Does an Apple a Day Make the US Economy Healthier?

March 2012

Putting Apple's Performance in Perspective

In February, defensive sectors in the US continued to underperform the broad market as measured by the MSCI USA IMI Index, eliminating gains seen since the middle of the last year. Conversely, Energy and Information Technology (IT) outperformed by 3% and 1.9%, respectively (see Figures 6 and 7 in the Appendix). The outperformance of the Energy sector was driven by the beneficial effect of increasing oil prices for oil companies. The IT sector, on the other hand, was dominated by a single stock: Apple. The star performer of the sector started February with a 17.5% weight in the MSCI USA Information Technology Index and returned 18.8% for the month.

The euphoria about Apple has been around since well before last year, and continued to be fueled by strong performance, publicity generating product releases and market share dominance in the newest sector of the market. Furthermore, the company recorded revenues of $46 billion in the fourth quarter of 2011, beating EPS expectations by 36%.

When we think about Apple and the legacy of Steve Jobs, it provokes images of beautifully streamlined innovative products that are perhaps "too cool to fail." Each iteration, whether it is this month's iPad3 or last year's iPhone4S, creates an overwhelming euphoria for techies and non-techies alike, streaming through our minds and into our hands as seamlessly as the App Store's scrolling download tally. We're 25 billion and counting.

As we descend back to earth we start to ponder what this technological icon is really telling us about the state of the world. Is it possible that Apple is some sort of anomaly? What would happen one day if the latest iGadget didn't have a line around the block anticipating its midnight release? What if Apple didn't exist?

Concentration Is Not Uncommon – Coolness Is

Having one stock dominating a sector's structure is not exceptional in the US market. As Table 1 shows below, the Telecommunication Services and Energy sectors have an even more concentrated distribution of stock weights than the IT sector. AT&T accounted for half of the Telecommunication Services sector, whereas Exxon Mobil – recently dethroned by Apple as the largest public company in the US – took up 27% of the Energy sector. These large companies are considered mature, stable and representative of their industries, so they are not perceived to distort the characteristics of their sector.

Table 1: Top 5 Securities and Their Weights by MSCI USA Index Sectors, 31 Jan 2012

