



The On and Off of “Risk-On/Risk-Off”

#11

There was a lot going on in the financial world in early 2008, so the IPO of a company called Riskmetrics on 24th January was not exactly front page news at the time. Riskmetrics was the culmination of a project initiated roughly twenty years earlier by the then CEO of JP Morgan to allow him to gauge the level of risk being run by the firm. It was where the term “Risk-On/Risk-Off” originated, as far as we can tell. Of course, one of the theoretical underpinnings of the methodology was brought into the world even earlier by Fischer Black and Myron Scholes in their famous 1973 paper. But a funny thing happened along the way – as price movements across asset-classes were ever increasingly summarised by mean-variance statistics, so the correlation across the asset classes rose. It even took Scholes’ hedge fund LTCM by surprise in 1998 when it went broke as a result of sudden correlation between Russia Treasury-bills, Danish Mortgages and Off-the-run Treasury Bonds. By 2009, we’d all become familiar with “Risk-On/Risk-Off” and the fact that “correlation tends to one” in a crisis.

But things appear to be changing once again and in particular so far in 2013, as correlation in financial markets has started to fall. In fact, the new vernacular seems to be much more “Great Rotation” than “Risk-On/Risk-Off”. And this, it turns out, is a much more traditional approach to optimal asset allocation choice through a normal business cycle (remember that through much of the “Risk-On/Risk-Off” era, we thought that business cycles were a thing of the past). It’s possibly why Equities are continuing to perform well – positive growth but with no immediate prospects of inflation or higher short-term interest rates. It may also be why some of the newer Alternative Investment classes are struggling.

[We trace “Risk-On/Risk-Off” back to 1989, to a Risk Management project later called RiskMetrics](#)

It wasn’t a red-letter day in the history of finance. 27 February 1989. It was the day I started work as an intern in the Economics Department of Morgan Grenfell & Co. Limited. The FT-SE rallied (to just below 2000); the S&P 500 fell (to 288); oil was up (\$17 per barrel); the long bond rallied (9.2% yield); and the Caracazo riots broke out in Venezuela as a result of IMF-mandated austerity measures. Much more consequentially than my learning to draw charts in Lotus 123, JP Morgan CEO Sir Dennis Weatherstone was presented with the first 4:15pm daily report from his Risk Management Department detailing the risks that the firm was running. This is where Value-at-Risk (VaR) was born and, believe it or not, this is where we reckon “Risk On/Risk Off” was born (as you’ll see though, it took us a while to name it thus).

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By the early 1990s, modern risk management techniques were catching on more generally

Fast forward to 1992. Fresh from my BSc in Economics with Statistics, I started work as a graduate at Morgan Grenfell & Co. Limited. This was a less auspicious week in financial history – I joined on Monday; Sterling crashed out of the ERM just two days later. Over at JP Morgan, Sir Dennis Weatherstone decided that the risk measurement methodology – dubbed Riskmetrics – should be passed on to the industry more broadly. The research papers were duly written, and JP Morgan made them freely available to all market participants. It may have started as a JP Morgan Risk Management project, but "Risk On/Risk Off" was now out in the market.

1994 saw the Great Bond Market Crash ...

In 1990-91, the US economy had been in recession. It wasn't the deepest recession in history, but the economy was struggling to recover under the weight of the S&L bust even though short-term real interest rates were down at zero (it meant a Fed funds rate of 3% at the time). Things speeded up in the course of 1993 – growth ended the year at a heady 5.7% annualised rate ("a torrid pace", as I think Alan Greenspan called it at the time). Bonds started to sell-off – the 30Y Treasury had reached as low as 5.75% in the previous autumn. When the Fed tightened in February 1994, it wasn't the most unexpected event in financial history. But suddenly it didn't matter what the Fed did – it was "behind the curve" as far as inflation was concerned. Bond yields sky-rocketed (the Long Bond yield reached 8.25% in early 1995), the MBS market cratered, and there was carnage in some other corners of the Credit market (in December, Orange County declared bankruptcy on account of losses in its investment portfolio). If you haven't recognised it yet, this was the great Bond Market Crash of 1994. Participants and policy-makers were taken aback by the speed of the price declines – negative convexity and delta-hedging strategies shouldered a large part of the blame once the Fed and the IMF and the BIS wrote their reports.

