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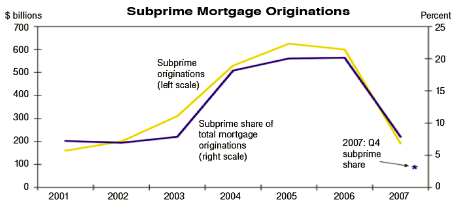
Risk and Risk Appetite-

Some lessons to be learnt from the global financial crisis

The collapse of the global capital markets in the wake of the subprime mortgage debacle is changing the landscape of banking with many high profile, reputable banks defaulting, which required rescue packages from central banks and governments. Top executives are under extreme pressure resulting in high level job losses. The remaining elite investment banking firms on Wall Street sought the protection of the Federal Reserve System, and insurance companies, pension funds, hedge funds, as well as private investors have seen massive losses in the market values of their investment portfolios. Economies around the world are being pushed to the brink of recession as the result of the wide-spread panic in the financial markets.

How subprime mortgage lending triggers chaos

A major contributing factor, which could be argued started the recent melt-down, was the collapse of the U.S subprime mortgages. Based on the assumption of an on-going boom in the housing market with double-digit annual price increases in the USA, commercial banks as well as savings & loans companies sold non-recourse mortgages with adjustable interest rates to customers with a subprime credit rating. In any future event of a borrower defaulting, the sale of valuable assets would more than compensate the lender for any losses – this was the reasoning



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behind the schemes.

Fig.1: Subprime Bubble

Simultaneously, investment bankers created so-called Collateral Debt Obligations (CDOs) by bundling home mortgages with commercial mortgages, automobile finance loans and/or credit card debts and placed them in global capital markets via off-balance "Special Investment Vehicles" (SIV).

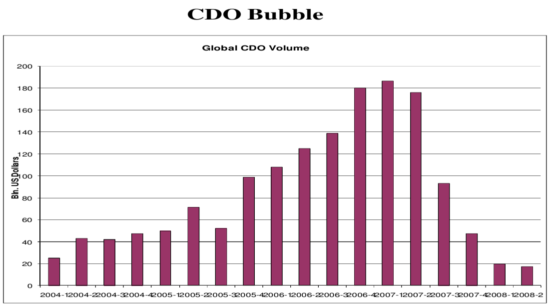

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Fig. 2: CDO Bubble

Should payments towards interest and capital redemption stop, any negative cash flows in the SIV were meant to be absorbed by an "equity" layer as a first line of defense rewarding its investor with additional risk-taking premiums. The strength of the "equity – tier" to absorb risk was determined by computer simulations modeling a normal behavior of the financial markets. The subsequent tranches of the credit cocktail were judged by the rating agencies to be investment grade. With the issuance of such "warrants of fitness" (e.g. Moody`s investment grades from Aaa to Baa3), investors around the globe relied on the agencies` professionalism and welcomed these papers offering attractive returns. No one worried about the inherent risks. To the contrary, the risks were further increased by leveraging, i.e. lower cost short-term funds were borrowed to enhance the return on the investor`s long-term investments.

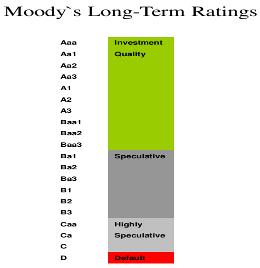

Fig. 3: Moody`s Long-term Ratings

When the residential housing boom came to an end and prices fell, banks rushed to foreclose on their borrowers in an effort to protect their credit portfolios. This drove down house prices even further. Subsequently, the collateralized mortgages ceased to contribute to SIVs` income streams and investors were out of pocket servicing their borrowings. Unable to roll-over their short-term borrowings investors defaulted on their sophisticated lending structures.

Within this synthetic credit cocktail that had turned toxic, refinancing of automobile loans and credit card debt also came to a halt. Suddenly all market players rushed for liquidity and became unwilling to lend to others. Money markets dried up pushing short-term interest rates higher. Risk appetite quickly changed into risk aversion. Consequently, the burst of the mortgage bubble turned into a credit crunch and to save the international financial system from a complete melt down, governments and central banks had to step in and spend billions on rescue programs.

What went wrong?

Basic rules of risk management have been ignored:

- Measure the risk
- Manage the risk
- Limit the risk appetite
- Know your loss absorption capacity

Lack of prudent risk management

A proper credit analysis of the potential borrower should be a standard requirement in the lending business. Based on the resulting risk profile the bank will determine the terms and conditions for a loan.