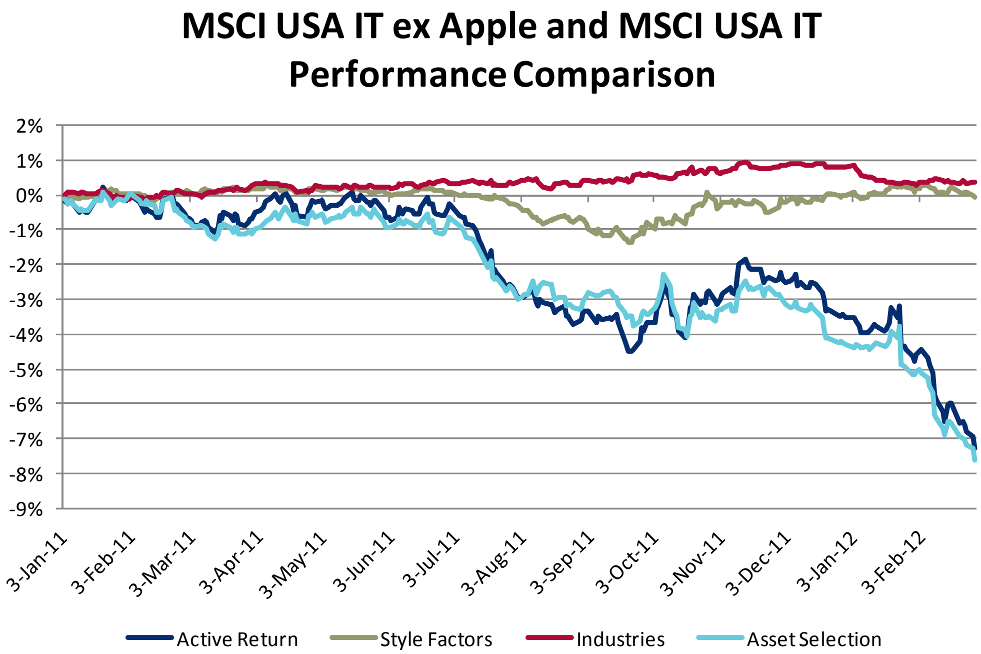
Top 5 Securities by MSCI USA Sector			
Energy		**Health Care**	
EXXON MOBIL CORP	27.4%	JOHNSON & JOHNSON	12.5%
CHEVRON CORP	13.9%	PFIZER	11.5%
SCHLUMBERGER	6.8%	MERCK & CO	8.1%
CONOCOPHILLIPS	6.0%	ABBOTT LABORATORIES	5.8%
OCCIDENTAL PETROLEUM	5.5%	UNITEDHEALTH GROUP	3.9%
Materials		**Financials**	
DU PONT (E.I) DE NEMOURS	9.9%	WELLS FARGO & CO	8.6%
MONSANTO CO	9.2%	JPMORGAN CHASE & CO	8.5%
FREEPORT MCMORAN C & G B	9.2%	CITIGROUP	5.2%
DOW CHEMICAL CO	8.3%	BANK OF AMERICA CORP	4.2%
PRAXAIR	6.7%	BERKSHIRE HATHAWAY B	4.2%
Industrials		**Information Technology**	
GENERAL ELECTRIC CO	15.0%	APPLE	17.5%
CATERPILLAR	5.3%	IBM CORP	9.5%
UNITED TECHNOLOGIES CORP	5.1%	MICROSOFT CORP	9.2%
3M CO	4.4%	GOOGLE A	6.1%
UNION PACIFIC CORP	4.2%	INTEL CORP	5.7%
Consumer Discretionary		**Telecommunication Services**	
MCDONALD'S CORP	7.2%	AT&T	50.0%
AMAZON.COM	5.0%	VERIZON COMMUNICATIONS	30.6%
HOME DEPOT	4.9%	CENTURYLINK	6.5%
DISNEY (WALT)	4.9%	CROWN CASTLE INT'L CORP	4.0%
COMCAST CORP A (NEW)	3.9%	WINDSTREAM CORP	2.0%
Consumer Staples		**Utilities**	
PROCTER & GAMBLE CO	13.0%	SOUTHERN CO	9.1%
COCA-COLA CO	10.5%	DOMINION RESOURCES	6.6%
PHILIP MORRIS INT	9.9%	DUKE ENERGY CORP	6.6%
WAL-MART STORES	8.7%	EXELON CORP	6.1%
PEPSICO	7.8%	NEXTERA ENERGY	5.6%

What differentiates Apple is its less tangible “cool” status that it has acquired over the recent past to the detriment of its peers. This may lead investors to wonder whether Apple is really representative of information technology companies or if it tilts the sector toward its own characteristics. They may also wonder what could happen if this peculiar star company loses the favor of the market (and clients) and, consequently, its influence over the IT sector.

The Barra US Equity Model (USE4) can help answer some of these questions. Instead of analyzing the characteristics of this particular stock, we chose to compare two portfolios through this model: one of them is the MSCI USA IT sector portfolio, which will be used as a benchmark; the other one is the same portfolio without Apple (called ‘MSCI USA IT ex Apple portfolio’). This portfolio will show the mirror image of Apple’s characteristics – which complicates the interpretation – but it would provide a more direct answer to the relevant question: What if Apple didn’t exist?

Furthermore, it has to be noted that this portfolio is not a perfect representation of an IT sector without Apple, since the disappearance of a large player obviously would modify the industry's structure in the medium term, but it can be a meaningful proxy for the modified IT sector in the short run.

Figure 1: Performance Attribution of the MSCI USA IT ex Apple Portfolio Relative to the MSCI USA IT portfolio, USE4 model



