

**The Role of Corporate
Governance in Controlling
Financial Engineering
"Analytical Study"**

By

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Summary

The end of the twentieth century and the beginning of the twenty-first century witnessed a lot of financial collapses of major companies along with global financial crises. which drew attention towards the cons of financial engineering as the main cause of these problems on the one hand, and the application of corporate governance principles as a solution to them on the other hand.

The use of financial engineering is not without risk, so it is necessary to control them and their risks. Therefore, there is a need for the principles of corporate governance that may help to achieve greater internal control over the activities related to financial engineering within the company.

Indeed, this research aims to highlight the interaction between both financial engineering and corporate governance, given that financial engineering serves governance by providing it with new mechanisms capable of responding to new business challenges and the role of governance principles in controlling

financial engineering products and monitoring the risks associated with them.

KEYWORDS: Financial Engineering, Corporate Governance, Futures Contracts, Crisis of 2008.

Introduction

At present, companies operate under a global economic system in which the strongest survives. They operate in a world dominated by high and modern technology which has a deep impact on the law of companies. Indeed, it is said that the impact of informatics on the law is the result of legal globalization⁽¹⁾.

Consequently, the need for financial innovation has become inevitable, and so financial engineering, which aims to develop the financial industries by creating financial mechanisms and tools that enable them to manage risks effectively, appeared. Hence, financial engineering can provide effective assistance to implement the strategic goals which the companies plan. Financial engineering is not limited to reducing the costs of the implemented activities, it also develops and creates new financial products and provides creative solutions to the problems facing companies⁽²⁾.

(1) Dr. Muhammad El-Sayed El-Feki, Companies Financial Engineering and Sectoral Stock Phenomenon, Journal of the Faculty of Law, Alexandria University, Issue 1, 2016, p. 8.

(2) Dr.. Iman Boqra, Dr. Khalaf Allah Bin Youssef, The Role of Financial Engineering in Facing Aggressive Control of Companies, Journal of Economic Additions, No. 1, p. 99.

<https://www.asjp.cerist.dz/en/article/77586>

Despite these advantages, many experts agreed that financial engineering products are one of the most important causes of the crisis and collapse of many major international companies at the end of the twentieth century and the beginning of the twenty-first century⁽¹⁾

This research aims to clarify the dangers of financial engineering and suggest how to control it through corporate governance mechanisms. So, what is the concept of financial engineering? What is the concept of corporate governance? How do they affect each other? And what is the role of corporate governance in controlling financial engineering? This is what this research attempts to answer.

Accordingly, we will divide this research into two main sections:

The First Section: What is financial engineering?

The Second Section :The role of corporate governance in controlling financial engineering.

(1) Refer to: Rabah Amin, Financial Engineering and its Impact on the Global Financial Crisis 2002, Master's Thesis, University of Algiers, p. 9.

The First Section

What is Financial Engineering?

This section presents definition, its the emergence of financial engineering, and the reasons behind its existence.

First:Definition of Financial Engineering:

Financial engineering is an important tool in our complex risky modern world. However, experts have differed in defining financial engineering⁽¹⁾ due to the different perspectives through which financial engineering can be defined; some of them defined it from the financial markets' point of view as: "An analytical description of financial market data in a scientific way that usually takes the form of mathematical algorithms and financial models". Financial engineering is widely used in the financial market with modifications, especially in currency trading, options pricing, stocks, and futures, not to mention that, the use of financial engineering techniques that enable financial engineers and market dealers to understand the financial market in a better way. Indeed, this is very important for those who deal with these markets

(1)Dr. Muhammad Sharif bin Zawi, Corporate Governance, and Financial Engineering, Dar Al-Fikr Al-Jamii, 2016, p. 118.

because the accuracy and speed of information are essential in the decision-making process⁽¹⁾.

Other experts defined it in the light of the functional mission it provides as: “Financing tools, systems, and processes that contribute to improving performance and increasing profitability while achieving gains for all, or at least some of its parties, but not at the expense of other parties.”⁽²⁾

While other experts defined it from the point of view of the financial management of institutions: as describing the quantitative analytical process designed to improve the financial operations of the institution, such as maximizing the value of the company, managing the stock portfolio, negotiating about financing, and organizing sales deals in a manner that considers the interests of all concerned parties.⁽³⁾

(1)Abdul Karim Kunduz, Industry of Financial Engineering in Islamic Financial Institutions, Master Thesis, Hassiba Ben Bouali University, Algeria, 2006, p. 3.

(2)Munir Ibrahim Hindi, Financial Management, "A Contemporary Analytical Introduction", Modern Arab Office, Alexandria, Fourth Edition, 2000, p. 14

(3)Abdul Karim Kunduz, Industry of Financial Engineering in Islamic Financial Institutions, ibid , p. 2

In conclusion, we can define financial engineering as: “The design, development, and implementation of innovative financial tools and mechanisms, in addition to introducing creative solutions to financing problems.” According to this definition, there are three types of activities:

- 1- Creating new financial tools such as credit cards.
- 2- Creating new financing mechanisms that would reduce the procedural costs of existing businesses, such as exchange through the global network.
- 3- Creating new solutions for financial management, such as managing liquidity, debt, or preparing funding formulas for specific projects that fit the circumstances of the project.