Subprime lending can be a profitable business as long as there is:

1. An on-going monitoring of the borrower`s credit profile;
2. An adequate and timely reaction, if and when, negative changes occur; and
3. An efficient repossession process to recoup the outstanding collateral.

Solely relying on the collateral`s market value –as in non-recourse lending – effectively switches the focus from credit risk into a pricing risk of the underlying asset, thus, requiring a different approach to risk management.

Adjustable interest rates reduce the burden of monthly installments to the borrower as long as short-term interest rates are stationary or on the decline. As soon the market turns around the rising monthly cost can easily overstretch the financial capabilities of the borrower forcing the bank into an emergency sales of the asset.

The securitizing of debt receivables was widely used, which allowed the originating bank to free itself of the acquired credit risks and pass them on to the purchaser of such asset backed securities. The link between borrower and lender is severed and the ultimate investor is not in a position to monitor any negative changes in the original borrower`s credit standing. Thus, any mitigating measures cannot be initiated in time to stop the credit situation from deteriorating.

Furthermore, funding an asset with maturities shorter than it takes the asset to liquidate itself runs the risk of not being able to refinance at each maturity (funding risk). It also runs the risk that a normal yield curve turns into an inverted curve, i.e. funding for shorter maturities has a higher cost than for longer maturities (pricing risk). So, leveraging an asset position is nothing less than a double-edged sword that has taken many investors by surprise and multiplied their risk exposures.

Too big a Risk Appetite

As a consequence of the Fed´s open market operations after the 9/11 terrorist attack the capital markets were flush with liquidity and investors were hungry for attractive returns. This efficient and effective crisis management by central banks created the belief among the investment community that market risks were manageable and in fact calculable.

Based on historic asset price volatilities and credit defaults of the past, mathematicians and physicists designed complex models to technically eliminate risk. Extreme market fluctuations such as the Black Monday on October 1929 and the then ensuing global economic recession are thought to be events that happen only once in a century and were treated as such. Risk management is considered a task for specialists rather than for general management.

This is underlined by the fact that many companies operate on compensation schemes for senior management focusing on annual results and not allowing for the risks that were taken to achieve these results. So, seeking higher annual bonuses management pushes the profitability of their businesses, disregarding the fact that higher returns entail higher risks.

The right balance creates value

Unfortunately, in business there is no such thing as a free lunch! Adjusting a company`s performance for risk does, however, not necessarily mean less profit. But it forces management to assess, quantify, aggregate, and manage risks and opportunities across the entire business and to balance the available equity against the comprehensive risk exposure. This ensures not only the survival of the business in the long-term, but it also channels the available risk taking capital to those business opportunities that promise the highest return relative to the risk involved. The management of opportunities and risks clearly supports the interests of the shareholder, i.e. achieve the most efficient and lucrative use of their invested capital.

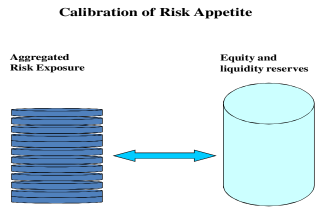

Fig. 4: Calibration of Risk Appetite

When considering the recent financial market developments, market participants` risk appetite was not sufficiently backed up by capital reserves. The massive value losses were also exacerbated by the standard accounting requirements to mark-to-market financial positions. To overcome the credit crunch the financial industry needs to be recapitalized. This will restore trust among all participants that lending will be redeemed on time. In view of the enormous capital needs required, this task can only be accomplished with the help of national governments and central banks.

Can future bubbles be avoided?

The major question going forward is: "can future bubbles be avoided"? Looking back in history, the Tulip Mania (1636), South Sea Bubble (1720), Stock Price Bubble (1929), and Property Bubble (1989) are prominent examples triggering price shocks to financial systems. Now and then, fortunes were made and lost with dire consequences to the economy. It seems, nothing will stop greed and fear driving speculation!!!

To some extent speculation is even a necessary ingredient for those wanting to buy protection against a risky position, e.g. an importer hedging against increases of commodity prices. But uncontrolled speculative exaggerations will eventually lead to aberrations in market behavior. Thus, each financial crisis creates demands for more transparency and corporate governance, including

- More effective cooperation among international supervisory bodies
- Tighter regulations and tougher sanctions for corporate boards of management
- More voluntary and/or mandatory codes of conduct
- More control of rating agencies, public accountants etc.

Therefore, the management of risks **and** opportunities should become a key part of any business, and for that matter of any management education program. To install such a concept in any live organization, however, might require a cultural revolution.