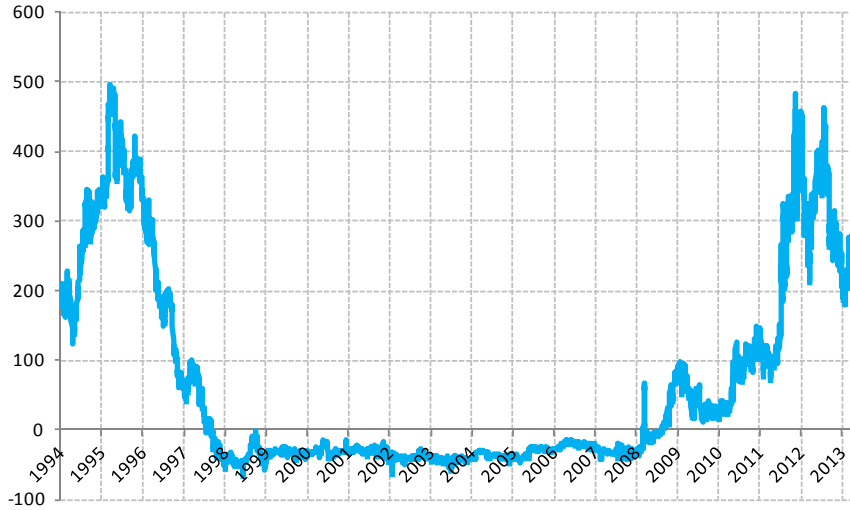
...and its impact was felt in bond markets around the world

The 1994 Bond Market Crash wasn't just a US phenomenon. The end of easy Fed money, the convulsions in the US domestic bond market and the uncertainty of a Presidential Election (in Mexico) turned US investors off Mexico risk. Many had taken the risk via so-called Tesobonos, which was Mexico credit risk albeit denominated in US-dollars. But Mexico hadn't hedged the risk, and when the peso peg failed in December under the weight of rising demands for repayment, Mexico was suddenly struggling to roll-over its debts. So began the Tequila Crisis, which not only ensnared Mexico, but Argentina, too.

And in Europe, though the region was certainly already dealing with challenges of its own in 1993 (under incessant pressure following Sterling's devaluation in September 1992, policy-makers were eventually forced to widen the fluctuation bands for all currencies in the system except the Dutch guilder), higher US Treasury bond yields was the signal for peripheral European bond yield spreads to widen dramatically. In fact, there is an uncanny similarity between the Italy-German 10Y Bond yield spread in 1994-96 and 2011-13 (see Figure 1) – it was currency risk in the earlier period; it's default risk now (I've always had a funny feeling that if Sir Isaac Newton had turned his hand to financial risk management, he might have proposed a law that "risk cannot be created nor destroyed, just moved around").