The intended innovation is not merely being different from the prevailing one. Rather, this difference must be so distinct that it achieves a better level of efficiency and perfection. Therefore, innovative financing mechanisms/tools must achieve what the current tools cannot⁽¹⁾.

(1)Abdul Karim Ahmed Kunduz, Financial Engineering and the turmoil of the global financial system, research presented at the Fourth International Conference of the College of Administrative Sciences - Global Trends, College of Administrative and Social Sciences, Kuwait University, 2010, p. 2.

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- Financial Engineering Tools:

Financial engineering tools include various types of financial derivatives, which are one of the most important innovations of financial engineering. In fact, financial derivatives have emerged due to investors' need for new financial instruments to face the future risks⁽¹⁾ of price fluctuations as well as unexpected economic fluctuations. Those instruments are called financial derivatives. **However, those derivatives Surprisingly turned into a source of risk because of the speculators⁽²⁾.**

Financial derivatives have become the cornerstone of financial engineering, as they managed to meet the needs of financial institutions and investors as diversified sources of finance,

Refer also to: Jamil Kazem Madlool Al-Aradi, Ali Aboudi Nima Al-Jubouri, Financial Engineering, and its Derived Tools, "Theoretical and Applied Concepts", Methodological House for Publishing and Distribution, first edition, Amman, 2016, p. 15.

- (1) Dr. Alaa Al-Tamimi, Legal Regulation of Stock Derivatives Contracts, A Comparative Analytical Study, Journal of Legal and Economic Research Faculty of Law - Alexandria University, First Issue 7102, Volume Two. p. 064.
- (2) Dr. Ibrahim Ahmed Anwar, Options Contracts and Risk Management in Commodity Markets, p. 2.

Research published on the Internet at the following site:
<http://conference.qfis.edu.qa/app/media/335>

as well as the flow of liquidity in the stock market⁽¹⁾ and enhancing these institutions' opportunities to manage their risks.

Financial derivatives can be defined as “Contracts whose value derives from the value of the referred assets”. The assets that represent the subject matter of the contract, and the assets that are subject to the contract vary between stocks, commodities, foreign currencies... etc. Derivatives allow the investor to make gains or losses...etc. Those derivatives also allow the investor to make gains or losses depending on the asset's subject of the contract performance⁽²⁾.

Marketable securities on the stock exchange are divided into basic securities, such as stocks and bonds⁽³⁾, and derivative securities whose market value depends on another asset.

There are three main tools through which the process of deriving basic assets can be performed:

(1) Dr. Hashem Fawzy Dabbas Al-Abbadi, Financial Engineering and its Tools, Focusing on Financial Options Strategies, Al-Warraq Publishing and Distribution House, Jordan, 2007, p. 51.

(2) Tariq Abdel-Aal Hammad, "Financial Derivatives, Concepts and Risk Management, Accounting", University Publishing House, Egypt, 2003, p. 5.

(3) Dr. Najat Merhi, *ibid*, p. 91.

- 1) Futures Contracts: It can be defined as “An agreement between two parties to buy or sell an asset at a certain time at a certain price in the future. The Future Contracts can be traded in stock exchanges, hence, to make trading⁽¹⁾ possible, the stock exchange determines certain normative features of the contract”.
- 2) Option Contracts: They are defined as: “An agreement to transact at a specified future date, at a specified price, if the buyer of the contract desires that transaction to occur. The willingness of the buyer to deal happens if the future price movements⁽²⁾ of the asset are in his favor”.
- 3) Swap Contracts: They are also called “The Exchange”. Swap contracts are defined as “A contractual obligation that involves the exchange of a specific type of cash flow or asset for another cash flow or asset, under the specific terms of implementation⁽³⁾ to be agreed upon when contracting.”

(1) Tariq Abdel-Aal Hammad, *ibid*, p. 61.

(2) Tariq Abdel-Aal Hammad, *ibid*, p. 93.

(3) Hashem Fawzy, Dabbas Al-Abadi, *Financial Engineering and its Tools, focusing on the strategies of financial options*, Al-Warraq Publishing and Distribution House First Edition, Amman, Jordan. p. 68

Second: The Emergence of Financial Engineering:

Financial engineering has emerged in a global economic environment dominated by financial risks and continuous changes in the various micro and macroeconomic values. Therefore, it has become indispensable to transform into a more developed financial economy that creates new investment sources, serves the interests of individuals and institutions, and enhances economic blocs⁽¹⁾ and economic well-being⁽²⁾.

Financial engineering⁽³⁾ originated in 1950 by the American economist Harry Markowitz, who was the first to use financial

(1)The most prominent example of this is the blocs of Southeast Asian countries known as the Asian Tigers in the 1990s, and the bloc of the eurozone countries in the last millennium, in addition to the possibility of a future bloc of China, India, Russia and Latin American countries

(2)Abdul Karim Ahmed Kunduz, Financial Engineering and the global financial turmoil, research presented at the Fourth International Conference of College of Administrative Sciences - Global Attitudes, College of Administrative and Social Sciences, Kuwait University, p. 1.