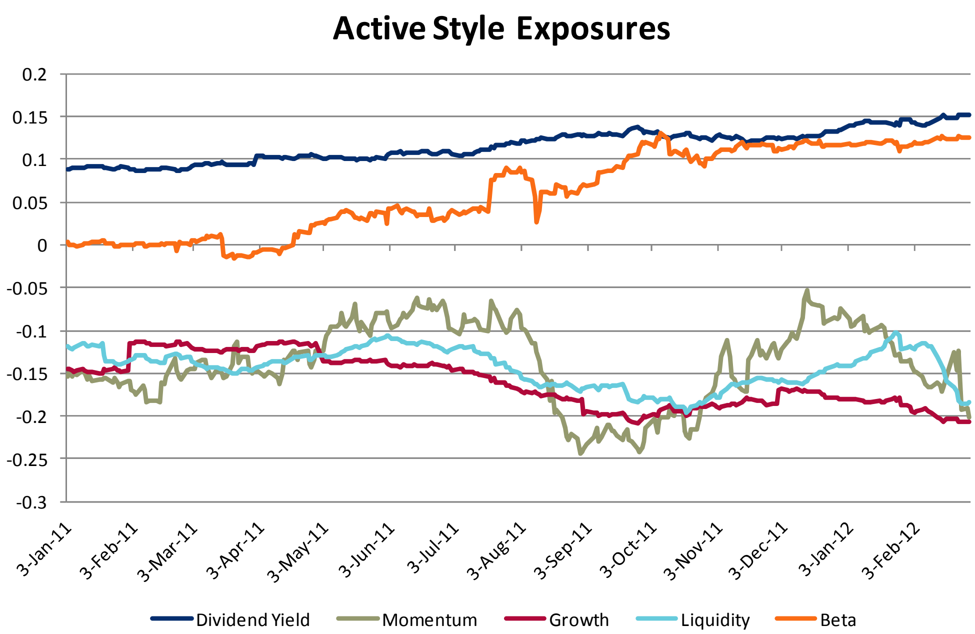
Performance

Figure 1 shows the performance attribution of the MSCI USA IT ex Apple portfolio relative to the MSCI USA IT sector. As a smaller scale mirror image, it highlights Apple's exceptional recent performance in the IT sector. Had it not been included in the portfolio, investors would have realized 7% less return since January 2011. The USE4 model also shows that most of this performance was attributed to the asset selection component. Cumulatively, style and industry factors have only had a minor contribution, but there were periods between August and November 2011 when they had noticeable impact.

This result shows that Apple was an exceptional stock in terms of performance, but did not change style and industry factor exposures of the sector portfolio persistently. This can also be seen in Figure 2 where we show the most important active style exposures of the 'ex Apple' portfolio and their time evolution since January 2011. These exposures are mostly in a +/-0.25 band, with only the Momentum factor getting closer to the limit in the summer of 2011, following a July rally in Apple.

These values confirm that compared to its sector peers, Apple is a more liquid, and more growth-oriented stock. It is also interesting to note that since May 2011, the company also started to become a lower beta stock.

Figure 2: Active Style Exposures of the MSCI USA IT ex Apple Portfolio Relative to the MSCI USA IT Portfolio



Risk

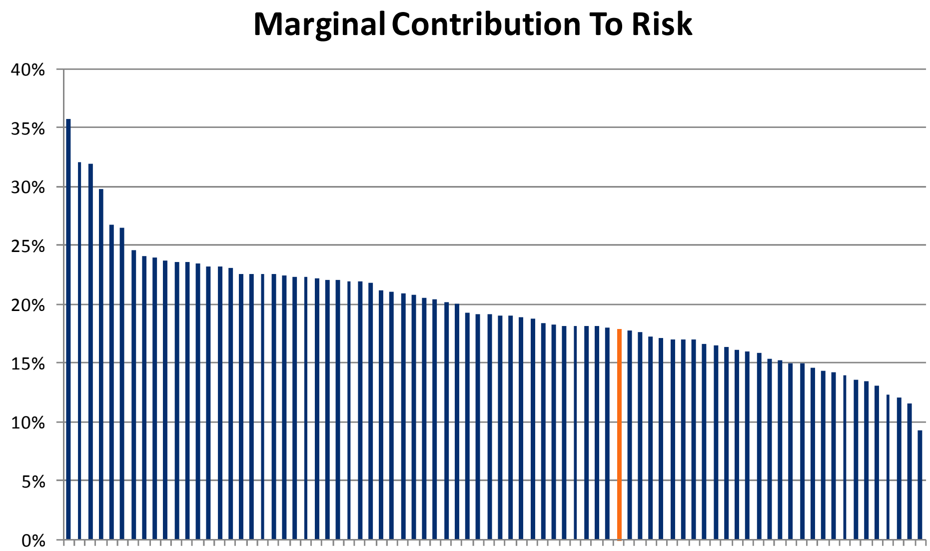
In the previous section, we showed that Apple was clearly different from its peers in terms of performance. Now we are going to look at what influences it had on the risk of the IT sector portfolio using the USE4L (long-horizon) model. A first evaluation can be done quickly by looking at the marginal contribution of the stock to portfolio risk[1]. Figure 3 ranks stocks of the IT sector portfolio in descending order of their marginal contribution to the total risk of the portfolio. Unlike in terms of performance, Apple is a below median company from the perspective of risk contribution, ranking 52nd among 80 stocks. It also means that Apple contributes to the total risk of the portfolio slightly below the proportion of its weight.