Figure 1: Yield spread (bps) between 10-Year German Bunds and Italian BTPs

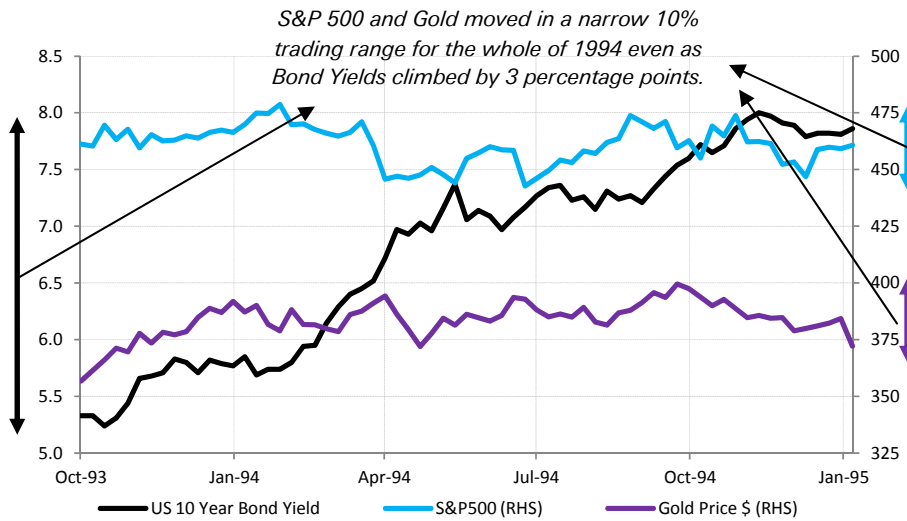


Source: Bloomberg Finance LP, Deutsche Bank

...but other asset classes like Equities and Gold were spared the worst

That said, although the 1994 Bond Market Crash had its tentacles, it didn't envelop everything. The S&P-500 index was down just 1% in 1994 as a whole – and throughout the year traded in a narrow 10% range. As for gold, it also traded in a 10% range for the whole of 1994 – by comparison the price of gold fell by nearly that much in *one session* last month.

Figure 2: 10-Year Treasury Yields, S&P500 and Gold in the 1994 Bond Crash



Source: Bloomberg Finance LP, Factset, Deutsche Bank

Also in 1994, the hedge fund LTCM was founded – Titanic-like in its supposed unsinkability

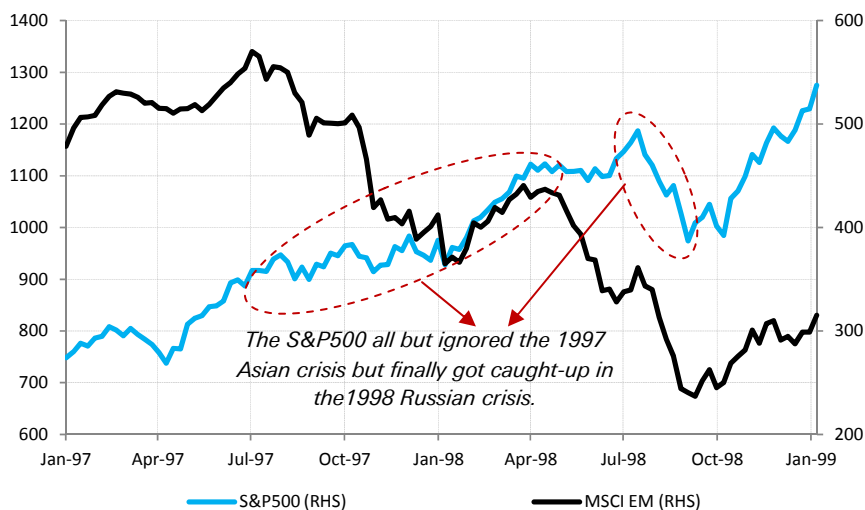
One final item from the news in 1994 – it may have been a bad year for bonds, but it didn't deter a certain John Meriwether from opening a hedge fund called Long-Term Capital Management that, per the academic expertise of its new board member Myron Scholes and Robert Merton, was going to deploy cutting-edge quantitative finance techniques to invest on a Relative Value basis across global markets, and to be protected in risk terms from anything other than an incredibly improbably rare shock, at least based on the historic data.



The Asia crisis started in 1997, but with limited spillovers beyond the region to begin with

Things calmed down by the second half of 1995 and into 1996 as it became apparent that the Fed’s about face in interest rates was successfully sustaining the recovery, although Britain’s Barings Bank was felled in the meantime by unauthorised stock trading, and Japan’s Sumitomo Corporation was humbled by unauthorised Copper trades. Otherwise, though, things were relatively quiet. And the World Bank readied publication of “The East Asia Miracle”, documenting the apparent economic success being seen in that part of the world. But then in 1997 it all started to go wrong again. Suddenly Thailand, Malaysia, South Korea & Indonesia were all in Crisis mode as they struggled to stop an exodus of foreign capital that had been spooked, not for the first time, by the failure of a domestic exchange rate peg. With most of the foreign money in equities, this was where the action was this time – Thailand’s SET-50 index fell by 87% from peak to trough in local currency terms between 1996 and 1998; South Korea’s KOSPI index fell by 70%. But US markets, at least, were relatively unmoved – this was only Asia’s Crisis, remember. In fact, from the start of 1996 to mid-1998, the S&P 500 index doubled, while 10Y US Treasury bond yields were unchanged at around 5.5%.