(3) Some believe that there is evidence of the use of advanced credit and payment instruments, dating back to the First Crusade (1099-1096), as documented in the letters of Jewish merchants in Cairo.

Refer to: Nawal Boukaz, "The Limits of Financial Engineering in Activating Coverage Strategies from Financial Risks in the Light of the Financial Crisis", Master's thesis, specialized in deep financial and accounting studies, Setif University, Algeria, 2010-2011, p. 25.

engineering to deal with the financial portfolio's crisis. In 1960, financial engineering developed depending on computer programs that follow up financial operations, and help financial analysts taking the appropriate decisions.

In the early eighties, New York Stock Exchange hired some academics to develop stock market products to help firms face risks, take investment decisions without risking and facing the dangers of financial market fluctuations, and get rid of legislative restrictions and pressures of the market⁽¹⁾.

In the mid-1980s, this newly born process used a more accepted and widespread name, which is "financial engineering"⁽²⁾. Consequently, the International Association of Financial Engineers (IAFE) was established to enhance this industry. The IAFE brought together 2,000 members from all over the world including professionals and academics in accounting, finance, economics, law, and technology.

(1)Dr. Najat Muhammad Marai Younes, the impact of applying financial engineering on the rationalization of investors' decisions, p. 14.

(2) Radwan Samir Abdel Hamid, "Financial derivatives and their role in risk management and the role of financial engineering in creating its tools", University Press, Egypt, 2005.

To clearly understand the emergence of financial engineering, we ought to highlight the factors behind its emergence as follows⁽¹⁾:

- 1- The different needs of investors and fund demanders, in addition to the increasing number of the new organized markets⁽²⁾.
- 2- The high cost of debt financing.
- 3- The international financial institutions are more likely to interfere in the management of national economies in case of reliance on international indebtedness⁽³⁾.
- 4- Information technology and the broad market concept.
- 5- The increasing risks and the need to manage them, in addition to the attempt to take advantage of the financial system⁽⁴⁾.

(1) Dr. Najat Muhammad Maria Younes, the impact of applying financial engineering on the rationalization of investors' decisions, pp. 14-15.

(2) Farid Al-Najjar, Derivatives and Financial Engineering, University Press, Alexandria, 2009, p. 323.

(3) Rabah Amin, Financial Engineering and its Impact on the Global Financial Crisis of 2007, Master's Degree in Economics, 2010-2011, p. 9.

(4) Refer in detail to:

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- 6- The collapse of the Bretton Woods Agreement, which resulted in violent fluctuations in exchange rates, which was a reason for developing future exchange contracts and searching for a mechanism to hedge against the risks of exchange rate⁽¹⁾ fluctuations.

Third :Advantages and disadvantages

Financial engineering has many advantages, on one hand, it reflects the importance of the financial services sector, which is the foundation of the modern economy⁽²⁾, and on the other hand, it improves opportunities for decision-making through reducing delegation costs⁽³⁾. Additionally, it allows businessmen to use different strategies for faster trading than conventional ones,

Abdul Karim Kunduz, The Financial Engineering Industry in Islamic Financial Institutions, *ibid.*, p 4.

- (1) Radwan Samir Abdel Hamid, "Financial derivatives and their role in risk management and the role of financial engineering in creating its tools", *ibid.*, p. 92, p. 78.
- (2) Dr. Muhammad Sharif Bin Zawi, Corporate Governance and Financial Engineering, *ibid.*, p. 120
- (3) Financial engineering reduces agency costs that result from the relationship between managers and venture capitalists' VCs.

Refer to: John D. Finnerty, financial engineering in corporate finance: An Overview, financial management, vol. 17. No. 4. Blackwell publishing, 1988, p.47

actually, financial engineering helps bosses use quantitative techniques provided by Computers and Internet devices⁽¹⁾. Yet, and in spite of all these advantages it has a few disadvantages; indeed, its wrong application leads to serious risks including the deterioration of the financial markets. A vivid example of such risks is the 2008 crisis which shocked the financial and banking sector. Therefore, financial engineering must be applied properly and under strict control over the stock exchange, in addition to avoiding the excessive use of financial derivatives and adhering to ethical values⁽²⁾. Accordingly, we will first present the cons of financial engineering, and then its role in the crisis of 2008.

1- The Cons of Financial Engineering:

(1) It is worth noting that in 1990 a generation of financial engineers working alongside Investment and major commercial banks appeared. In 2007, transactions in financial engineering products represented more than 70% of trading in the New York Stock Exchange and London, along with 40% to 50% in the Tokyo Stock Exchange. Between 2001 and 2007, more than two-thirds of the transactions of the 15 largest banks in the world were in financial derivatives. Accordingly, financial engineering has allowed new products that suit the needs of investors to be introduced. Refer to:

Dr. Muhammad Sharif Bin Zawi, Corporate Governance and Financial Engineering, *ibid*, p. 118.

