

# THE ORIGINS OF FINANCIAL INNOVATION: EXPLANATORY FACTORS

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### Abstract

The question of financial innovation is always of particular importance thanks to of its implication in the stability of contemporary economic and financial systems. Since its emergence, this phenomenon has aroused the interest of several authors. Numerous theoretical works have fed an abundant literature on the functions of financial innovation, its nature, its forms, and its characteristics. In addition to these research elements, the question of the origins of financial innovation has also aroused the interest of several researchers in finance. During our research, we noted a diversity of theoretical approaches and a lack of consensus among its adherents. Based on the analysis of these authors' approaches, we have been able to realize the existence of several factors at the origin of financial innovation. Given that several new financial products have been put in place to respond either to the economic and financial constraints encountered, or in response to the growing demand of investors, we have grouped these approaches into two lines of thought. The first focuses on explaining the supply side of innovation and the second on the demand side of agents as the essential driver of financial innovation. Thus, our article has a double objective: to compile the different theoretical approaches explaining the causes behind the emergence of financial innovation and to categorize them according to their origin, in the first place, and in the second, to propose, on our part, other key factors that appear to be at the origin of this phenomenon.

**Keywords:** Financial Innovation, Regulation, Competition, Risks, Characteristics, Beliefs and Values.

### INTRODUCTION

Since its appearance, financial innovation has aroused the interest of several researchers in finance. Some authors have tried to forge a theoretical body of work on this phenomenon. Different objects of study seem to hold the attention of these researchers. Concerns various definitions of this notion, its nature, its forms and its characteristics.

Apart from these different research objects, the question of the factors at the origin of financial innovation has also aroused the interest of several researchers. In parallel with Silber (1983) (<sup>1</sup>), several authors have focused on this research object.

Referring to theoretical approaches in terms of financial innovation, innovative behavior is the result of demand incentives from markets or supply incentives from financial institutions.

As a result, two schools of thought can be distinguished. The first focuses on explaining the supply side of innovation. The second is based on theoretical approaches that make agents' demand the essential driver of financial innovation.

This paper is interested in answering the question: why does the financial sector innovate? The aim is to identify the theoretical approaches used to explain the factors behind the emergence of financial innovation.

In this respect, we will address two points: The first will focus on analyzing the explanatory factors of financial innovation according to supply-side approaches and the second from the point of view of demand-side approaches, while proposing other factors that we believe are at the origin of this phenomenon.

## **1. THE SUPPLY-SIDE SCHOOL**

To understand the factors that preside over the emergence of financial innovation, we can refer to approaches that consider the supply side as a source of its emergence. Besides Silber (1975, 1977) <sup>(2)</sup>, several authors have focused on the causes of financial innovation such as E.J Kane (1981, 1986), Miller (1986), Chew (1997), etc.

The theoretical approaches of these authors are based on the supply rather than the demand, to analyze the causes behind the phenomenon of financial innovation. These approaches essentially emphasize the reaction of suppliers to constraints. They consider that financial innovation as the result of the strategies of financial institutions to deal with the constraints they face.

One of the most relevant interpretations of the process of financial innovation comes from W. Silber, with his "theory of constraint"<sup>(3)</sup>. The author considers financial innovation as "a response of the organization to the constraints it faces"<sup>(4)</sup>.

According to supply-side advocates, financial innovation is therefore the means by which economic agents remove constraints in order to improve their competitiveness and maintain or expand their market share. These constraints may be due to regulation, competition from other agents, or risk.

### **1.1 Financial Regulations**

The first category of constraints is essentially related to financial regulation. According to the proponents of the supply side, financial regulation is the driving force behind the processes of change in financial systems.

These regulations relate to interest rate controls, reserve requirement policies, the compartmentalization of national financing systems, excessive taxation, etc. These constraints have led financial institutions to implement strategies to circumvent regulations, which have resulted in the emergence of new financial instruments resulting from financial innovation <sup>(5)</sup>.

This idea has its origins in Silber (1975, 1983). In accordance with the theory of constraint that he developed, financial innovation is seen as a mechanism for circumventing regulatory

constraints. It is the implementation of strategies for circumventing regulation that results in the emergence of financial innovations that exploit regulatory loopholes. As a result, new financial instruments are innovated to overcome the financial constraints imposed on firms.

Moreover, the idea that regulation by monetary authorities drives innovation originates with E.J. Kane (1981). Emphasizing the notion of the "dialectics of regulation," Kane bases his approach on the dynamics of the legislator's action and the responses of financial institutions, in a non-stationary system described using the sequence: regulation-control-regulation<sup>(6)</sup>.

