.21	0.10	0.57	0.53	0.08	0.66	0.41	-0.01
IDR	0.01	0.00	0.32	0.41	0.29	0.39	1	0.52	0.27	0.15	0.09	0.32	0.38	0.07	0.37	0.26	0.07
KRW	0.01	0.04	0.65	0.78	0.51	0.71	0.52	1	0.53	0.26	0.14	0.64	0.71	0.14	0.64	0.43	-0.05
INR	-0.03	0.04	0.54	0.44	0.32	0.45	0.27	0.53	1	0.15	0.08	0.50	0.38	0.07	0.57	0.39	-0.07
CNY	0.01	0.01	0.26	0.20	0.17	0.21	0.15	0.26	0.15	1	0.06	0.24	0.21	0.03	0.23	0.21	0.04
BDT	0.01	-0.01	0.11	0.11	0.08	0.10	0.09	0.14	0.08	0.06	1	0.10	0.11	0.01	0.12	0.14	0.00
NZD	-0.02	0.02	0.89	0.51	0.41	0.57	0.32	0.64	0.50	0.24	0.10	1	0.48	0.08	0.79	0.61	0.04
PHP	0.01	0.02	0.50	0.57	0.38	0.53	0.38	0.71	0.38	0.21	0.11	0.48	1	0.09	0.50	0.40	0.02
LKR	-0.01	0.03	0.09	0.10	0.06	0.08	0.07	0.14	0.07	0.03	0.01	0.08	0.09	1	0.06	0.04	0.03
SGD	-0.08	0.01	0.85	0.56	0.50	0.66	0.37	0.64	0.57	0.23	0.12	0.79	0.50	0.06	1	0.74	0.14
EUR	-0.04	0.01	0.67	0.44	0.36	0.41	0.26	0.43	0.39	0.21	0.14	0.61	0.40	0.04	0.74	1	0.24
JPY	-0.05	-0.01	0.07	-0.03	0.12	-0.01	0.07	-0.05	-0.07	0.04	0.00	0.04	0.02	0.03	0.14	0.24	1

As of 30 Sep 2011	PKR	VND	AUD	TWD	THB	MYR	IDR	KRW	INR	CNY	BDT	NZD	PHP	LKR	SGD	EUR	JPY
PKR	1	0.01	0.01	0.00	-0.04	-0.02	0.01	0.02	-0.03	-0.01	0.01	0.00	0.00	-0.01	-0.08	-0.05	-0.04
VND	0.01	1	0.12	0.07	0.04	0.08	0.04	0.11	0.09	0.02	-0.04	0.10	0.07	0.05	0.06	0	0.00
AUD	0.01	0.12	1	0.51	0.39	0.56	0.33	0.64	0.60	0.33	0.05	0.84	0.47	0.20	0.82	0.58	0.04
TWD	0.00	0.07	0.51	1	0.38	0.50	0.37	0.71	0.48	0.28	0.01	0.49	0.45	0.19	0.54	0.39	-0.06
THB	-0.04	0.04	0.39	0.38	1	0.40	0.27	0.49	0.39	0.22	0.01	0.38	0.31	0.15	0.49	0.27	0.01
MYR	-0.02	0.08	0.56	0.50	0.40	1	0.37	0.66	0.51	0.28	0.03	0.50	0.42	0.20	0.61	0.30	-0.08
IDR	0.01	0.04	0.33	0.37	0.27	0.37	1	0.52	0.33	0.21	0.01	0.32	0.33	0.13	0.38	0.20	-0.04
KRW	0.02	0.11	0.64	0.71	0.49	0.66	0.52	1	0.61	0.37	0.00	0.61	0.61	0.28	0.62	0.37	-0.09
INR	-0.03	0.09	0.60	0.48	0.39	0.51	0.33	0.61	1	0.26	0.02	0.54	0.42	0.18	0.67	0.37	-0.06
CNY	-0.01	0.02	0.33	0.28	0.22	0.28	0.21	0.37	0.26	1	0.02	0.31	0.25	0.09	0.35	0.26	0.04
BDT	0.01	-0.04	0.05	0.01	0.01	0.03	0.01	0.00	0.02	0.02	1	0.04	0.00	-0.02	0.04	-0.02	-0.11
NZD	0.00	0.10	0.84	0.49	0.38	0.50	0.32	0.61	0.54	0.31	0.04	1	0.43	0.18	0.74	0.55	0.05
PHP	0.00	0.07	0.47	0.45	0.31	0.42	0.33	0.61	0.42	0.25	0.00	0.43	1	0.15	0.47	0.34	-0.06
LKR	-0.01	0.05	0.20	0.19	0.15	0.20	0.13	0.28	0.18	0.09	-0.02	0.18	0.15	1	0.18	0.03	0.04
SGD	-0.08	0.06	0.82	0.54	0.49	0.61	0.38	0.62	0.67	0.35	0.04	0.74	0.47	0.18	1	0.67	0.14
EUR	-0.05	0.06	0.58	0.39	0.27	0.30	0.20	0.37	0.37	0.26	-0.02	0.55	0.34	0.03	0.67	1	0.23
JPY	-0.04	0.00	0.04	-0.06	0.01	-0.08	-0.04	-0.09	-0.06	0.04	-0.11	0.05	-0.06	0.04	0.14	0.23	1