(2) Dr. Najat Muhammad Marei Younes, *ibid*, p. 32.

The increasing complexity of the financial systems in economic institutions led to the use of various outcomes of financial innovation, as the stock market experienced a significant increase in its complexity. Moreover, financial engineering led to further complexity. In fact, it was expected that the various forms of financial innovation introduced by financial engineering would play an effective role in managing and mitigating risks such as financial derivatives. In spite of the fact that financial engineering has a great ability to manage and reduce risks, the high brokerage costs associated with it obstructed this ability, due to the monopoly and asymmetry of information about financial engineering, in addition to the increase in the cost of marketing, trade offers, and wages⁽¹⁾.

In general, the wrong application of financial engineering tools leads to serious risks, the bankruptcy of companies, and the deterioration of financial markets. Actually, gambling and not calculating risks, the absence of supervision over financial markets, and non-intervention by central banks lead to huge losses, for

(1) Yener Cos, kun, "Financial engineering and engineering of financial regulation: Guidance for compliance and risk management", journal of securities operations & custody, Vol 6 No 1, Henry Stewart publication ,2013, p.83.

example, interest rate speculation without applying market risk criteria⁽¹⁾.

2- Financial Engineering and the Crisis of 2008:

In 2008, mortgage debt turned into the biggest economic crisis, it was even bigger than the crisis of 1929, whereas real estate prices in the United States of America rose, which encouraged the banks to give real estate loans, this encountered high-profit margins on the mortgage, along with the decrease of governmental financing since 2000. As a result; real estate prices rose significantly in 2006, and in turn, the risks associated with mortgage loans⁽²⁾ that are given against low collateral increased.

In 2004, the governmental financing rate started to increase, which negatively affected the borrowers with variable-rate mortgages, resulting in a rise in the number of homeowners who are delinquent on mortgage payments as a result of the higher

(1) Abdul-Karim Ahmad Kunduz, Financial Engineering and the Turmoil of the Global Financial System, Research Presented at the fourth international conference of Faculty of Administrative Sciences- Global Trends, Faculty of Administrative and Social Sciences, Kuwait University 2009, p.2.

(2) Joern H. Block & Geertjan Devries & Philipp Sandner, " Venture capital and the financial crisis: an empirical study across industries and countries", working paper, 2010, Electronic copy available at: <http://ssrn.com/abstract=1541602,05/08/2011>. P 3.

interest rates on mortgages. In 2007, Bear Stearns Fund, which owns a large number of mortgages debt derivatives bankrupted, and as a result of the increase in real estate mortgages, it was securitized in the form of mortgage-backed financial bonds, as these bonds are relatively safe and required by investors⁽¹⁾.

In 2008, the value of mortgage-backed financial bonds decreased due to the inability of mortgage holders to pay off those debts. The financial analysis of that crisis confirmed that one of its most important reasons was the wrong financial engineering. All of these problems are related to the outcomes of financial engineering, such as real estate mortgage debt, financial bonds backed by a mortgage, and securitization, which made real estate mortgages more liquid and extremely difficult to monitor⁽²⁾.

The Second Section

The Role of Corporate Governance in Controlling Financial Engineering

Corporate governance is necessary for financial engineering to work as desired; it shows how to properly manage companies, in

(1) Joern H. Block & Geertjan Devries & Philipp Sandner.,ibid,p. 4

(2) Yener Cos, kun , "Financial engineering and engineering of financial regulation, ibid ,p. 87.

terms of systems integration, openness to the outside, integrity, transparency, and disclosure, in addition to the importance of the companies' adherence to the limits set by the law.

It's worth mentioning that financial engineering and its tools can be beneficial yet destructive. Therefore, we must cautiously deal with it. Indeed, the nature of financial engineering and its complexities make it a double-edged weapon as it imposes the application of a good system of governance on the companies depending on it. Hence, applying such a system of governance helps to ensure greater internal control over the activities related to financial engineering within the company. However, the misuse or the misapplication of financial engineering and its products can be very disruptive, therefore there must be an effective corporate governance system to guide how to use the financial engineering products⁽¹⁾.

This was confirmed by the jurisprudence, which indicated that the lack of good corporate governance⁽²⁾ led to some of these incidents, stressing that the governance mechanisms in companies

(1) Dr. Muhammad Sharif bin Zawi, Corporate Governance and Financial Engineering, *ibid*, p. 135.

(2) John C. Hull . options , futures ,and other derivatives , pearson Education , United states of America ,2012 , p. 779

that use financial engineering products help reduce the risks associated with their misuse of financial engineering. In addition, governance can be a great monitoring mechanism due to the effectiveness of financial engineering applications. Accordingly; an important question arises: To what extent can corporate governance principles contribute to controlling financial engineering products?

In order to answer this question and determine the importance that this topic addresses, we are to present **the role of the Enron company's Board of Directors not controlling financial engineering products** in the First Topic, then we will present **the role of corporate governance in controlling financial engineering products** in the Second Topic.

