

## **Lehman Five Years Later...Lessons and Threats**

The five-year anniversary of the Lehman bankruptcy and onset of financial crisis is here and so too is the raft of opinion pieces around what caused the meltdown and how it is different this time. In a recent interview with Charlie Rose, when asked about the risk of another 2008 event, Morgan Stanley CEO James Gorman said, "The probability of it happening again in our lifetime is as close to zero as I could imagine." Pointing to higher levels of liquidity, better management practices embraced by banks, and more frequent communication with regulators, Gorman sees the banks as "dramatically healthier".

In his role as chief of one of the largest securities firms in the world, Gorman's views on risk are of great importance. Perhaps he didn't mean exactly what he said, but as the words came from his mouth, one has to wonder if Gorman instantly wanted to take them back. His confidence reminds us of the rock solid certainty professed by none other than Joseph Cassano, architect of AIG's impressively sized derivatives portfolio. In 2007, when asked about the riskiness of the credit positions his team was amassing, Cassano said, "It is hard for us, without being flippant, to even see a scenario within any kind of realm of reason, that would see us losing one dollar in any of these (credit default swap) transactions".

We can only hope that Gorman's highly sanguine views on the state of global market risk are not symptomatic of excessive optimism felt by CEOs of other systemically important financial institutions. Ongoing vigilance is a must. True, as Gorman stated, securities firms like Morgan Stanley have smaller balance sheets and more liquidity. They also take far less proprietary risk, leaving them with lower VaR. And to be sure, financial stocks have performed quite well as share price fluctuations have been modest.

But while there has been a deleveraging of risk exposures since the crash, today's markets are vexed by a potent mix of new and unwelcome sources of instability. Since the 2008 crisis alone, at least six distinct systemic threats have emerged: 1) sovereign/banking system contagion 2) cyber attacks 3) technology and market structure vulnerabilities 4) policy dysfunction 5) Middle East unrest and 6) the withdrawal of Central Bank stimulus. Each of these can easily underwrite the next substantial market volatility event. What follows is a short discussion of the nature and importance of these sources of risk.

### **Sovereign/Bank Contagion**

While economic green shoots are emerging from Europe, we should not forget just how close to complete collapse the Eurozone was at various points between 2010 and 2012. Unprecedented volatility plagued the sovereign debt markets of southern European countries resulting in rapid capital flight among frightened investors. European banks, with exposure to the peripheral debt, saw their market caps plunge which in turn left them vulnerable to a funding squeeze. The damage to investor confidence, especially amidst so uneven a policy response, was nearly irreversible.

Tighter sovereign bond spreads, higher share prices for banks, and a Eurozone PMI that recently surpassed 50 are positive developments. These should not, however, be confused with the system's underlying fragility. Mario Draghi's "whatever it takes language" appears to have been so powerful that the OMT mechanism he created to backstop weaker member countries has not yet needed to be implemented. We should hope the OMT remains a rescue tool on the sidelines as it is a controversial one among policymakers. We should also hope that further bailouts are not needed for weaker nations, as they will surely test the resilience of creditor countries. On this front, even the officials are not optimistic. This week, Luc Coene, an ECB Governing Council member stated, "We will have to make some extra efforts — certainly once, perhaps twice", when referring to the need to provide further capital to Greece.

Most professionals agree that Eurozone banks remain vastly undercapitalized (price to book ratios below one would indicate the market's skepticism that stated book values are credible). Bank stress tests performed were largely criticized as failing to reflect the risk of a true tail event. In its most recent economic forecast, the OECD stated, "Euro area banks are insufficiently capitalised and weighed down by

bad loans". This capital shortfall leaves banks less prepared to absorb the next market uncertainty event, especially given that their host countries have limited capacity (and appetite) to lend a hand should trouble arise. An important aftershock of the credit crisis, where governments stepped in to backstop their banking systems and recharge economic growth, has been materially weaker sovereign balance sheets. Experience teaches us that when mixed, the combination of highly leveraged banks and sovereigns can lead to financial instability. Let's hope the dangerous feedback loop is not reignited.