Figure 3: S&P 500 vs. MSCI EM Equities: 1997-1998



Source: Bloomberg Finance LP, Deutsche Bank

Russia’s debt default in August 1998 infected debt markets globally, in many unexpected ways

But then came Russia in August 1998 which, if you’ll pardon the analogy, was like the transmission of H5N1 from bird to human. Russia didn’t have much economic business in Asia, but it did have (as in Asia) another shaky exchange rate peg, significant capital flight and (worse than in Asia) a challenging fiscal position (deficit plus a backlog of unpaid public sector wages). An IMF-imposed austerity plan (albeit in return for a \$10.7bn loan package) also wasn’t helping. But Russia was mostly a debt market as far as foreign investors were concerned, unlike the equity-centric markets in Asia.

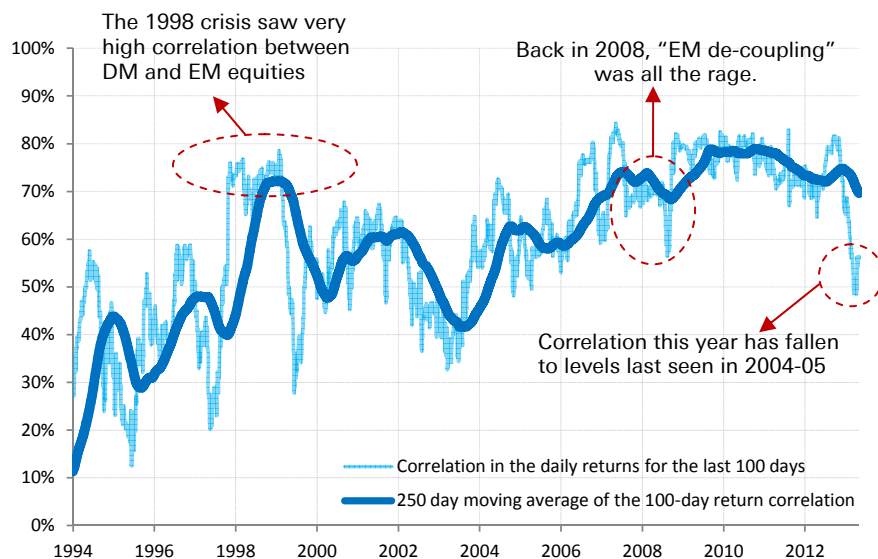
1998 was the first real “Risk-Off” crisis, even though most people still didn’t know what that was

In the weeks following Russia’s unexpected debt default, global debt markets were shook to their core in ways that almost no-one – at the time – could initially understand. Why, for example, was Denmark’s MBS market suddenly in dire-straits? And what on earth were 29.75 year US Treasury bonds doing at



such an extraordinary discount to 30 year Treasury bonds? The answer is that it was "Risk-Off" at LTCM (it was lights off shortly thereafter). Suddenly, what seemed previously like a well diversified portfolio of risk positions was correlated to a frightening degree. But for all the bond market carnage, there wasn't any lasting damage in equity-land. Yes, stocks had plunged by 20% in October, but the S&P500 still ended up on the year.

Figure 4: Correlation between MSCI World and MSCI EM Equity indices



Source: Bloomberg Finance LP, Deutsche Bank

Regulators gave banks more leeway in the mid-1990s to manage their capital based on mean-variance risk-management technology

Some people were learning the hard way about unanticipated correlation, but many still weren't, because bond and equity markets were still, for the most part, not directly connected. Despite the market turbulence of the preceding years, for example, regulators (in the 1995 "Amendment to the [Basel] Capital Accord to incorporate market risks") were giving banks *more* leeway to rationalise their capital needs based on their own models, having been persuaded by Sir Dennis Weatherstone at JP Morgan and others that internal risk management processes were better equipped to do the job than arbitrary external rules (making Riskmetrics available to the whole marketplace in 1992 was now starting to make some more sense).

The US Tech bubble burst in 2000, but it was largely an Equity crisis rather than a full-blown "Risk-Off" crisis

More risk management innovation was on the way, in time. But first came the 2001 recession (which, as we've written previously, is not now a recession in the "two consecutive quarters of negative GDP growth" sense), the bursting of the Tech bubble, and Enron. Of course, the 47% peak-to-trough fall in the S&P-500 from 2000 to 2002 was huge. But, by and large, this crisis was an Equity crisis as opposed to a Debt trauma, and the banking system managed relatively well (this was possibly motivated by the significant differentiation under Basel I between the 0% risk-weight applied to OECD government bonds versus the 100% risk-weight applied to Equity, but also – of course – because US property prices were rising at the time, not falling).



