

FINANCIAL ENGINEERING AND FINANCIAL REGULATION ENGINEERING

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ABSTRACT

Financial engineering has changed not only the way business is conducted in the finance sector, but also the everyday lives of ordinary people in the world's leading economies, as has been observed over the last two decades. In certain post-crisis statements, structured goods were referred to as weapons of mass destruction. However, it is safe to say that few people were aware of the existence and dangers of these instruments prior to their introduction. The author discusses how financial regulation and supervision failed to understand/manage financial engineering products during and before the global financial crisis using a literature review and case study research. We address steps to strengthen good regulatory governance in engineered products in this context. We conclude that, while engineered goods have significant economic benefits, the regulatory/supervisory framework should be changed to enhance firm/system risk management. Second, there are four elements that can be improved to strengthen the prudential regulatory/supervisory system for standardised goods. These include taking prompt and appropriate action to address balance sheet issues, the efficacy of risk management, improving the independence and efficiency of prudential regulation/supervision, and the supervisory responsibility.

Keywords: Structured finance, risk management, financial engineering, financial crisis, and regulation.

INTRODUCTION

The primary cause of the subprime mortgage crisis is global imbalances between countries categorised as saving/consumption more or less. Secondary causes of the crisis include issues with originate and distribute model, inefficiencies in firm/system-wide risk management

procedures, asymmetric knowledge, and the U.S. financial system's inadequate regulatory/supervisory framework, among others. However, because this image reminds us of past financial crises and failures, we do need to examine the current financial situation. Financial engineering product flaws can be considered one of the major causes of the global financial crisis for a variety of reasons. These products/transactions tend to have two sides. Structured goods, on the one hand, tend to increase financial market performance by lowering funding costs. As a result, manufactured goods assist in increasing the amount of housing credits while lowering borrowing costs. Mortgage affordability improved prior to the recession as a result of technical advancements, financial advances, a favourable economic climate, incentives, and low-cost housing credits. Improving affordability entails a stronger economic/financial climate in order to achieve the American dream, which has long been a priority for policymakers, families, and the finance industry in the United States. Structured finance goods, on the other hand, were at the heart of financial failures during the crisis.

Essentially, one of the determinants of risk mispricing in primary/secondary mortgage markets was the mechanism of these goods. All market participants, including assessment companies, originators, and financial intermediaries, are institutionally linked to this valuation problem (i.e. investment banks, mortgage brokers, insurance companies etc.), Regulators at the state and federal levels, market discipline institutions (such as CRAs, auditors, analysts, and accounting firms), and investors, among others. It should come as no surprise that financial engineering issues are a catalyst in the subprime mortgage crisis and, ultimately, the global financial crisis. The author examines how financial regulation/supervision failed to understand/manage financial engineering products during/before the global financial crisis using a literature review and case study research. We address steps to improve good regulatory governance for financial engineering systems in this context.

The rest of the paper is split into five parts. The paper begins by examining the link between financial engineering and market fundamentalism. The third section discusses the advantages and dangers of financial engineering. The global financial crisis and regulatory deficiencies related to financial engineering are discussed in the fourth segment. The fifth segment examines the issue of regulatory forbearance as well as the factors that influence the

effectiveness of a regulatory system for financial engineering. The final segment is reserved for closing remarks.

MARKET FUNDAMENTALISM AND FINANCIAL ENGINEERING

Financial engineering is a strategy that can only be used if the surrounding environment is precisely described (Neftçi, 2008: 23). Some magic liberal term like free market economy, economic democracy, financialization and so on can be used to describe the ideology and/or socio-political climate that led to the evolution of financial engineering products.

Since ultra-liberalism has harmed regulatory and supervisory regimes, one might wonder if a "feel free" market economy is adequate to support the global economy in the aftermath of the global financial crisis. Investors were fearless and motivated only by greed as a result of globalisation, while regulators slept at the wheel, taking refuge in the self-regulating and self-corrective ability of efficient markets. There was a brazen exhibition of triumphalism regarding Western financial capitalism's invincibility (Hu, 2010: 31). In the post-2000 period, financial regulation, shadow banking, and investment banking were the emerging stars in the major financial centres. Market participants are not the only ones who believe in the advantages of financial engineering through standardised products and securitization techniques. Regulators and policymakers are also on board.

However, according to a number of analysts, free market fundamentalism is unquestionably one of the causes of the global financial crisis. For example, according to Hutton (2010: 33), this crisis has been thirty years in the making – a Gordian knot of libertarian free-market fundamentalism, unchecked globalisation, and the dissolution of social and political forces dedicated to justice, the explosive effects of financial advances like securitisation, as well as pure greed (also, see Levy, 2010: 47).

It's also worth remembering that a favourable business climate led greatly to the housing bubble. In this context, federal housing ownership policies in the United States, the Federal Reserve's interest rate policies, particularly between 2003 and 2007, various mortgage subsidies and the position of GSEs, easy credit policies of mortgage finance institutions, and the quick securitization process, to name a few, are all relevant, have made housing loans more

available to low-income and minority groups (subprime borrowers). We may argue that both the business environment and government policies have given credit to financial engineering activities in this scenario.