According to this author, the regulations imposed by the monetary authorities constitute a stimulus to innovation. Actors develop circumvention strategies, since regulatory standards impose costs on them that are considered prohibitive and even exceed the cost associated with the development of such strategies.

The example of such a circumvention is the creation at the end of 1981 in France of SICAVs and mutual funds for cash investments, as a response to the ceiling on the remuneration of term deposits and savings bonds. In addition, there are all the products designed to circumvent the prohibition on remunerating demand deposits. Also, the dismantling of interest rate controls has encouraged innovations such as swaps and options.

Created by JP Morgan in 1997, CDS are also part of the regulatory dialectic, since they make it possible to circumvent the restrictions linked to the exercise of the insurance business as well as the obligations associated with it.

Innovation thus makes it possible to provide firms with new instruments of action enabling them to circumvent the constraints imposed on them. It is a question of loosening the constraints due to financial regulation (Métais and Szymczak; 1986)<sup>(7)</sup>.

Miller (1986), in turn, explains that the main impetus for innovative financial products came from regulation and the tax system. This author points out that there is a close link between regulation and innovation. According to him, "the main impetus for successful financial innovation over the last twenty years has come from regulation and taxation"<sup>(8)</sup>.

Similarly, Chew (1997), argues that the main incentive to innovate is the desire to circumvent regulations. According to this author, innovation constitutes a device to escape regulation.

Tufano (2003), in turn, argues that innovation is a response to regulation. It is the need to circumvent regulation that has given rise to new financial products, giving the example of Euro-bonds, which are designed to offer tax advantages to issuers as well as to investors<sup>(9)</sup>.

This idea is also shared by Campbelle (1988), who points out that tax levies stimulate financial innovation and high levels of taxation induce a greater circulation of new financial products, such as swaps. This product is an agreement by which each of two or more parties performs a transaction on behalf of the others, and it can be a device to escape regulation. In this same vein, Greenspan (2005) argues that "regulatory reform, coupled with innovative technologies, has stimulated the development of financial products, such as asset-backed securities, collateralized loan obligations, and credit default swaps, that facilitate risk dispersion"<sup>(10)</sup>.

Furthermore, Frame and White (2004) <sup>(11)</sup> postulate that it is regulation that tends to stimulate financial innovation. These authors find a positive relationship between regulation and innovation; too many taxes imply financial innovation. Regulation is therefore the basis for a series of financial innovations.

## **1.2 The rise of Risks**

The second type of constraint is related to the rise of market risks. In response to the increase in these risks, financial institutions are introducing new financial products to hedge against the risks associated with interest rate and exchange rate fluctuations.

Financial innovation has generally been designed to improve the financing methods of economic operators by allowing them to decompose risks weighing on operations and to cover them appropriately, while offering multiple financing opportunities at favorable rates.

Smith, Smithson and Wilford (1990) have highlighted the relationship between increased risk and financial innovation. Financial innovation has enabled financial intermediaries to offer their clients products that will allow them to manage or even transfer new risks. According to this study, they concluded that there is a close relationship between the increase of risk in interest rates and exchange rates and financial innovation <sup>(12)</sup>. Among the financial products created for risk management, they cited interest rate swaps, currency swaps, commodity swaps and equity swaps.

Similarly, Tufano (1995) found a strong link between rising risk levels and financial innovation. He argues that the latter provides market participants with more effective means of dealing with the risks associated with the increasing volatility of rates. This volatility generates, according to him, a variety of financial innovations such as currency futures, interest rate futures, options and derivatives.

Furthermore, Merton (1992) <sup>(13)</sup> argues that innovation emerged to reduce financial risk.

## **1.3 Increased Competition**

With regard to the last category of constraints, it is induced by the increase in competition in the financial sector. Financial innovation can also arise from the economic pressure of competition. Competitive pressures induce financial institutions to innovate with the objective of increasing their competitive advantages. Financial innovation is seen as a means of easing the financial constraints on institutions <sup>(14)</sup>.

Following the financial liberalization and the de compartmentalization of capital markets, competition has increased in the financial markets. Faced with this new context, financial institutions are constantly seeking to adapt to new market conditions by creating new products, such as SICAVs and FCPs.

Competition therefore encourages financial institutions to innovate. It is in this sense that J.C. Van Horne (1985) underlines that "financial innovations reflect the viability and the forces of competition" <sup>(15)</sup>.

According to Gowland (1991), financial institutions have been actively pursuing financial innovations in order to improve their position and better cope with increasing competition<sup>(16)</sup>.