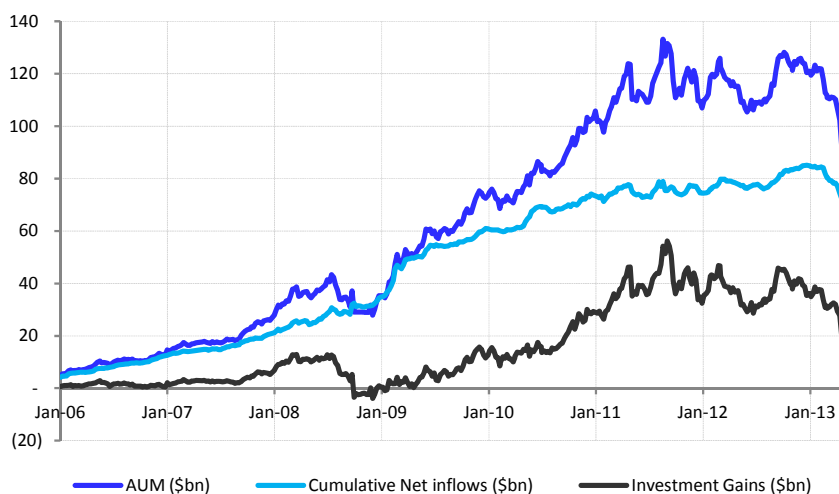
The RiskMetrics group launched CreditGrades in 2002 to link credit and equity markets

By 2002, I was in my thirteenth year in the City. I'd lived through the 1994 Bond Market Crash, the 1997 Asia Crash, and the 2000 Tech Crash. Markets seemed to be moving progressively more closely together as time passed. In the 1994 Crash, for example, US Equities fell only 10%, whereas in the 1998 Crash, they fell by 20% (remember though, they recovered quickly on both occasions) – in the equity crash of 2000, of course, prices fell by 50% and took years to recover. But then, in 2002, Riskmetrics re-enters the story, completing the theoretical loop between Debt and Equity. As the original 2002 CreditGrades technical document was quick to point out: "...the purpose of the CreditGrades model is to establish a robust but simple framework linking the credit and equity markets". Little did I know it at the time, but the birth of CreditGrades was also the birth of quantitative Capital Structure Arbitrage (Of course things didn't always go to plan, as we saw in 2005 when the downgrade of General Motors debt coincided with a bid for the company's equity by Kirk Kerkorian)

The rising correlation between traditional asset classes was facilitating the invention of new ones

Most of us still didn't quite know it, but the advent of CreditGrades methodology and its implementation by Capital Structure Arbitrage desks meant that "Risk-On/Risk-Off" now applied to Debt *and* Equity at the same time. Up until now we'd gotten used to correlation *within* an asset class (e.g. the contagion risk within Emerging markets in 1997, and between EM and Developed markets in 1998), but not *across* asset classes. Indeed, the new found correlation between the traditional asset classes was one of the reasons that new, alternative (and historically uncorrelated) asset classes came into their own. And just in case you were wondering how to gain exposure in your investment portfolio to some, livestock, cotton, sugar, natural gas, wine, fine art or just plain-old volatility; along came new forms of investment products to help you out, OEICS, ETFs and 130-30 funds, for example. Most of these new asset classes didn't yield much – or anything, in cases such as Commodities – but that didn't matter much at a time when Equities and Debt didn't yield much either.

Figure 5: The rise and fall of Commodity ETFs



Source: Deutsche Bank ETF Research
Note: Data for US Commodity Exchange Traded Products



For a brief moment prior to the Financial Crisis, all asset classes were rallying

For a brief moment prior to the Global Financial Crisis, all asset classes were rising – the old and the new. Commodities, Credit, Emerging Markets, Equity, Fine Art, Government Bonds, High-Yield, Property – all rising. Someone asked me at the time when this had last happened. I looked, but I couldn't find any precedent. With the benefit of hindsight, this was the moment just before the tidal wave hits when the tide suddenly goes out.