FIRST -Enron's Board of Directors' Failure to Control Financial Engineering Products.

Enron was ranked as the seventh-largest company in terms of returns and profits, and it was also awarded the most distinguished company in the financial aspect several times⁽¹⁾ by

(1) refer to:

Munir Ibrahim Hindi, Corporate Governance (An Introduction to Financial Analysis), *ibid*, p. 8.

"Fortune" magazine. However, it collapsed and applied for restructuring under Chapter Eleven of the American Bankruptcy Act. This incident is one of the largest bankruptcies in the history of American companies.

Enron's bankruptcy was due to two main reasons: the first is the misuse of financial engineering products, and the second is the failure of the Enron Board of Directors to control the financial engineering products.

1- Misuse of Financial Engineering Products:

The Senate Investigation Committee concluded that the company's bankruptcy was **due to the bad use of financial engineering products. On one hand, the directors and members of the Enron company's Board of Directors used innovative accounting methods with high risks** within the company's financial disclosure system, such as the fair value, where they did not depend on the fair market value upon recording the increase in their assets and liabilities⁽¹⁾, except in cases in which it conducts positive profitable deals. In the case of unconfirmed deals, they considered them to be operations that have not yet been realized

(1) The dependence of financial institutions on fair market value is one of the basic principles of accounting agreed upon by various financial institutions.

and showed them at the historical value and not the fair market value⁽¹⁾. The Board of Directors of the company - which had limited cash assets that were not sufficient to pay its debts – participated in its investment projects due to the need for financing as they established subsidiaries to raise money and manage risks. Jeffrey Skilling, who occupied a prominent administrative position in the company, suggested the establishment of an online company for trading in gas and electricity “Enron Online”, which was a great success. Due to this success, the managers decided to expand the company’s business to include insurance, timber industry, and investment in Latin America and India, which led the financial manager of the company to establish subsidiaries to facilitate these activities outside the company’s general budget⁽²⁾. These companies are known as Special Purpose Entities (SPEs)⁽³⁾.

However, the beginning of the fraud was when Enron registered its debts in the accounts of its subsidiaries, in order not to

(1) Dr. Muhammad Sharif bin Zawi, *ibid*, p. 138.

(2) Dr. Ahmed Ali Khader, *Corporate Governance*, Dar Al-Fikr Al-Jamieh, Egypt, 2012, p. 158.

(3) L. Gillan and John D. Martin, *financial Engineering, Corporate Governance, and the Collapse of Enron*, *ibid*, p1.

It should be noted that the Special Purpose Units are separate entities in which Enron and external investors participated in other assets or assets.

show it in its final budget, and so the company's price rise in the exchange market, so it could be able to attract new shareholders. At the same time, the managers and the Board of Directors were selling their shares as they were sure that the company is about to collapse⁽¹⁾.

The investigations also showed that the managers of Enron were actually presenting imaginary profits far less than the company's real profits, in addition to engaging in fake procurements with the purpose of covering the company's loss and debts, showing that the company's financial status is strong. This was the reason that shareholders lost huge amounts of money most of which were borrowed, and that's why it was a double loss for the shareholders⁽²⁾.

It can be said that the bankruptcy of Enron was due to its aggressive and suspicious use of financial engineering products, in addition to creating Special Purpose Entities (SPE), as the Board of Directors of the concerned company sought to avoid the risk of having to report the losses which the company suffered in some of its investments through using financial derivatives and special

(1) Ahmed Ali Khader, *ibid*, p. 158.

(2) Dr. Ahmed Ali Khader, *Corporate Governance*, *ibid*, p. 158.

purpose entities and transferring a large amount of debt-related assets and liabilities from the company's balance sheet to that units⁽¹⁾.

2- The Enron Board of Directors' Failure to Carry Out its Supervisory Duties:

The US Senate Committee investigation and the internal investigation conducted by the company in 2002 concluded that the Enron company's Board of Directors failed to perform its **supervisory** duties, as they approved the establishment of subsidiaries managed by the employees of Enron Company outside the balance sheet of the parent company. Moreover, they encouraged the company's executives to engage in business activities that eventually led to its bankruptcy⁽²⁾.

Accordingly, it can be said that the failure of corporate governance within Enron was due to two main factors:

(1) L. Gillan and John D. Martin, financial Engineering, Corporate Governance, and the Collapse of Enron, *ibid*, P 16.

(2) Some also believe that the company's bankruptcy is due to the failure of internal and external control mechanisms, the company's use of financial engineering products, including financing outside the company's balance sheet, as well as a shortcoming in the company's management. Refer to:

L. Gillan and John D. Martin, financial Engineering, Corporate Governance, and the Collapse of Enron, *ibid*, p. 1&2.

First: The lack of independence of the Board of Directors and the failure of the internal and external control within the company.

