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House of cards

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House of Cards

A good opportunity to play solitaire?

We are in dire straits – no doubt about it. Our banks and financial edifices are collapsing. Those left standing also look shaky. The financial industry as a whole is battling to survive. And, as its frontline warriors, we will bear the brunt of the blood-bath sure to ensue any minute now.

Ominous as it looks now, this dark hour will pass, as did all the ones before it. If you really want to see a silver lining, it is that the whole financial landscape will change, so that such collapses won't happen again. How can we avoid such crises in the future? We can start by examining the root causes, the structural and systemic reasons, behind the current debacle. Here is my take on what I see as the lessons to be learned from our current gloom and doom.

Ambition versus greed

Growing up in a place like India, I was told early in life that ambition was a bad thing to have. It had a negative connotation, closer to greed than drive in its meaning. I suspect this connotation was rather universal. Why else would Mark Antony harp on Brutus calling Caesar ambitious?

Greed, or its euphemistic twin, ambition, probably had some role to play in this pain and suffering. But it is not just the greed of Wall Street. Let's get real. Jon Stewart may poke fun at the 20-something commodity trader earning his \$30 million bonus by pushing virtual nothingness around, but nobody complained when they



Mexican standoff for the new digital age

were (or thought they were) making money. Greed is not confined to those who ran \$50 billion Ponzi schemes; it is also in those who put their (and other people's) money in such schemes expecting a too-good-to-be-true rate of returns.

Let's be honest about it. We are in the business of making money, for others and for ourselves. We don't get into this business for phil-

anthropic or spiritual reasons. We get into it because we like the rewards. Because we know that "how to get rich quick" or "how to get even richer" is the easiest sell of all.

We hear a lot about how CEOs and other fat cats made a lot of money while other, normal folks suffered. It is true that the profits were "private" while the losses are public, which is probably why the bailout plan did not get much

popular support. But with or without the public support, bailout plan or not, like it or not, the pain is going to be public.

Sure, the CEOs of financial institutions, with their private jets and eye-popping bonuses, were guilty of ambition, but the fat cats didn't all work in a bank or a hedge fund. It is the legitimization of greed that fueled this debacle, and nobody is innocent of it.

Risky business

Just as 9/11 was more of an intelligence failure than a security lapse, the subprime debacle is a risk management breakdown, not merely a regulatory shortcoming. I think most people appreciate it, but to do anything useful with this rather obvious insight, we need to understand why risk management failed, and how to correct it.

Risk management should be our first line of defense – it is a preventive mechanism, while the regulatory framework (which also needs beefing up) is a curative, reactive second line.

The first reason for the inadequacy of risk management is the lack of glamour that the risk controllers in a financial institution suffer from, when compared with their risk-taking counterparts. (Glamour is a euphemism for salary.) If a risk taker does his job well, he makes money. He is a profit center. However, if a risk controller does his job well, he ensures that the losses are not disproportionate. But in order to limit the downside, the risk controller has to limit the upside as well.

In a culture based on performance incentives, and where performance is measured in terms of profit, we can see why the risk controller's job is sadly underappreciated and undercompensated.

This asymmetry has grave implications in the delicate balance of power in a financial institution. It is the conflict between the risk takers and risk managers that enforces the corporate risk appetite. And if the balance moved in such a way as to encourage the gamblers directly or indirectly, it is an indication of where the risk appetite lay during the runup to this meltdown. The question, then, is, was the risk appetite a little too strong?

The lack of equilibrium between the risk manager and the risk taker has other troubling

consequences. The smarter ones among the risk management group slowly migrate to “profit generating” (read trading or front office) roles, thereby further exacerbating the imbalance.

The talent migration and the consequent weakness in control are not confined merely within the walls of a financial institution. Even regulatory bodies could not compete with the likes of Lehman brothers while hunting for top talent. The net result was that when the inevitable meltdown finally began, we were left with inadequate risk management and regulatory defenses.

Hedging dilemma

Ever wonder why those airfares are so quick to climb, but slow to land? Well, you can blame the risk managers again.

The first reason for the inadequacy of risk management is the lack of glamour that the risk controllers in a financial institution suffer from, when compared with their risk-taking counterparts

When the oil price hit \$147 a barrel in July 2008, with all the pundits predicting sustained \$200 levels, what would you have done if you were risk managing an airline's exposure to fuel? You would have paid an arm and a leg to hedge it. Hedging would essentially fix the fuel price for your company around where it was when oil was \$150 a barrel, no matter how the market moved. After putting good hedges in place, you sit back and relax, happy in the knowledge that you saved your firm potentially millions of dollars.

Then, to your horror, the oil price nosedives, and your firm is paying \$100 more than it should for each barrel of oil. (Of course, airlines don't buy WTI, but you know what I mean.) So, thanks to the risk managers' honest work, airlines (and even countries) are now handing over huge sums

of money to energy traders. Now tell me, would you rather be a trader or a risk manager?