Figure 6: Annual returns on various asset classes

| | Equities | | Fixed Income | | | Other | |
|----------|------------|---------|-----------------------------|----------------|-----------------------|-------------------------|--------------------------------|
| | MSCI World | MSCI EM | Global Sovereign Bond Index | EM Bonds Index | Global HY Bonds Index | Commodities (CRB Index) | US House Prices (Case-Shiller) |
| 2000 | -14% | -32% | 10.9% | 13.5% | -6.2% | 24% | 14% |
| 2001 | -18% | -5% | 6.1% | 8.5% | 4.6% | -24% | 9% |
| 2002 | -21% | -8% | 8.3% | 11.0% | -1.9% | 31% | 15% |
| 2003 | 31% | 52% | 2.2% | 26.2% | 28.6% | 23% | 13% |
| 2004 | 13% | 22% | 4.9% | 11.4% | 10.8% | 17% | 19% |
| 2005 | 8% | 30% | 5.0% | 10.9% | 2.4% | 19% | 16% |
| 2006 | 18% | 29% | 3.1% | 10.3% | 11.4% | -7% | 0% |
| 2007 | 7% | 36% | 6.0% | 6.4% | 3.1% | 17% | -10% |
| 2008 | -42% | -54% | 9.2% | -9.7% | -22.2% | -36% | -19% |
| 2009 | 27% | 74% | 0.9% | 25.2% | 48.3% | 23% | -2% |
| 2010 | 10% | 16% | 3.5% | 11.1% | 13.9% | 17% | -1% |
| 2011 | -8% | -20% | 5.9% | 8.4% | 3.4% | -8% | -4% |
| 2012 | 13% | 15% | 4.3% | 16.9% | 17.7% | -3% | 6% |
| 2013 ytd | 12% | 1% | 1.5% | 0.5% | 4.5% | -2% | 2% |

Positive return for 3 consecutive years in all major asset classes was an anomalous event.

Source: Bloomberg Finance LP, Deutsche Bank, US Federal ReserveFRED database
 Note: US House Prices are the Case-Shiller 10 City Index
 Global Sovereign Bond Index, EM Bonds and Global HY Total returns from the relevant Deutsche Bank Indices

Just prior to Bear Stearns' collapse and the biggest "Risk-Off" moment in recent financial history, RiskMetrics was IPO'd

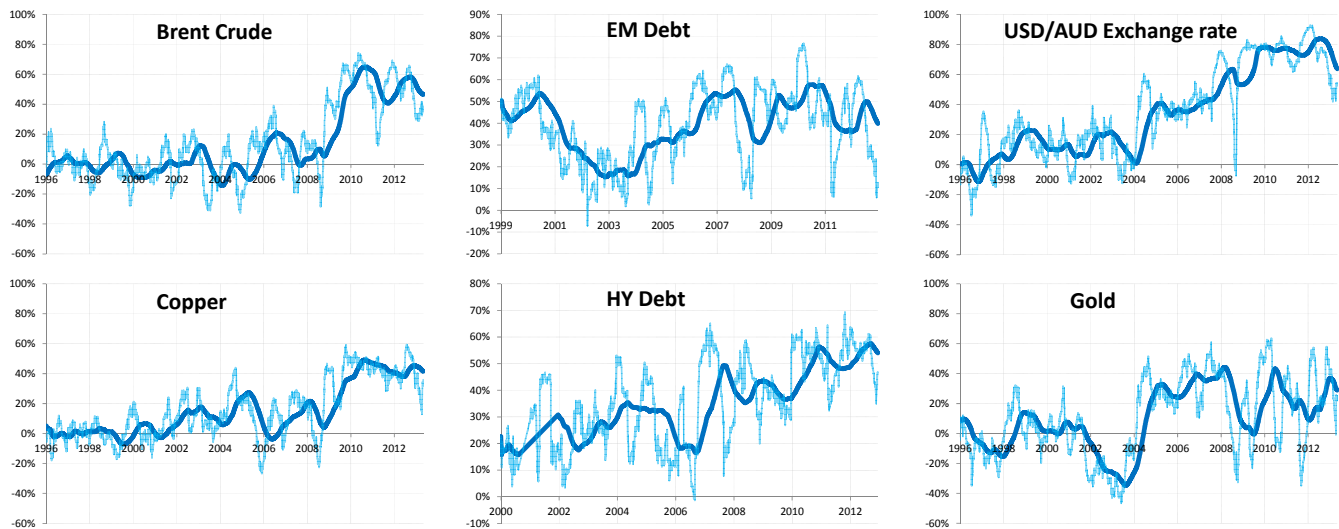
On 25 January 2008, 51 days before Bear Stearns was rescued by JP Morgan, the same Riskmetrics that 20 years ago had given Sir Dennis Weatherstone his first 4:15pm risk report, was IPO'd on the New York Stock Exchange. "Risk-On" had gone public. Pretty soon, we all knew about "Risk-on/Risk-off".