There was a clear conflict of interest within the company, and this conflict greatly affected the independence of the Board. This was referred to in the investigations conducted by the Senate after the company's bankruptcy. The investigation clarified that the company's Board of Directors had the main role in the company's bankruptcy. The investigations pointed out that the Board of Directors should be independent not only upon its establishment but also upon taking its decisions⁽¹⁾ in order to have effective supervision.

Second: The external auditor of Enron Company, "Arthur Anderson" did not inform the Board of Directors and the other regulatory bodies within the company of the potential violations. It is known that the Auditor has a very important role in controlling financial deviations and violations within companies, as the laws in the United States of America stipulate that the financial statements

(1) Refer to the role of board independence in achieving effective management:

Brickley, Coles and Terry (1994), Borokhovich, Parrino, and Trapani (1996), Fama and Jensen, (1983), Jensen (1993), Klein (1998), Weisbach (1988) and Yermack (1996).

of companies are approved every year by independent auditors, and the independence of Enron's auditors has been questioned for several reasons: On one hand, the auditor received huge amounts of money from clients, which greatly affected his independence⁽¹⁾, and on the other hand, the auditor took over the internal and external audit of Enron for two years, and accordingly when performing the external audit, he reviewed the same work that he did during the internal audit, especially the audit of the accounts of deals concluded with special-purpose units.

For all these reasons, it can be said that the auditor failed to review the operations related to financial engineering tools, especially with regard to the special purpose units⁽²⁾.

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- (1) L. Gillan and John D. Martin, financial Engineering, Corporate Governance, and the Collapse of Enron ,ibid,p.2&3.

It worth mention here that there was a conspiracy by Anderson Audit Company, as it covered the violations of the managers and the Board of Directors of Enron for a bribe of 52 Million Dollars.

Ahmed Ali Khadr, ibid, p. 158.

- (2) L. Gillan and John D. Martin, financial Engineering, Corporate Governance, and the Collapse of Enron,ibid,p .25.

The world is currently living in radical transformation, where there are many types of economic problems and risks, and with the emergence of the so-called borderless world and the emergence of globalization along with the spread of economic blocs and the liberalization of global trade. Consequently, countries have been obliged to follow in their production and economic policy a method compatible with the market economy. This method would prevent financial and accounting investigations that may affect the business environment and employees⁽¹⁾.

The concept of corporate governance strongly emerged in 1997, after the Asian financial crisis, and the Latin American crisis, Russia and the United States of America crisis in addition to the emergence of a crisis of confidence in institutions and legislation that regulate the activity between enterprises and governments, which are looking for the manipulation in corporate funds made by internal employees with no contributors to these matters. The

(1) Adel Rizk. Good Governance, Good management and Governance, a reseach paper presented to the Second Arab Forum, "Good Governance is an Option for Administrative and Financial Perspective", Cairo, May 2008, p. 143.

Also refer to: Magdy Khalifa, Globalization and the Management of National Economies, Egyptian Institute of Development and Planning, Volume Eleven, Issue Two, 2003, p. 289.

scandal of the American energy company Enron and the collapse of WorldCom Communications which is the second-largest telecommunications company in the United States of America in 2001, and the subsequent discovery of companies' manipulation in their financial statements are the best examples.

After those economic collapses and financial crises in the advanced and emerging economies, due consideration was given to the role of cooperate governance in avoiding the occurrence or even the exposure to such collapses not to mention the role it can play to maintain these economies and achieve comprehensive development for the international community as a whole⁽¹⁾.

Therefore, in this topic, we will discuss the meaning of corporate governance and its various fields, and then we will elaborate on the role of corporate governance in controlling financial engineering.

(1) Dr. Muhammad Ibrahim Moussa, Governance of Companies Listed in the Stock Exchange, New University House, 2010, p. 13.

L. Gillan and John D. Martin, financial Engineering, Corporate Governance, and the Collapse of Enron, ibid,p.32.

1-The Concept of Corporate Governance⁽¹⁾

The term corporate governance is one of the modern linguistic derivations that have taken a prominent place in contemporary legal thought. It refers to the term " Corporate control" or to be more precise "Corporate governance system".

It should be noted that there is no specific idiomatic definition of the concept of corporate governance. However, it can be said that the definition⁽²⁾ of corporate governance is divided into three main concepts.

1-1- The General Concept of Corporate Governance.

It is the concept adopted by international organizations and institutions, such as the definition of Organization for Economic Co-operation and Development (OECD)⁽³⁾, which defined

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- (1) Some of the legal writings believe that corporate governance rules are not new rules, as hardly any legal system is devoid of such rules. They are rules contained in other laws such as those regulating the capital market and bankruptcy.
 - (2) Dr. Muhammad Mustafa Suleiman, The Role of Corporate Governance in countering Financial and Administrative Corruption - A Comparative Study, University House for Publishing and Distribution, Alexandria, 2009, p. 14.
 - (3) Principles of corporate governance, center for international private enterprise, Arabic edition, 1999.paris, p. 146.

governance as: “The system that directs and controls the company’s business, as it distributes the rights and duties among the various parties in the company. It distributes rights and duties among the various parties in the company, such as shareholders. and other stakeholders. Indeed, it is considered as the basis on which decisions related to the affairs of the company are taken, and according to which the strategy necessary to achieve its objectives is implanted”⁽¹⁾.