In line with this observation, the effect of totally removing Apple from the IT sector portfolio did not significantly increase the risk forecasts, as seen in Figure 4. The risk profiles for the two portfolios were almost identical until August 2011. But even after that date the difference has never exceeded 0.5%. The USE4 model allows a finer analysis of the difference in the risk profiles of the two portfolios, as it gives a breakdown of active risk into common factor and asset specific component.

The results of the analysis are shown in Figure 5. The findings are similar to the performance attribution case. First, the active risk level started to increase in July 2011, parallel to a rally in Apple. The trend has been upward since then, and currently the active risk forecast stands at 3.5%. As for the sources of the active risk, we again find that the 'ex Apple' portfolio was dominated by asset selection risk. Since August 2011, the active risk coming from common factors was largely due to style factors.

[1] Marginal contribution to risk measures the sensitivity of the portfolio's risk to the weight of the stock. A particular stock's contribution to portfolio risk depends also on the stock's weight and can be obtained by multiplying marginal contribution with stock weight.

Figure 3: Marginal Contribution to Risk of the Stocks in the MSCI USA IT Sector Portfolio, as of January, 23, 2012



Note: Apple is highlighted in orange

Figure 4: Risk Forecasts of the MSCI USA IT Sector and MSCI USA IT Sector ex Apple Portfolios, USE4L model

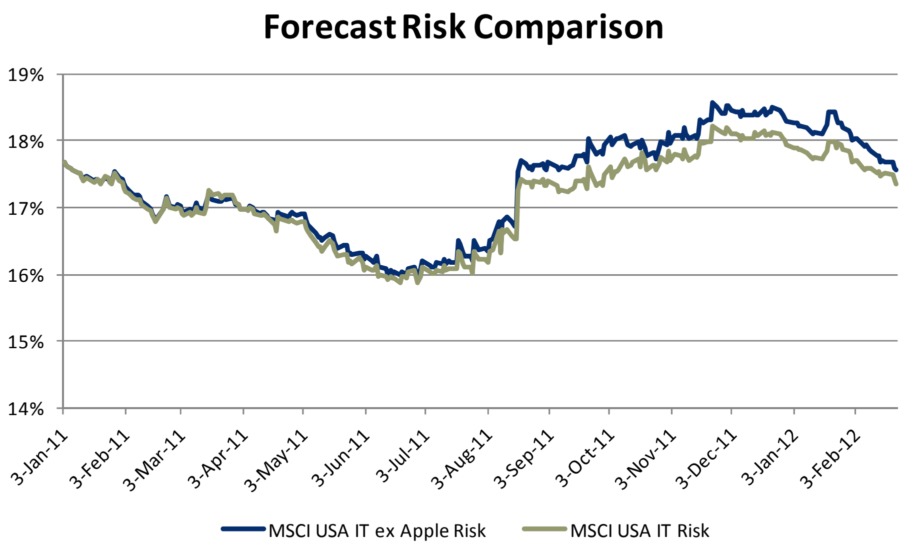
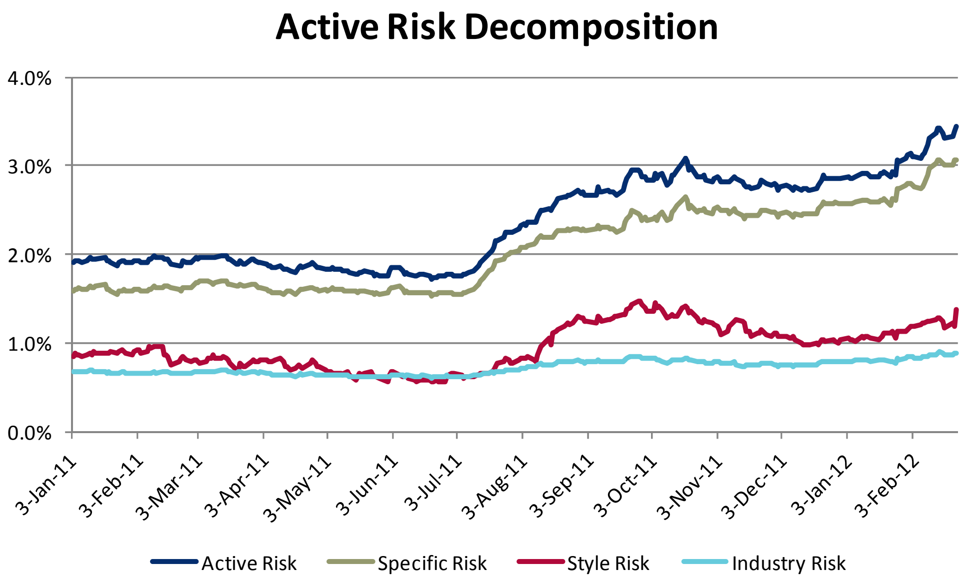


