Risk management in financial industry:

A study of Risk Management Strategies of Goldman Sachs and Citigroup with respect to the Financial Crisis of 2008.

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Abstract

The Financial Crisis of 2008, also known as the Global Financial Crisis, led to the collapse of major international banks along with fall in the economies of several countries. The Financial Crisis is a low frequency, high impact event as it has been observed to occur once every few decades, and there is a probability for it to occur again in the future because of an unstable financial framework. While several banks collapsed and had to shut down permanently, there were some banks that survived this financial crisis. The only way to learn how to deal with it is to analyze the companies that went through it, managed the risks and turned out to be successful. This report will provide an in-depth analysis of two such banks, namely Goldman Sachs and Citigroup, who could survive the crisis because of their risk management strategies. Also, a deep insight will be provided on their current risk management framework and comparison between both the company's risk management frameworks.

A study of Risk Management Strategies of Goldman Sachs and Citigroup with respect to the Financial Crisis of 2008.

The financial industry provides various financial services to the people by managing money, providing insurance, banking, stock brokerage, investment funds and many more. This industry is responsible for balancing the world economy. Every individual is directly or indirectly associated with the financial industry and several sectors and industries are directly dependent on it. The financial crisis of 2008 led to the downfall of the entire finance industry, which affected all the industries associated with it, ultimately leading to the downfall of several countries. The effects of this event lasted for several years, and even today the effects can be observed in some areas.

Financial Crisis of 2008

The Financial crisis of 2008 was a low frequency, high impact event which initially took place because of the fall in the value of housing market. This event was aggravated as banks continued to give out loans to almost every individual while the insurance companies provided insurance to these high risk loans. The subprime mortgage defaults played a major role in the crisis. The fact that all the sectors of the economy are dependent on the financial sector led to a global crisis.

Vaheb (2013) states that from 1990 to 1997, the housing market growth was stable and grew by 8.7% in those seven years and from 1997 to 2006, the growth increased to 132%. The mortgages would be purchased by government sponsored institutions and then were sold to the capital market investors to purchase the securities in order to minimize their risk (Levin & Watcher 1888 as cited in Vaheb, 2013). Initially, the loans were being given to individuals with high credit score but later the loans were being given out to individuals with worse and worse credit score. These high risk individuals with worse credit were subprime borrowers and individuals with good credit scores were called prime borrowers. The investors were unaware of these unethical practices taking place and did not know that they were buying subprime mortgages. This is because the growth of mortgage credit led to rise in housing prices, which in turn ensured that the subprime borrowers would continue to refinance and keep their rate low (Levin & Watcher 1201 as cited in Vaheb, 2013). There came a point when there were no more people to give out loans to, and that is when the house prices started to increase. Therefore, the interest rates increased and people with low credit scores were not able to pay their mortgage anymore. The fixed rate mortgages (FRM) increased by 55% for prime borrowers and 80% for subprime borrowers. There was also a concept called adjustable rate mortgages (ARM), which was based on benchmarking and had lower interest rates than FRM, which attracted many people towards it. Towards the end of 2007, ARM increased by 400% for prime borrowers and 200% for subprime borrowers. Such high rates forced the people to sell their houses immediately, therefore increasing the availability of houses. This led to decrease in house prices and led to more loan defaults.

The banks even back then had risk management strategies, such as using the Credit default swaps (CDS). A CDS is a contract which the banks make with the insurance companies and since these contracts are not classified, they do not need to follow insurance regulations. Therefore, these contracts need not mean that the insurance company has enough reserves in case the insurance is needed (United Nations 34 as cited in Vaheb, 2013). To ensure that the risk is still mitigated, the banks practiced hedging. Vaheb (2013) further states that the CDS market rose to $57 trillion by June 2008 and fell by $16 trillion which led to an increase in the rate of economy’s destruction.

Several businesses failed, and many banks were shut down forever. Millions of people were unemployed and homeless. The American International Group (AIG) was an insurance company that was at the heart of this crisis. With the fall of AIG, several other organizations such as Lehman Brothers were on the way to bankruptcy. Finally, the United States government had to intervene and provide financial assistance to major banks to keep the economy going.

Goldman Sachs

Before the 2008 Financial Crisis

Goldman Sachs is one of the biggest banks in the United States with its headquarters in New York city. They had a very small investment in the residential mortgage market. From the year 2003 to 2008, they never had more than 2% of their total revenue from this market. In 2007, when the crisis was just beginning, they made a 1% of their total revenue from the residential mortgage market. Moreover, they had observed an increase in their VAR due to fluctuations in the mortgage market. This encouraged them to further reduce their investment in this sector.