### **Cyber Attacks**

According to data compiled by Bloomberg, 27 of the top 100 companies in the US have disclosed being the victim of a cyber attack. Among these firms are systemically important financial giants AIG, Goldman Sachs, Morgan Stanley, JP Morgan, and Citibank. Also among them are ubiquitous telecommunications firms Verizon and AT&T. While no material financial loss has yet been reported, breaches are clearly happening with greater frequency.

Outgoing head of US homeland security Janet Napolitano recently stated, "Our country will, at some point, face a major cyber-event that will have a serious effect on our lives, our economy, and the everyday functioning of our society." The three countries from which these attacks are said to originate most are Iran, Russia, and China, hardly US allies. It should be clear that the US is also often on the offensive end of cyber attacks.

In a recent white paper on systemic risk ([LINK](#)), the DTCC stated that cyber-security has emerged as the most significant threat to markets, surpassing other risks such as the impact of new regulations, high frequency trading and counterparty risk. According to the report, "DTCC expects cyber attacks to escalate and become more sophisticated in the future. Attackers benefit from their anonymity and lack of attribution as well as their existence outside U.S. and E.U. jurisdictional boundaries, all of which minimize the probability of prosecution."

In a survey ([LINK](#)) by Lloyd's of more than 500 CEOs from corporations around the world, cyber security now represents the third most significant risk, up from 12<sup>th</sup> in 2012. From the survey, "2012 saw the takedown of the Interpol, CIA and Boeing websites, the suspension of alternative currency Bitcoin's trading floor, the mass theft of passwords from professional networking site LinkedIn, the outage of the websites of six major US banks, and many more." Investors will remember the swift plunge and subsequent recovery in the stock market on April 23<sup>rd</sup> as the Associated Press account on Twitter was hacked, with a report of explosions in the White House.

What are the implications for US companies of the growing cyber threat? Clearly, the topic is receiving greater attention as lawmakers urge the SEC to provide guidance on when corporations need to disclose a cyber attack. In a letter written earlier this year to SEC Chairwoman White, Senator Jay Rockefeller said, "Given the growing significance of cyber security on investors and stockholders' decisions, the SEC should elevate this guidance and issue it at the commission level as well."

From a systemic uncertainty perspective, the cyber threat is somewhat like the risk of a global airborne pandemic or catastrophic natural disaster. When contemplating the impact of these, investors recognize the possibilities, but until an event occurs, do not react because the risk cannot be priced. Similarly, the risk of a cyber attack is not priced into markets. However, what differs for the cyber threat is that each day, evidence suggests that the risk of a substantial and disruptive attack is becoming less remote.

### **Technology and Market Structure**

Another risk factor is the unsettling trend in disruption related to weaknesses in technology and market structure. In May of 2010, the Flash Crash caused a sell-off that saw the DJIA shed 1,000 points, the largest intra-day point decline in the history of the index, before recovering (for an entertaining "call" of the crash from the floor of the CME, [LINK](#)). The role played by high frequency traders (HFTs) in the sell-off has been subject to much debate. Markets were largely untradeable during this period as spreads

widened. Many trades were cancelled after the fact in a largely arbitrary process, which was damaging for market integrity.

According to the SEC report ([LINK](#)) on the Flash Crash, describing the factors contributing to a liquidity crisis in the S&P 500 E-Mini contract, “Still lacking sufficient demand from fundamental buyers or cross-market arbitrageurs, HFTs began to quickly buy and then resell contracts to each other – generating a ‘hot-potato’ volume effect as the same positions were rapidly passed back and forth. Between 2:45:13 and 2:45:27, HFTs traded over 27,000 contracts, which accounted for about 49 percent of the total trading volume, while buying only about 200 additional contracts net.” In 14 seconds, \$1.5bln of notional value of exposure to the world’s most important equity index was flipped as a “hot potato”?

Of course, the sell-off in certain individual stocks made the decline at the index level look modest. Again, according to the SEC report, “as liquidity completely evaporated in a number of individual securities and ETFs, 11 participants instructed to sell (or buy) at the market found no immediately available buy interest (or sell interest) resulting in trades being executed at irrational prices as low as one penny or as high as \$100,000...during the 20 minute period between 2:40 p.m. and 3:00 p.m., over 20,000 trades (many based on retail-customer orders) across more than 300 separate securities, including many ETFs, 12 were executed at prices 60% or more away from their 2:40 p.m. prices.” This is a staggering market failure for which no acceptable explanation nor remedy has realistically been proposed.