Figure 5: Decomposition of the Active Risk of the MSCI USA IT ex Apple Portfolio Relative to the MSCI USA IT Portfolio, USE4L Model



Conclusion

Despite its spectacular performance, Apple is perceived by many as a company that is rather special, and not really representative of its sector. In this report, we used the Barra US Equity Model (USE4) to analyze what would have happened to the IT sector if its largest company had not existed. We found that the performance differential that would result from excluding Apple could mainly be attributed to non-systematic factors – as expected. But we also found that following rallies in the stock price the Momentum factor also played an important role.

From a risk perspective, we found that Apple is nowhere as exceptional a company as it is from a performance perspective. This is apparent because the riskiness of an IT sector portfolio increases only slightly when Apple is removed from it. Furthermore, similarly to the performance attribution, the active risk is mainly due to the asset specific component, with relatively lower active risk coming from the different style factor profiles.

Appendix

Figure 6: Performance of GICS Sector Indices Relative to the MSCI USA IMI Index

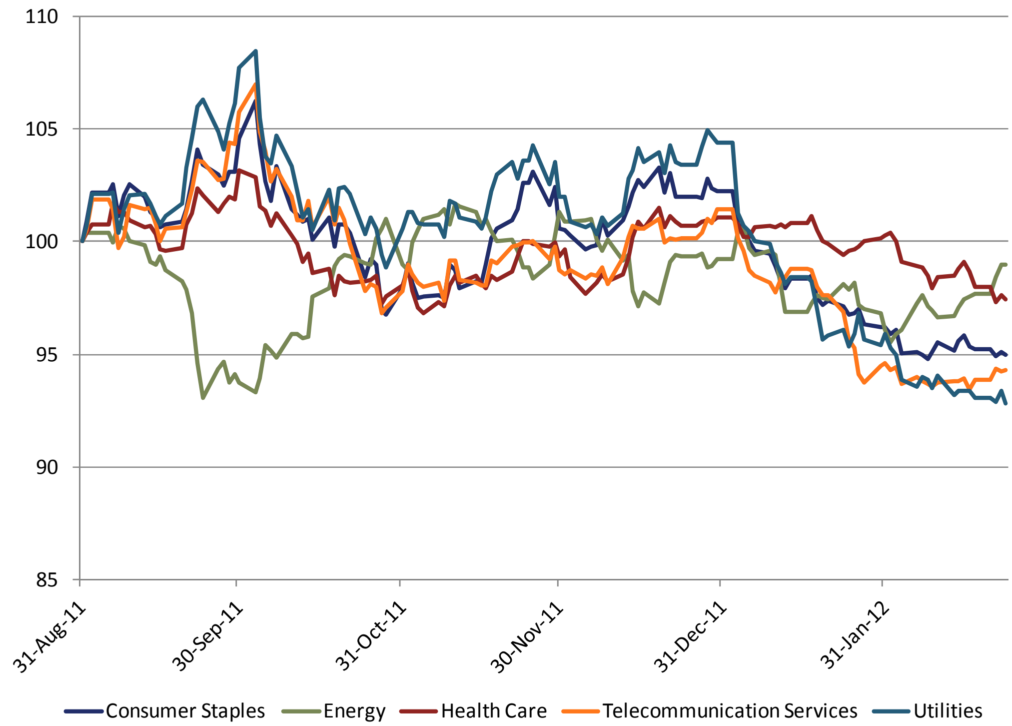


Figure 7: Performance of GICS Sector Indices Relative to the MSCI USA IMI Index

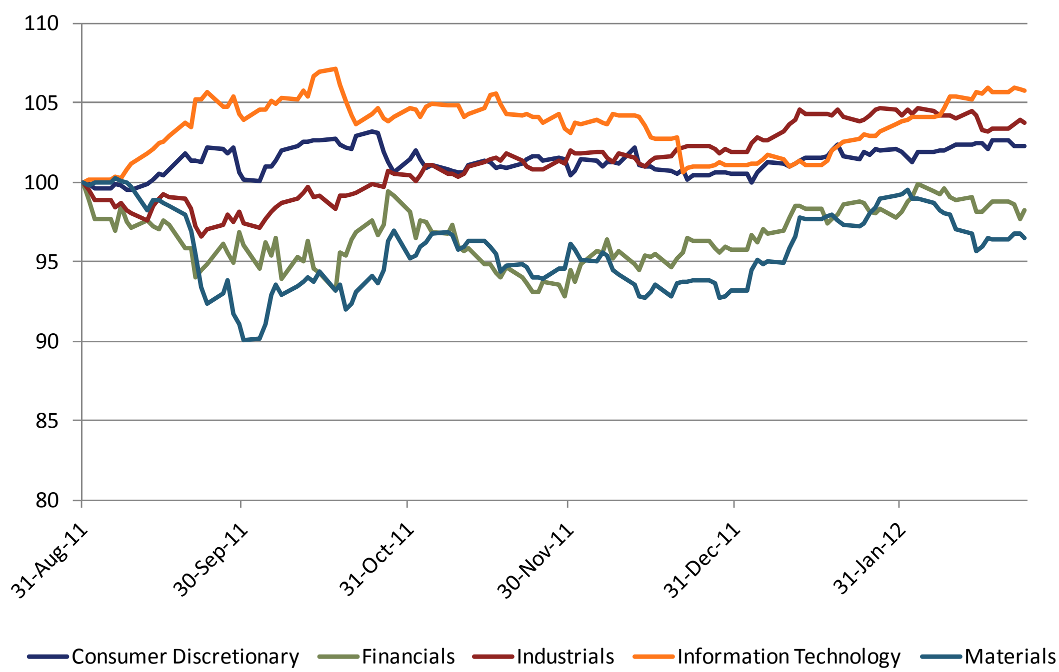


Figure 8: Performance of the Risk Forecast for the MSCI USA IMI (1995 – 2012).