After the 2008 Financial Crisis

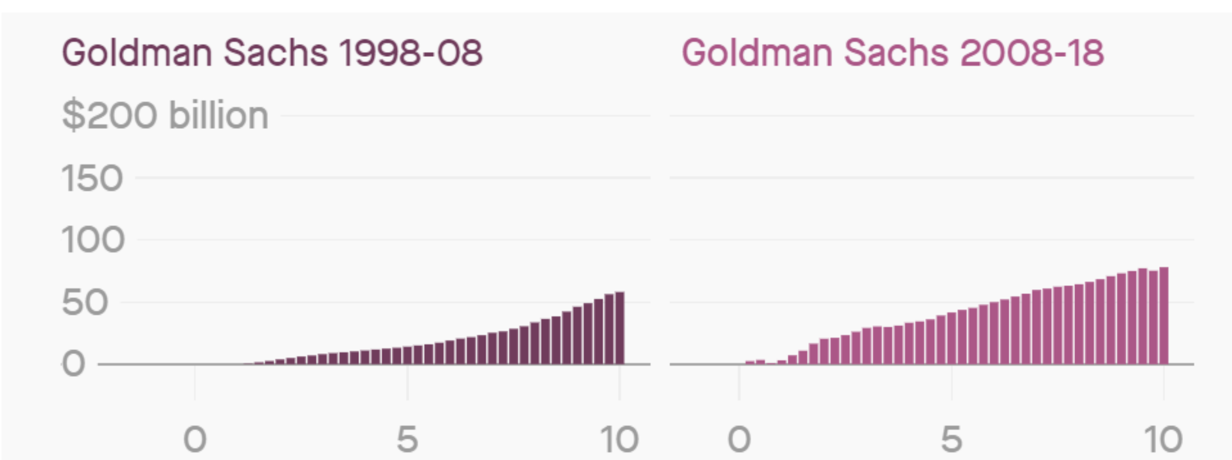

Fig 1: Cumulative profit of Goldman Sachs from 1998 to 2018.

Goldman Sachs suffered a loss of $1.7 billion in their residential mortgage related business. With such heavy losses, in order to bring about financial stability, they converted themselves into lower risk, commercial bank. Vaheb (2018) states that they received $10 billion from the US government as a part of the Troubled Asset Relief Program (TARP). A decade later, they have come up from the crisis and have made a profit of $20 billion compared to the previous decade (Varathan & Karaian, 2018). Currently, Goldman Sachs has four sectors namely Investment Banking, Investment and lending, Institutional client services and Investment management.

Risk management framework

Organizational Assessment and Risk Culture. Goldman Sachs follows the new Enterprise Risk management paradigm in which they have an integrated approach, with all sections working in coordination to manage risks. The ERM process is continuous and they have a vertically integrated firm. They are aiming to be broadly focused in their approach. Buehler, Freeman & Hulme (2008) stated that in 2006, Goldman Sachs acquired 68% of its revenues from trading and principal investments and only 17% came from traditional investment banking and advisory business. They are not just into traditional banking, but they also have trading and advisory business. Goldman has always been into the risk taking business and has its managers and executives prepared for the same. They can be classified as balanced risk takers and they involve employees in the company by giving them stock based options to reduce careless risk taking.

Risk Infrastructure. Goldman Sachs has a Risk division which specializes in different risks such as credit risk, market risk, liquidity risk, operational risk, model risk management, enterprise risk management and risk engineering. These divisions report to the chief risk officer.

They also have other committees like the risk governance committee and firmwide enterprise risk committee.

Risk Identification. Various risk identification techniques such as brainstorming, past data analysis, scenario analysis, case analysis, SWOT analysis, etc. are used by the organization.

Risk Measurement and Indicators. Goldman Sachs has a team of quantitative professionals who are experts in measuring quantitative risks. In their 3 pillar disclosure of 2018, they have mentioned that they measure different types of risks in a different manner:

Credit risk. It is measured based on the loss incurred in case of a default or nonpayment.

Market risk. It is measured using Stress testing and Value at Risk (VAR) which is further divided into Stressed VAR and Regulatory VAR.

Operational risk. It is measured based on scenario analysis and operational modeling.

Risk Management. Goldman Sachs uses various risk management techniques to reduce or eliminate the impact of negative risks. Some of them are as follows:

Risk Sharing. Buehler et. al. (2008) state that Goldman Sachs had a partnership heritage till 1999. This prevented them from failing during the Financial crisis of 2008.

Risk Transference. During the Financial Crisis of 2008, the company had purchased insurance for transferring risks.

Risk Mitigation. When the sub prime market started to fall, the company reduced their investment in that sector, therefore mitigating the impact of the risk.

Contingency planning and Disaster Recovery planning. Goldman Sachs has developed a business continuity and technology resilience program for disaster recovery which includes coordination, communication and training for crisis management, technology resilience, assurance, business recovery solutions and continuous process improvements.

Citigroup

Before the 2008 Financial Crisis

Citigroup is a well known bank in the United States, which provides services to its clients worldwide. They have been formed from mergers of several companies like Citicorp and Solomon brothers. They were heavily involved the residential mortgage market, and their annual profits were on the rise substantially due to their investment in this sector. While they were at the highest they had ever been through out the decade, the Financial crisis affected them and caused them very heavy losses.