And, yes, the airfares will come down, but not before the unlucky risk managers take their due share of flak.

Where credit is due

While the market risk managers are getting grilled, the credit controllers are walking around with that smug look that says, “Told you so!” But systemic reasons for the financial turmoil hide in our credit risk management practices as well.

We manage credit risk in two ways – by demanding collateral or by credit limit allocation. In the consumer credit market, they correspond to secure lending (home mortgages, for instance) and unsecured loans (say, credit lines).

The latter clearly involves more credit risk, which is why you pay obscene interests on outstanding balances.

In dealing with financial counterparties, we use the same two paradigms. Collateral credit management is generally safe because the collateral involved cannot be used for multiple credit exposures. But when we assign each counterparty a credit limit based on their credit ratings, we have a problem. While the credit rating of a bank or a financial institution may be accurate, it is almost impossible to know how much credit is loaded against that entity (because options and derivatives are “off balance sheet” instruments). This situation is akin to a bank's inability to check how much you have drawn against your credit lines with other banks, when it offers you an overdraft facility.

The end result is that even in good times, the leverage against the credit rating can be dangerously high without counterparties realizing it. A painful deleveraging soon follows when a credit event (such as lowering of the credit rating) occurs.

Quant culprits

Much has been said about the sins of the quants, in their inability to model and price credit derivatives, especially collateralized debt obligations (CDOs) and mortgage-backed securities (MBSs). In my opinion, it is not so much of a quant failure. After all, if you have the market data (especially the default correlations), credit derivatives are not all that hard to price.

In mathematics, we verify the validity of equations by considering asymptotic or limiting cases. Let's try the same trick on the statement about the markets being free

The failure was really in failing to appreciate how closely credit and market risks were interrelated, given that they were independently managed using totally different paradigms. I think an overhauling is called for here, not merely in modeling and pricing credit risks, but also in the processes and practices used in managing them.

Ultimately, we have to understand how the whole lifecycle of a trade is managed, and how various business units in a financial institution interact with each other, bearing one common goal in mind. It is this fascination of mine with the “big picture” that inspired me to write *The Principles of Quantitative Development*, to be published by Wiley Finance in 2010.

Free market hypocrisy

Markets are not free, despite what the text books tell us. In mathematics, we verify the validity of equations by considering asymptotic or limiting

cases. Let's try the same trick on the statement about the markets being free.

If commodity markets were free, we would have no tariff restrictions, agricultural subsidies, and other market-skewing mechanisms at play. Heck, cocaine, and heroine would be freely available. After all, there are willing buyers and sellers for those drugs. Indeed, drug lords would be respectable citizens belonging in country clubs rather than gun-toting cartels.

If labor markets were free, nobody would need a visa to go and work anywhere in the world. And “equal pay for equal work” would be a true ideal across the globe, and nobody would whine about jobs being exported to third-world countries.

Capital markets, at the receiving end of all the market turmoil of late, are highly regulated, with capital adequacy and other Basel II requirements.

Derivatives markets, our neck of the woods, are a strange beast. It steps in and out of the capital markets as convenient, and muddles up everything, so that they will need us quants to explain it to them. We will get back to it in future columns.

So, what exactly is free about the free market economy? It is free – as long as you deal in authorized commodities and products, operate within prescribed geographies, set aside as much capital as directed, and do not employ those you are not supposed to. By such creative redefinitions of terms like “free,” we can call even a high security prison free!

Don't get me wrong. I wouldn't advocate making all markets totally free. After all, opening the floodgates to the formidable Indian and Chinese

talent can only adversely affect my salary levels. Nor am I suggesting that we deregulate everything and hope for the best. Far from it. All I am saying is that we need to be honest about what we mean by “free” in free markets, and understand and implement its meaning in a transparent way. I don't know if it will help avoid a future financial meltdown, but it certainly can't hurt.

Moral of the story

Nietzsche may be right: what doesn't kill us may eventually make us stronger. Hoping that this unprecedented financial crisis doesn't kill us professionally, let's try to learn as much from it as possible, and look to the future.

The notion of risk management is sure to change in the coming years. Risk managers will have to be compensated sufficiently, so that top talent doesn't always drift away from it into risk-taking roles. Credit risk paradigms will be reviewed. Are credit limits and ratings the right tools? Will off balance sheet instruments stay off the balance sheet? How will we account for leveraging?

Regulatory frameworks will change. They will become more intrusive, but hopefully more transparent and honest as well.

Upper management compensation schemes may change, but probably not by much. Despite what the techies at the bottom think, those who reach the top are smart. They will think of some innovative ways of keeping their perks. Don't worry; there will always be something to look forward to, as you climb the corporate ladder.

ABOUT THE AUTHOR

The author is a scientist from the European Organization for Nuclear Research (CERN), who currently works as a senior quantitative professional at Standard Chartered in Singapore. More information about the author can be found in his blog: <http://www.Thulasidas.com>. The views expressed in this column are only his personal views, which have not been influenced by considerations of his employer's business or client relationships.