FINANCIAL ENGINEERING'S ADVANTAGES AND RISKS

Because of two factors, lawmakers and bureaucrats in the United States did not take a reactionary stance against financial engineering items. To begin with, they did not completely comprehend the risks associated with structured goods, which is unsurprising. Also highly sophisticated market participants (such as CRAs, investment bankers, and usually several board members) may embrace this, I couldn't comprehend the truth. Pacek (2010: 73-74) makes an interesting point, noting that a lot of garbage, now widely referred to as hazardous waste, was packaged with sexy-sounding titles. Unsuspecting buyers were told they were buying great stuff that could never fail, was stable, and gave a nice return by CRAs who happily gave them AAA rating. Second, and even more critically, they claimed that financial engineering products assist in the improvement of mortgage affordability. As a result, they expect that increased securitization and, as a result, a higher volume of low-cost housing credits would make the American dream more dependable. The process's side effects were also fantastic. This process also provided a better macroeconomic climate (i.e. positive real economic growth, growing employment, etc.) in the US economy between 2003 and 2007, minimising the negative effects of the stock market bubble, thanks to financialization and the positive wealth effect. If the risks were not mispriced during the engineering (particularly in the case of securitization) and housing processes, prices continue to increase, one might assume that the above scenario will hold true for a longer period of time.

Far greater leverage had become possible thanks to new ways of financial engineering designed to distribute and minimise risks (Bruton, 2010: 9). Securitization and credit derivatives, for example, were assumed to spread risk in ways that reduced overall risk levels (Feldstein, 2010: 17). The financial revolution of the last two decades has yielded significant potential improvements in risk management; however, the majority of these gains have been absorbed by increasing financial intermediation costs, which are enabled by monopoly and asymmetric information resources and driven by rising marketing and trading costs as well as lavish

remuneration (Blackburn, 2006: 40-41). Although financial engineering can pay off handsomely for its practitioners, many of its most popular devices have little to do with improving efficiency and instead revolve around defrauding the taxman or shareholders (Blackburn, 2006: 66).

THE GLOBAL FINANCIAL CRISIS AND FINANCIAL ENGINEERING REGULATORY FAILURES

The planet is struggling with the near-apocalyptic collapse of capitalism (Fernandes, 2010: 20). The global financial crisis promises to be a watershed moment for all in the near future, from banking to politics to the art market to global poverty. With rapid demand growth, loosening underwriting requirements, declining loan efficiency, and decreasing risk premiums, the subprime market resembled a classic lending boom-bust scenario in several ways. Argentina, Chile, Sweden, Norway, and Finland in 1982, Mexico in 1994, Thailand, Indonesia, and Korea in 1997 all witnessed a boom-bust scenario, while in various economic contexts. However, the rapid increase in house prices obscured the subprime mortgage market's decline and thus the true riskiness of subprime mortgage loans. The market's danger became clear when home prices stopped that (Demyanyk and Hemert, 2008: 32-33).

Most economists and financial analysts point to the U.S. Federal Reserve's recent low interest rate policy (Fed funds) as one of the main causes of the current global financial crisis, citing the resulting credit euphoria among both lenders and borrowers, as well as the more relaxed credit initiation policies and procedures, the widespread use of poorly regulated advanced financial engineering methods, as well as overwhelmingly optimistic expectations for real estate sector growth and price increases (Pezzuto, 2008: 4). The detrimental consequences of financial engineering have been recognised as one of the major causes of the crisis, as demonstrated by new US regulations. Profit motivations, short-termism, and rivalry are among the fundamental elements of single/systemic failures that emerged during the crisis in various mortgage finance institutions. However, it is also important to remember that regulatory/supervisory agencies from the United Kingdom to the United States have collapsed during the global turmoil. From a regulatory standpoint, we might argue that one of the key

reasons for regulatory failure is the lack of an effective regulatory/supervisory system for engineered goods.

As a result, deficiencies in the valuation/accounting/reporting of complex structured goods are inextricably connected to regulatory/supervisory failures (See, Coskun, 2010: 79). As a result of different factors, the asymmetric knowledge issue is becoming more prevalent during the global financial crisis. To begin with, a lack of adequate regulatory/supervisory steps to combat the risks of structured goods has resulted in a more risky business climate. Second, due to a lack of clarity in structured finance goods, informational asymmetry increases. Third, independent accounting companies and credit rating agencies have failed to fulfil their obligations.

FINANCIAL ENGINEERING REGULATORY FORBEARANCE AND AN APPROPRIATE REGULATORY SYSTEM

As their regulatory objectives, managers and regulators have primary responsibility for both firm-wide and industry-wide risk management activities. Regulators strive to strengthen firm-level control and discipline processes in this sense, and they form not only accounting, internal control, and internal audit mechanisms, but also risk management systems, regulators and managers also have an effect (Coskun, 2007: 56). Financial engineering has long been known to operate in the absence of an appropriate official discipline structure. In other words, during and before the recession, legislation, oversight, and compliance tools did not work well in the case of organised finance. While there are some drawbacks to regulating some standardised goods, it seems that the instruments of regulation and supervision have failed in the case of financial engineering.