In March of 2012, BATS sought to execute an IPO of its stock as the first on its own exchange. A massive technology break down prevented the stock from opening. In May 2012, Facebook did an IPO, but not without significant technology issues that resulted in an estimated \$500 million of losses suffered by Wall Street firms involved in the deal. In August of 2012, Knight Capital Group suffered a loss of \$440 million as a result of a programming error in which old software was mistakenly reactivated. The impact of the rouge algorithm was huge volatility in nearly 150 listed stocks. For example, the share price of Wizzard Software went from \$3.50 to \$14.76 that morning. Nearly bankrupted from the loss, Knight was acquired by Getco a few months later.

In April 2013, a glitch in the CBOE’s Futures Exchange severely impacted trading in VIX products for most of the day, substantially reducing the hedging alternatives available to investors. More recently, in August 2013, Goldman Sachs suffered an undisclosed loss based on a software glitch that caused it to launch hundreds of unintended orders in US stock options. In one trade, Goldman sold 993 IWM call options for \$1 per contract when they were worth closer to \$36 per contract. Most all of the trades were ultimately busted by the exchange, leaving many investors who had implemented hedging strategies left with losses.

When combined with the previously discussed increase in cyber attacks, these technology and market structure related issues should be viewed as a serious threat to market stability. Does it sound unreasonable to think that a malicious group could infiltrate a financial institution, create a rouge algorithm, and implement it with the intention of causing the firm to suffer potentially catastrophic loss?

### **Policy Dysfunction**

The experience of 2011’s debt ceiling negotiation remains a fresh lesson on the unpredictable path of outcomes that our modern day, highly polarized legislative branch may put the market on. The brinkmanship that resulted in a US credit downgrade caused market volatility to skyrocket. Over a four-day period in early August 2011 (8/8-8/11), the SPX experienced an average high/low swing of 5.1%. This 4-day volatility of ~82% ranks among the most significant bursts of volatility since the credit crisis.

In “The Price of Politics” ([LINK](#)), a blow by blow narrative of how close the US came to default in 2011, well known political historian Bob Woodward recounts just how elusive consensus was among the White House, Senate, and House in averting a US debt default. Elected leaders simply could not triangulate on the combination of tax hikes, revenue, and spending cuts that would satisfy their constituencies and enable a deal. Two years later, as a government shutdown looms and another debt ceiling show down

could be in the offing (according to Treasury Secretary Lew, the limit will be reached in mid October), we are no less polarized and consensus no less elusive. It is reported that House Republicans will seek to tie increases in the ceiling to substantially limiting the scope of and funding for Obama's signature health care legislation.

In sharp contrast to the politicians from yesteryear that proudly worked "both sides of the aisle" and largely fell in line behind party leadership, today's Congress is composed of multiple factions, each with vastly different agendas, constituencies, and philosophies. The uncertainty over the debt ceiling is often couched in terms of "hostage taking" by the tea party faction of the House. While this makes for a good news story, the reality is that there is a huge philosophical divide on the right way forward.

The recent potential for entanglement with Syria is a good example of this. According to Politico, only six Republicans in the entire Congress voted against George W. Bush's request to authorize the war in Iraq. Obama has had a resoundingly weaker show of support from his party, even for very defined, limited action. In the Congress, Boehner, Cantor, Pelosi, and Reid have all supported Obama's request for a limited strike and yet, it remains entirely uncertain if the votes would be sufficient to pass either the House or the (Democratically controlled) Senate.

The weakened ability for lawmakers to forge consensus, especially when it pertains to matters such as the debt ceiling and military action, is a new risk dynamic. It is also one that has proven challenging for markets to understand, creating the potential for spikes in volatility.