After the 2008 Financial Crisis

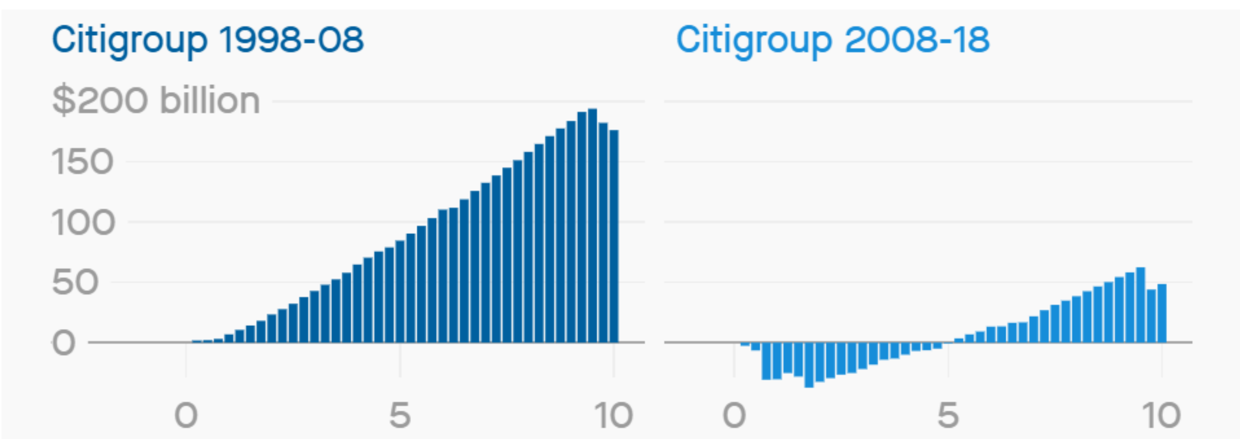

Fig 2: Cumulative profit of Citi Group from 1998 to 2018.

Vaheb (2018) states that they received $25 billion from the US government as a part of the Troubled Asset Relief Program (TARP) (Varathan & Karaian, 2018). They were given additional funds from the government as several other countries were dependent on them. Citigroup developed a good risk management framework and developed policies and guidelines to prevent losses in the future. In the initial years after the Financial crisis, they did not have good revenue, but in the recent years, their profits have been rising once again and the stability is being slowly regained.

Risk management framework

Organizational Assessment and Risk Culture. Citigroup was formed by mergers between several companies such as Citicorp and Solomon Brothers, who had high risk cultures. In 2005, due to the losses incurred by the company in the past, Citigroup had to improve its risk management processes (Wilmarth Jr., 2013). They follow the new Risk management framework where they continuously monitor risks. Also, they are broadly focused in their approach. Since there are many businesses under Citigroup, each of them has to create their own Risk appetite framework (Citigroup 3 pillar disclosures, 2017).

Risk Infrastructure. Citigroup has a line of defense structure which has 3 layers:

First line of defense. The business is responsible for all of the risks.

Second line of defense. Citigroup's Control Functions like Risk management, Finance, Compliance, etc.

Third line of defense. The Internal Audit function provides audit plan and ensures effective governance (Citigroup 3 pillar disclosures, 2017).

Risk Identification. Citigroup identifies Key Risk indicators (KRI) using scenario analysis and case analysis.

Risk Measurement and Indicators. In their 3 pillar disclosure of 2018, Citigroup has mentioned that they measure different types of risks in a different manner:

Operational risk: It is measured using statistical modeling along with likelihood and loss impact analysis.

Market risk: It is measured using systemic stress testing, VAR and specific stress testing.

Credit risk: It is measured using product stress testing and global systemic stress testing.

Risk Management. Citigroup uses various risk management techniques to reduce or eliminate the impact of negative risks. Some of them are as follows:

Risk mitigation. Citigroup has collaterals and agreements for reducing risks.

Risk sharing. Citigroup has several partners who are equally responsible and share risks.

Risk transference. They had purchased insurance during the Financial crisis of 2008.

Contingency planning and Disaster Recovery planning. Citigroup has a Contingency funding plan (CFP) for effective risk management. They also have a disaster recovery plan in case a disaster occurs.

Lessons Learned

While it is almost impossible to totally avoid the impact of events such as Financial crisis, especially when it comes to banks, it is necessary to have well established risk management frameworks. Also, it is necessary to incorporate risk management all the way down to the employees in the organization.

The Financial crisis of 2008 occurred because everyone got carried away by the profits they were making, thereby turning a blind eye to the risks involved. While they did make sure that they were mitigating risk in the short term, such as by buying insurance, they ignored the long term impacts that these risks could have on several countries. International organizations must be particularly cautious when taking risks of higher magnitude as they can impact a broader range of audience.

It is necessary to have a balanced risk culture, such as that of Goldman Sachs, so that the risks can be taken in a calculated manner, thereby being able to step out of the crisis or reduce the impact when it occurs. It is necessary to constantly monitor risks and incorporate it in every aspect and decision made in the organization. There must be a focus on establishing ground rules in risk management approaches when mergers take place between two or more organizations, as there can be conflicts between the approaches or cultures of the two organizations. Communication must be efficient, while rules, policies and procedures must be set for ensuring effectiveness in communication.

Finally, while revenues and profits can come and go, the most valuable asset for every organization is the people who work for them and their life and well-being must be the highest priority.

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