According to current literature, one of the most serious issues with past financial crises in the United States was regulatory concerns, which included regulatory forbearance. According to Das and Quintyn (2002), political interference in the regulatory and supervisory mechanism has existed in virtually all financial crises over the last decade, including those in East Asia, Ecuador, Mexico, Russia, Turkey, and Venezuela. The depth and scale of the financial crises have been attributed to forbearance, lax controls, and lack of oversight. According to Kawai et

al. (2003), East Asian banks formed significant asset-liability mismatches in the run-up to the crisis, with unhedged foreign exchange borrowings invested in non-tradable sectors and short-term funds borrowed long into property. All of this exposed the banks to currency depreciation and interest rate increases. As capital account liberalisation was accelerated in the first half of the 1990s, this weakness reflected the fact that domestic financial markets were not well-regulated or governed. Risk management and the capital base, as well as loan classification and loan loss requirements, were all areas where regulatory and supervisory mechanisms over financial institutions were lacking. Because of explicit or implied government guarantees to particular financial institutions, moral hazard has arisen.

Quintyn and Taylor (2002) point out that two factors have helped to elevate the importance of regulatory and supervisory independence in recent years. The lack of independence of supervisory authorities from political control has been cited as one of the contributing factors to the deepening of the crisis in almost all of the global financial crises of the 1990s. Weak and ineffective regulations – often as a result of politicians blocking the adoption of stronger regulations –, weak and dispersed supervision, and political interference in the supervisory process leading to regulatory forbearance have all been mentioned as major factors contributing to the banks' weakening in the run-up to the crisis, delaying the crisis, postponing awareness of the crises' magnitude and, as a result, delaying the first official and, finally, successful intervention.

To avoid/minimize regulatory issues, it is important that regulators be held more accountable. Mishkin (2001) points out that if supervisors participate in regulatory forbearance, they must be held accountable in order to increase incentives for them to do their jobs properly. To encourage managers to do their jobs properly, they must face criminal charges if they are caught accepting bribes, if they take jobs with institutions that they have recently supervised, they must face censure and fines.

In this context, we might argue that a lack of an appropriate regulatory/supervisory system is one of the factors leading to the subprime mortgage crisis. In this context, it is clear that US regulators have failed to respond effectively to the crisis. For example, in the case of the SEC, it is apparent that neither financial institutions (i.e. hedge funds, investment banks, CRAs, etc.)

nor financial products had effective systemic risk management policies (i.e. structured products). Current literature, on the other hand, suggests that problems occur in other government organisations (i.e. FED, GSEs, FHA etc.) Systemic risk control was also hampered by flaws in the official discipline system's orchestration. As a result, it is clear that regulators/supervisors failed to adequately handle riskier lending activities and the risks of securitized/structured goods.

We could identify a framework to strengthen the current regulatory structure on financial engineering practises in light of problems identified during the global financial crisis. We will only highlight the components of good regulatory/supervisory governance for financial engineering products to keep the topic focused. According to Das and Quintyn (2002), effective regulatory governance has four components. These include (i) political and industry independence for the agency; (ii) accountability; (iii) transparency; and (iv) honesty. A sound prudential regulatory/supervisory scheme can have four components in this context.

- 1) Prompt and successful response to all financial intermediaries' balance sheet issues.
- 2) To improve the risk management's effectiveness.
- 3) To enhance the consistency and independence of prudential oversight and supervision.
- 4) To make managers more accountable.

This research does not claim to provide a complete picture of the relationship between the subprime mortgage crisis and financial engineering product regulatory and supervisory issues. However, we found that the regulatory structure for financial engineering could be improved.

CONCLUSION

In this paper, I, look at how financial regulation and supervision failed to recognise and handle financial engineering products during and before the global financial crisis in this paper. We address steps to improve good regulatory governance in engineered products in this context. Because of two factors, lawmakers and bureaucrats in the United States did not take a reactionary stand against financial engineering items. To begin with, they did not fully comprehend the risks associated with structured goods, which is unsurprising. Also highly

sophisticated market participants (such as CRAs, investment bankers, and usually several board members) may accept this. I couldn't comprehend the truth. Second, and even more critically, they claimed that financial engineering products assist in the improvement of mortgage affordability. As a result, they expect that increased securitization and, as a result, a higher volume of low-cost housing credits would make the American dream more dependable. Financial engineering has long been known to operate in the absence of an appropriate official discipline structure. In other words, during and before the recession, policy, oversight, and compliance tools did not perform well in the case of organised finance. While there are some drawbacks to regulating some structured goods, it seems that the instruments of control and supervision have failed.

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I, conclude that, while engineered goods have significant economic benefits, the regulatory/supervisory framework should be changed to enhance firm/system risk management. Second, there are four elements that can be changed to strengthen the prudential regulatory/supervisory system for standardised goods. These include taking prompt and appropriate action to address balance sheet issues, the efficacy of risk management, improving the independence and efficiency of prudential regulation/supervision, and the supervisory responsibility.

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