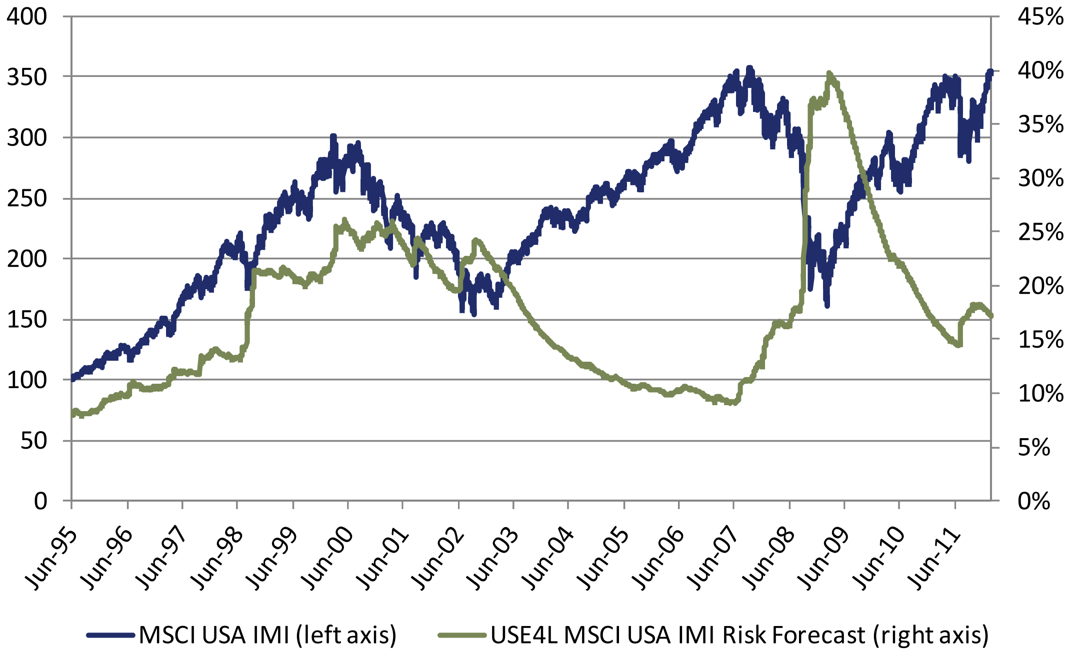


Figure 9: Performance of the Risk Forecast for the MSCI USA IMI, last 6 months

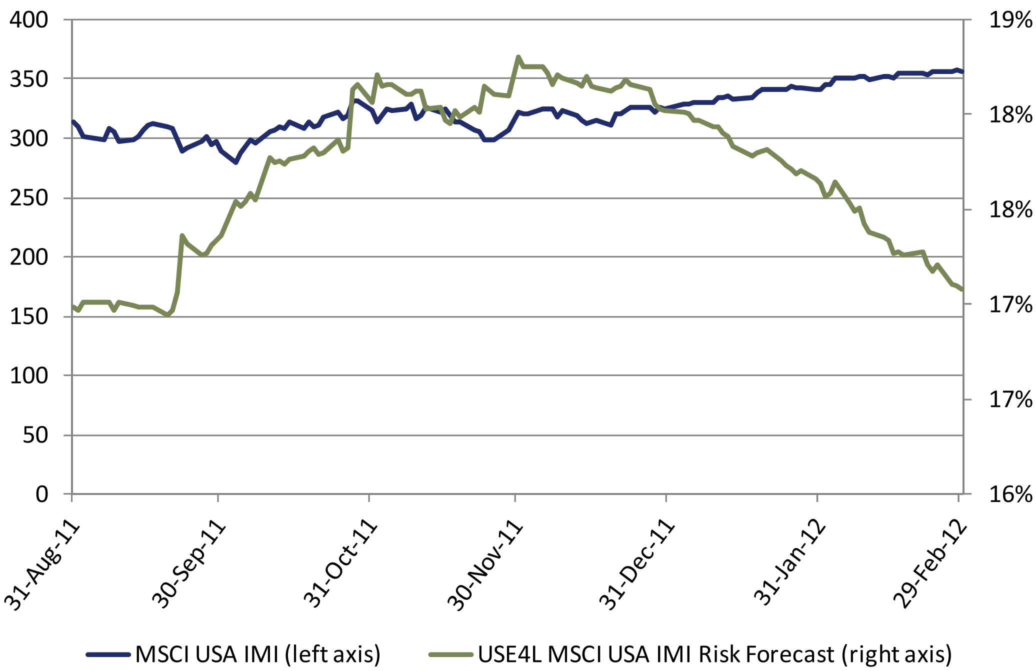


Figure 10: Cross-Sectional Volatility of the MSCI USA IMI Index versus the VIX Index (1994- 2012)