1-2- The Traditional Concept of Corporate Governance.

This concept is based on the link between corporate governance and corporate issues represented in directing and controlling performance. The definition presented by the Cadbury Committee in the United Kingdom regarding the financial aspects of corporate governance is probably the most widespread definition in this field. The Cadbury Committee defined corporate governance as “the system through which companies are directed and controlled”⁽²⁾. In addition, the French jurist Charreaux defined it

(1) Organization for Economic Co-Operation and Development (OCED), OCED Principles of Corporate Governance, 2004, P.11

(2) Kambil, Ajit & others, “the seven disciplines for venturing in China” Mistsloan-management Review, vol.47, No 2,2006, p. 85.

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as: “a set of organizational mechanisms that affect the rules that managers use when making decisions in the company to limit their discretionary power”⁽¹⁾.

The company’s management is the entity entrusted with drawing up its policy and directing this policy towards achieving its goals on one hand and achieving equitable treatment for all stakeholders on the other hand. Drawing up policies and implementing the guidance in a way that protects investors’ money reflects the company’s good management and its adoption of a transparent system that guarantees the company’s success and protects it from corruption, in addition to providing impartial protection for all stakeholders. (The separation of ownership and management).

If the general principle is that the general assembly of shareholders has the upper hand in the management of the company, then the board of directors is the executive body that is

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Referred to in d. Abdullah Misfer Al-Hayyan, Corporate Governance, Helwan Rights Journal for Legal and Economic Studies, No. 22, January 2010, pg. 409.

(1) Gerard Charreaux , " vers une theorie du gouvernement des entreprises " , seminaires doctoraux des LAE de Dijon et de Lyon ||| ,Mai 1996, p.3.

responsible for managing the company's business and affairs. Hence, the general assemblies of shareholders have sweeping powers in making decisions and managing the company. Accordingly, the majority of shareholders can direct and manage the company in a way that protects their own interests without taking into account the interests of minorities. Indeed, this is revealed by the practical reality, where the majority of shareholders control the decisions issued to implement a certain policy or to achieve a certain interest⁽¹⁾.

For all these reasons, it has become inevitable to draw up a policy or a directive framework in order to create effective safeguards against corruption and the administration attitude. Drawing this framework is not only a means to protect the company from the trends of the majority but also a strategy to maintain the company's survival and prosperity in the world of business.

This was confirmed by the Economic Cooperation Organization (COE), which indicated that: good governance needs transparency so that people can accurately judge how well their

(1)Dr. Mohamed Ibrahim Moussa ibid, p. 18, see also: Organization for Economic Co-operation and Development, Principles of Corporate Governance.

www.oecd.org

interests are achieved, and then they can transparently judge to what extent well-informed decisions concerning shareholders' or investors' funds are made⁽¹⁾. Therefore, good governance depends on separating ownership from management and preventing abuse towards other stakeholders within companies, such as minorities. This would help achieve the desired goals of governance⁽²⁾.

1-3- The Modern Concept of Corporate Governance.

Supporters of this approach do not limit the company's goal to achieve the interests of shareholders at the expense of the interests of the parties surrounding the company, known as "stakeholders". The supporters of this approach argue that it is necessary to expand the concept of governance by taking into consideration the interests of other parties such as workers, consumers, suppliers, and creditors when managing the company. According to the followers of this approach, governance is a strategy adopted by the company to realize its main goals. Indeed, this strategy is deeply derived from the company's ethical perspective, as an independent and self-contained legal personality that has its administrative structure and internal systems and

(1) Refer to: Muhammad Ibrahim Musa, *ibid*, p. 19

(2) Muhammad Ibrahim Musa, *ibid*, p. 21

regulations that guarantee to achieve those goals away from the domination of any individual in it, with no conflict with the interests of other relevant groups⁽¹⁾.

Supporters of this approach also focused on the commitment of the company's management to the principles of justice, equality, and good governance to promote participation and democracy, which would benefit the various social groups surrounding the company within the framework of commitment to social responsibility and work ethics⁽²⁾.

Subsequently, the three-dimensional goals (economic, social, and environmental) in the company's work emerged. The company is nothing but an integrated set of interests, whose management aims to achieve compromising solutions for the various parties for the supreme interest of the company within its

(1) Williamson, Q, E., The Mechanism of governance, Oxford University Press, United Kingdom, 1999, P. 16-19.

(2) Azza Suleiman, Jana Badran, Corporate Governance between the Administrative and Legal Dimensions, Lebanese Journal of Justice, 2017, Issue 1, p. 8.

social environment to maximize the participatory value at the expense of maximizing profit⁽¹⁾.

2-The Role of Corporate Governance in Controlling Financial Engineering.

Corporate governance is one of the most important mechanisms for financial engineering to work as desired. Corporate governance shows how to properly manage companies, in terms of systems integration, openness, integrity, transparency, and disclosure, the need for companies to comply with the limits prescribed by law.