Change	PKR	VND	AUD	TWD	THB	MYR	IDR	KRW	INR	CNY	BDT	NZD	PHP	LKR	SGD	EUR	JPY
PKR	0	-0.02	-0.03	0.00	0.00	0.00	0.01	-0.01	0.00	0.01	0.00	-0.02	0.01	0.00	-0.01	0.01	-0.01
VND	-0.02	0	-0.07	-0.03	-0.02	-0.05	-0.04	-0.08	-0.05	-0.01	0.02	-0.08	-0.05	-0.02	-0.06	0	-0.01
AUD	-0.03	-0.07	0	0.01	0.03	0.03	-0.01	0.01	-0.06	-0.06	0.05	0.04	0.04	-0.11	0.03	0.09	0.03
TWD	0.00	-0.03	0.01	0	0.05	0.08	0.03	0.07	-0.04	-0.08	0.10	0.03	0.11	-0.09	0.02	0.05	0.03
THB	0.00	-0.02	0.03	0.05	0	0.04	0.02	0.02	-0.07	-0.05	0.07	0.04	0.07	-0.09	0.01	0.09	0.11
MYR	0.00	-0.05	0.03	0.08	0.04	0	0.02	0.06	-0.06	-0.07	0.08	0.06	0.10	-0.12	0.04	0.11	0.06
IDR	0.01	-0.04	-0.01	0.03	0.02	0.02	0	0.01	-0.07	-0.06	0.07	0.01	0.05	-0.06	-0.01	0.06	0.11
KRW	-0.01	-0.08	0.01	0.07	0.02	0.06	0.01	0	-0.08	-0.11	0.14	0.03	0.10	-0.13	0.02	0.06	0.04
INR	0.00	-0.05	-0.06	-0.04	-0.07	-0.06	-0.07	-0.08	0	-0.11	0.06	-0.04	-0.03	-0.11	-0.10	0.02	-0.01
CNY	0.01	-0.01	-0.06	-0.08	-0.05	-0.07	-0.06	-0.11	-0.11	0	0.04	-0.06	-0.03	-0.06	-0.12	-0.05	0.00
BDT	0.00	0.02	0.05	0.10	0.07	0.08	0.07	0.14	0.06	0.04	0	0.07	0.11	0.03	0.08	0.15	0.11
NZD	-0.02	-0.08	0.04	0.03	0.04	0.06	0.01	0.03	-0.04	-0.06	0.07	0	0.06	-0.10	0.05	0.06	-0.01
PHP	0.01	-0.05	0.04	0.11	0.07	0.10	0.05	0.10	-0.03	-0.03	0.11	0.06	0	-0.07	0.03	0.06	0.08
LKR	0.00	-0.02	-0.11	-0.09	-0.09	-0.12	-0.06	-0.13	-0.11	-0.06	0.03	-0.10	-0.07	0	-0.11	0.01	0.00
SGD	-0.01	-0.06	0.03	0.02	0.01	0.04	-0.01	0.02	-0.10	-0.12	0.08	0.05	0.03	-0.11	0	0.07	0.00
EUR	0.01	-0.05	0.09	0.05	0.09	0.11	0.06	0.06	0.02	-0.05	0.15	0.06	0.06	0.01	0.07	0	0.00
JPY	-0.01	-0.01	0.03	0.03	0.11	0.06	0.11	0.04	-0.01	0.00	0.11	-0.01	0.08	0.00	0.00	0.00	0

Endnotes

ⁱ Some of the markets we cover do not have official benchmarks, but we are able to back into the risk estimates. For example, FTSE does not have a PIIGS index, but we are able to create a derivative by starting with the FTSE Developed Europe index and removing all countries except Portugal, Italy, Ireland, Greece and Spain. The remaining stocks are then reweighted in proportion to their original weights. In this report we will refer to these derivations as benchmarks, although we will only use the provider's name (e.g. FTSE) for their official indexes.

ⁱⁱ The components of a risk forecast are the portfolio holdings, its factor exposures, the covariance matrix, and stock-specific risk. In order to decompose the change in risk of a benchmark or portfolio, we employ the following methodology: We first look at the impact of the change in holdings, so we use last period's risk model with the current portfolio to calculate a risk forecast, and the difference is attributable solely to the change in holdings. Next, to evaluate the change in stocks' characteristics, we update the factor exposures, and again use last period's risk model, but current holdings and exposures. Third, we look at the impact of specific risk changes by using current specific risk estimates but the prior period's covariance matrix. We calculate the impact of changes in correlation by using last period's correlations with all the other data as of the current period. Finally, the residual is the impact of the change in factor volatility. While the ordering described above will affect the results, we find that the results do not change substantially when we change the order. Intuitively we believe that the biggest impact will come from change in factor volatility, and our results bear out our intuition.

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