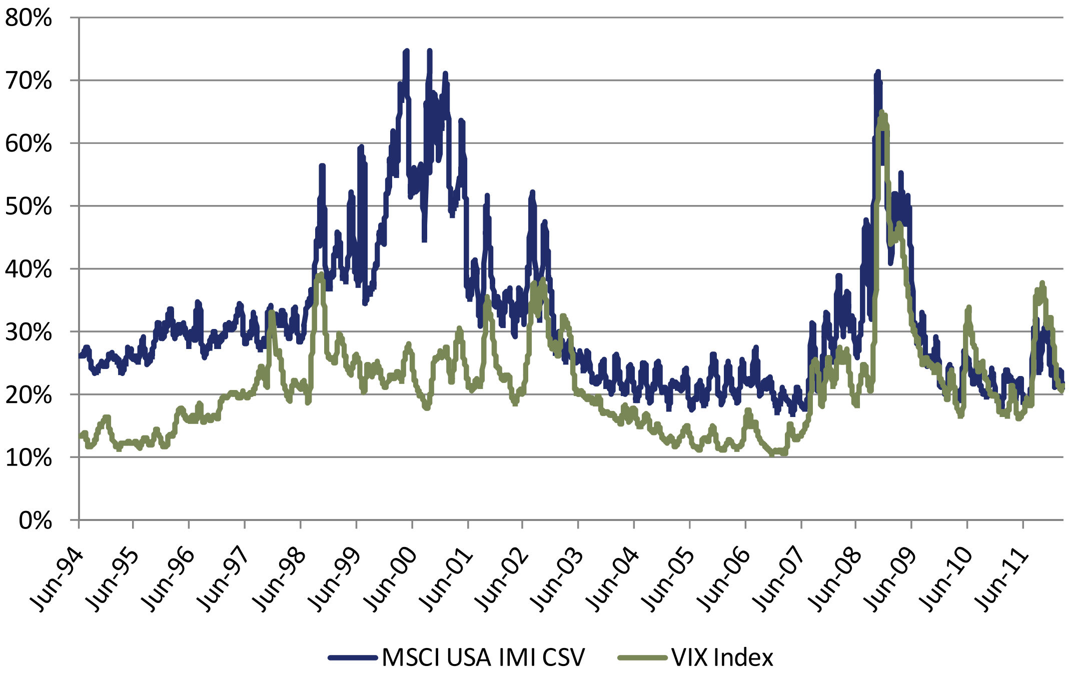
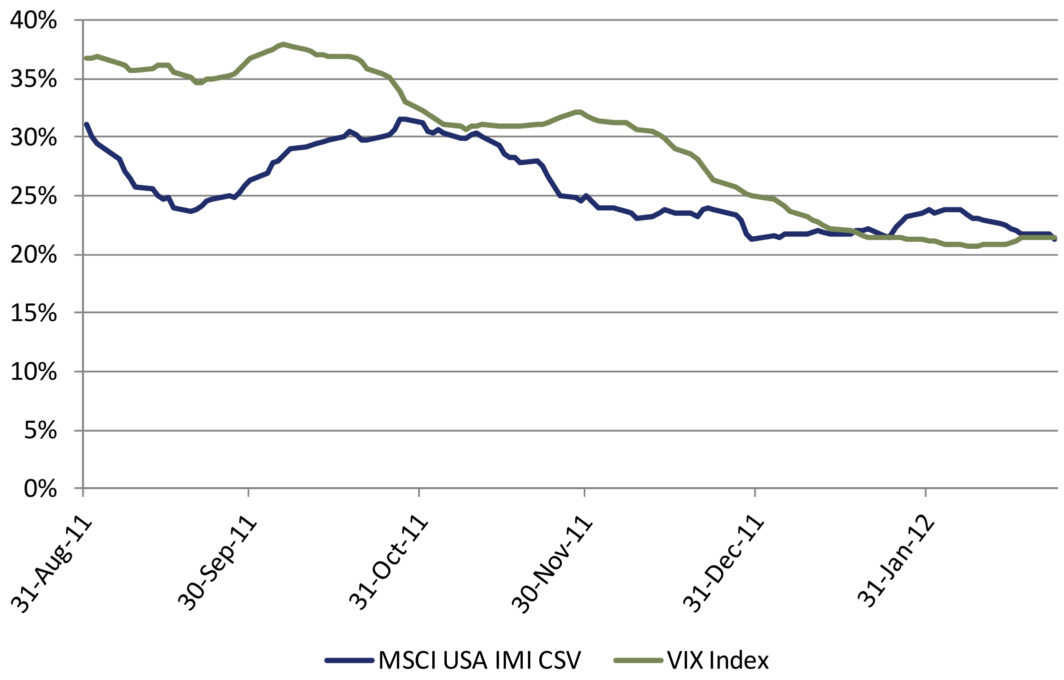


Figure 11: Cross-Sectional Volatility of the MSCI USA IMI Index versus the VIX Index, last 6 months



Note: we show 20-day moving average of CSV and VIX Index data

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