#### **Middle East**

While this area of the world has been associated with geopolitical uncertainty for a long time, risks have recently become more multi-dimensional and have intensified to an alarming point. The military coup in Egypt and intervention in the civil war in Syria threaten to destabilize the already delicate regional balances of power among Iran, Saudi Arabia, Israel, Turkey, Russia, and others. The potential for US entanglement in the area and the implications for global instability are significant.

US policy dysfunction complicates the dynamic around Syria. The unintended consequences of both a decision to strike or a decision not to strike Syria, at this point are quite unpredictable. Iran and Syria's defense ministers this week threatened to attack Israel if Assad was in danger. All of it is fast moving and most everyone agrees, there are few good options on the table. We will know more soon.

#### **The Withdrawal of Central Bank Stimulus**

As we glide past the five-year anniversary of Lehman, we approach an FOMC meeting with implications far and wide for global market risk. The obsession with whether the Fed will or will not begin to taper its bond buying program should remind us all of just how unconventional monetary policy has become. To "taper" is to reduce (slightly) the pace at which the Central Bank buys the bonds issued by the US Treasury as well as MBS guaranteed by quasi-government entities. Never seen before policy, just less of it. In total, the Fed has accumulated \$3.4 trillion of securities on its balance sheet.

QE is a US policy with global implications. The Fed's initiative has offset much of the mortgage market contraction that needed to occur here in the US over the past several years. Over this time period, money has chased return, finding its way into emerging market destinations. According to the global banking association IIF ([LINK](#)), an estimated \$1.2 trillion has flowed into EM per year over the past 3 years. With India in turmoil and with major sell-offs in the equity and currency markets of countries like Brazil, South Africa, Turkey, and Indonesia, investors are beginning to appreciate the degree to which tapering may have significant ripple effects in markets outside the US.

Recently, the Central Banks of both Indonesia and Brazil have pursued interest rate hikes in order to combat the capital flight that has punished their currencies. These hikes have come even as economic growth has been slowing. The potential that certain emerging market countries suffer a self reinforcing

spiral of capital flight, falling currencies, higher interest rates, and slowing growth is a risk factor that should be watched closely, especially as the Fed's policy stance changes.

In articulating its policy stance, the Fed will ask the market to distinguish between tapering and rate hikes. But the past few months should remind us that markets are highly anticipatory. Remember that 10-year real interest rates have hovered near zero for the better part of the last five years not just in the US but also among large, developed economies generally. What are the risks of an interest rate environment that looks vastly different from the one the world has come to know as semi-permanent?

Of central importance is the undoing of the risk on / risk off framework in which changes in US government bond yields had been highly correlated to changes in equity prices. In the year from May 2012 to May 2013, the daily % changes of 10-year yields exhibited a 63% correlation to those of the SPX. Since May 2013, as Bernanke introduced the intention to taper bond purchases, this correlation has been zero. This dramatically different relationship has vast implications for how investors will need to manage risk going forward. Ultimately, if stocks and bonds move in the same direction, a portfolio of the two becomes more risky, and perhaps much more so.

#### **Two More Risk Factors...**

While they are not new, there are two additional risk factors that are important to keep in mind. First, crowded trades are a source of risk. Turbulent market episodes like the bond market bloodbath of 1994, the LTCM debacle of 1998, the Amaranth natural gas unwind in 2006, the quant meltdown in 2007, the crude oil plunge in 2008, and the huge sell-off of AAPL in 2012 all resulted from the accumulation of concentrated risk exposures.

What causes such risk taking? The second important risk factor is overconfidence and the way in which investors succumb to recency bias. As investors, we cannot help but extrapolate to the future based on what has happened in the recent past. This explains why the VIX dipped below 10 in early 2007 even as systemic risk was likely at its highest point. We must ask ourselves what vulnerability investors will have to recency bias when it comes to expectations around the future environment for interest rates. There is a good deal of duration risk sitting in portfolios that has resulted from accumulating bonds at very low interest rates over the past several years. Are investors prepared?

Five years post Lehman and there are many positive developments on the systemic risk front. But the rich history of financial crises teaches us that no two are alike. And this brings us back to James Gorman's interview. Let's hope that he turns out to be correct, but set against the backdrop of the risk factors discussed, an overly benign outlook on risk itself looks like a source of risk.

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