"Risk-On/Risk-Off"-ism has waned in the past year or so as price performance across markets has been more variable...

Looking back at it now, the teeth of the Global Financial Crisis – and the IPO of Riskmetrics – was the high-point of the "Risk-On/Risk-Off" mindset. As we've tried to highlight, the process of convergence across all markets was a long time in coming. And as such, it wasn't going to fade away immediately. As in the aftermath of any big crisis, we all wanted to keep more of our money closer to the exit than we did previously. But gradually we began to notice that the financial tremors we were feeling weren't the foreshock of a new quake, but the after-shocks of the old one. Markets that had become increasingly correlated in the twenty years prior to the Global Financial Crisis were moving apart again. Consider the following price returns since Jan 2010, for example: S&P-500 +46%; Nikkei +39%; Gold and Brent Crude 30%; CRB index +2%; Copper 0%, Stoxx-50 -6%; Bovespa -19%; Shanghai CSI-300 -29%. This dispersion has extended further in 2013.



Figure 7: Correlation of MSCI World Equity Index Returns with other Asset Classes



Source: Bloomberg Finance LP, Deutsche Bank

Note: Correlations shown are between the daily returns for the last 100 days with the thicker line being the 250-day moving average of the 100-day correlation

The new "Great Rotation" vernacular is also the one that preceded "Risk-On/Risk-Off"

If "Risk-On/Risk-Off" has been supplanted by anything in the past two years, it's been supplanted by the "Great Rotation". It isn't the first time that the vernacular has changed so quickly – no sooner was 1993's year of "the end of the Cold War is bullish" over than 1994 became the year of "the Global Capital Shortage". Interestingly, though, asset allocation prior to the "Risk-On/Risk-Off" era that had its first beginning in 1989 was very much "Great Rotation" (albeit we didn't call it that back then), the idea that as a business cycle matured from expansion through peak and through contraction to trough, so a portfolio's optimal asset allocation choice varied from bonds to stocks to property to cash. This earlier era, of course, had much different correlation characteristics *across asset classes* than we became used to in the "Risk-On/Risk-Off" era. If the recent data is to be believed, perhaps we are returning to a similar correlation state now.

Some similarities between 1993 and 2013 – and what it meant for stocks

I recently celebrated 20 years at Deutsche Bank since joining the firm from university. In early-1993, the US economy was struggling to achieve escape velocity after an earlier recession with credit-crunch overtones, while Europe was struggling to convince markets that it would successfully take the next steps towards a fuller union. Twenty years on, and despite everything that has supposedly changed along the way, it's interesting to me that – in the US and Europe at least – policy-makers are dealing with strikingly similar problems (and while we're at it Japan is still struggling to pull out of recession).

In 1994, even as Bond yields rose, Equities came out unscathed because "Risk-on/Risk-off" was still in its infancy. And in the subsequent five years, as the US economy kept growing and Europe did take the next steps, the S&P500 almost doubled, while the Euro-Stoxx 50 index tripled. Perhaps this is helping comfort equity investors today, that as we prepare for Bond yields to rise once again, 'Risk-on/Risk-off' seems to be receding from its heady days and is being replaced by 'The Great Rotation'. After all, the last 'Great Rotation' of 1993-4 was good for stocks – so maybe the 2013 Rotation will be equally positive.



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Appendix 1

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