This was confirmed by some of the legal jurists, which indicated that these incidents occur due to the lack of thoughtful corporate governance⁽²⁾. They pointed out that governance mechanisms in companies that use financial engineering products help reduce the risks associated with their misuse of financial engineering. They also remarked that corporate governance can

(1) Charreaux et Desbrieres , Gouvernance des entreprises :valeur partenariale contre valeur actionnairale ,finance controle strategie ,volume 1, N2 , juin 1998, p-57-88.

(2) John C. Hull . options , futures ,and other derivatives , pearson Education , United states of America ,2012 , p. 779.
[options_futures_and_other_derivatives_5th_ed_0.pdf \(ksu.edu.sa\)](#)

also be a monitoring mechanism due to the effective application of financial engineering.

Corporate governance can provide mechanisms that impose effective control over financial engineering and its products, so corporate governance is a necessity to enter the stock market so that companies can gain the confidence of individuals who deal in the market. Indeed, the report submitted by the financial crises inquiry commission (FCIC) in January 2011 pointed out that and referred to the causes of the 2007 global crisis. These causes included the widespread failures in financial systems, major corporate governance errors within many financial firms active in the stock market, as well as flagrant violations concerning accountability and work ethics. All of these factors are closely related to corporate governance⁽¹⁾.

Therefore, some of the most important recommendations presented in this research are as follows:

- 1- Applying the principles of corporate governance till we achieve a sufficient degree of discipline that prevents illegal

(1) Refer to: financial crisis inquiry commission, releases report on the causes of the financial crisis, January, 2011, <http://fcic.law.stanford.edu/>.

Dr. Muhammad Sharif bin Zawi, *ibid*, p. 136.

practices and speculation aimed at maximizing profit without considering the damages that may result from that. This is because corporate governance reflects principles that would prevent the negative uses of financial engineering tools.

- 2- Adopting the modern concept of corporate governance, as the pressing needs of reality led to the development of the classic concept of governance as a mechanism for regulating the relationship between shareholders, the board of directors, and managers to a more modern concept based on the idea of participatory governance. Indeed, this modern concept would turn the company from a conflict zone between the different stakeholders to space for democratic practice that takes into consideration the interests of the stakeholders during the decision-making process.
- 3- The contribution of stakeholders including workers, consumers, and suppliers in corporate governance, as it is the most important factor that helps to build a governance structure that can protect these companies from exploiting their resources and save them from mismanagement, and thus raise their competitiveness.

- 4- Establishing more regulations and regulatory legislation to control financial engineering products, which were one of the main causes of increasing the severity of the crises that defined the global financial system.

Conclusion

Corporate governance is necessary for financial engineering to work as desired. Corporate governance shows how to properly manage companies, in terms of systems integration, openness, integrity, transparency, and disclosure, and the necessity of companies to comply with the limits imposed by laws.

Financial engineering and its tools can be both a blessing and a curse. Hence, we must deal with it carefully. The nature of financial engineering and its complexities make it a double-edged weapon, as it commits the companies applying it having a good system of governance so that they can ensure greater internal control over the activities related to financial engineering within the company. However, the misuse or the misapplication of financial engineering and its products can be very disruptive, therefore there must be an effective corporate governance system to guide the usage of financial engineering products⁽¹⁾.

(1) Dr. Muhammad Sharif bin Zawi, ,ibid,P. 135.

Therefore, some of the most important recommendations presented in this research can be as follows:

- 1- Applying the principles of corporate governance until we achieve a sufficient degree of discipline that prevents illegal practices and speculation aimed at maximizing profit without considering the damages that may result from that. This is because corporate governance reflects principles that would prevent the negative uses of financial engineering tools.
- 2- Adopting the modern concept of corporate governance, as the pressing needs of reality led to the development of the classic concept of governance as a mechanism for regulating the relationship between shareholders, the board of directors, and managers to a more modern concept based on the idea of participatory governance. Indeed, this modern concept would help the company leave out the conflict between different stakeholders and seek a democratic practice that takes into consideration the interests of the stakeholders during the decision-making process.
- 3- The contribution of stakeholders including workers, consumers, and suppliers in corporate governance, as it is the most important factor that helps to build a governance structure that

can protect these companies from exploiting their resources and save them from mismanagement, and thus raise their competitiveness.

- 4- Establishing more regulations and regulatory legislation to control financial engineering products, which were one of the main causes of increasing the severity of the crises that defined in the global financial system.

Results:

1. It is necessary to apply the principles of corporate governance so that we achieve a sufficient degree of discipline that prevents illegal practices and speculation aimed at maximizing profit without considering the damages that may result therefrom.
- 2- The need to adopt the modern concept of corporate governance.
- 3- The need for stakeholders including workers, consumers and suppliers to contribute to corporate governance.
- 4- Develop further regulations and regulatory legislation to control financial engineering products, which have been one of the main reasons for the intensification of crises identified in the global financial system.

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