Allen and Gale (1994), in turn, argue that new product development is the result of competition among financial institutions. According to these authors, these institutions innovate to retain their customers and those with a weak market position seek differentiation and profit through innovation. The search for profit and the satisfaction of customer needs are at the root of the innovation process.

This last point is also confirmed by Johnson (1991). Johnson argues that financial innovation occurs because market participants are constantly looking for new sources of profit<sup>(17)</sup>. Innovation has its roots in the desire of market participants to maximize their wealth.

Also, Aghion, Harris and Vickers (2005)<sup>(18)</sup> argue that competition promotes financial innovation. According to them, firms seek to escape from competition through innovation. As for Ulgen (2013), he believes that it is the competitive dynamic that forces entrepreneurs to innovate. According to this author, the increase in competition in the markets incites financial institutions to move "towards product and/or process innovations in order to face new competitors (foreign banks or financial intermediaries) that previously did not have access to markets reserved for banks only; the process called disintermediation and de compartmentalization of financial markets with the objective of defending their established position or expanding their presence in new markets"<sup>(19)</sup>.

## **2. THE DEMAND-SIDE SCHOOL**

In contrast to supply-side theories that view financial innovation as a response by financial institutions that constraint on them, demand-side theoretical approaches analyze financial products in terms of their characteristics including profitability, risk, maturity, etc.

These theoretical constructs emphasize the influence of demand rather than supply, while making agents' demand the essential driver of financial innovation. They are inspired by the work of Lancaster. For the latter, financial intermediaries innovate to satisfy the motivations and needs demanded by their clients.

These needs may be related either to financial gain (purely financial motive) or to investors' beliefs and values.

### **2.1 The Demand for New Features**

Financial market participants do not demand financial products for their own sake, but for the features they present ( ). From this perspective, it is consumer demand that drives financial innovation.

For Lancaster, goods are endowed with characteristics in fixed proportions and it is on these characteristics, and not on the goods themselves, that consumers exercise their preferences. According to the same author, it is precisely these characteristics that have utility and that determine the choices of customers. He explained that "the main technical novelty consists in departing from the traditional approach of considering goods as the direct objects of utility,

and, instead, assuming that it is from the properties or characteristics of these goods that utility is derived"<sup>(20)</sup>.

Financial intermediaries have to adapt to "the market by the offer of a new combination of characteristics of the securities"<sup>(21)</sup>. These characteristics are summarized, according to Metais and Szymczak (1986), by such elements of which "the maturity, unit amount, yield, liquidity modulate these parameters so as to satisfy the patrimonial preferences of investors"<sup>(22)</sup>.

In this respect, driven by the demand for new features and to serve their customers, companies and financial institutions are encouraged to offer a variety of securities (bonds convertible into shares, bonds redeemable in shares, etc.) and also new payment instruments (creation of payroll accounts, new forms of payment and transfer, credit cards, etc.). Consequently, it is in response to the demand that financial institutions create new securities offering the income sought by the market participants <sup>(23)</sup>.

Similarly, the rise in risk and uncertainty is inspiring financial stakeholders to demand new hedging, risk transfer and financing instruments.

Financial innovation is therefore the means to create new combinations of characteristics and thus to offer investors products that match their preferences more precisely.

Griffin and Page (1996) believe, in turn, that customer satisfaction and acceptability of the product are the primary success factors for a new product <sup>(24)</sup>.

Moreover, given that the context in which companies evolve is characterized by the internationalization of business activity, the expansion of global production, and the desire of governments have to achieve integration of their economies. This situation has given rise to highly interpenetrated capital markets. Financial intermediaries have found themselves obliged to adapt to this new context, the evolution of which has strongly generated new needs for financial services on the part of customers. The satisfaction of these new financial needs will both require and modify the structure of the payment, debt, investment and financing system.

In short, the financial needs expressed by households as well as by companies have forced the financial sector to respond to these new needs, opening the way to new financial instruments resulting from financial innovation.

According by other analyses such as that of Desai and Low (1987) <sup>(25)</sup>, consider demand as a source of innovation. According to these authors, it is in response to customer demand that different categories of new products have been created.

Also, Shiller emphasized the role of investor demand in the rise of new financial products such as derivatives and structured products.

Similarly, Gennaioli, Shleifer, and Vishy (2012) <sup>(26)</sup>, in turn, share with Allen, Gale (1994) <sup>(27)</sup>, and Ross (1976) <sup>(28)</sup>, the idea that financial innovation is driven by customer demand for particular features. This demand enables financial intermediaries to proceed with the design of new financial products.

Using the example of mortgage securitization in the 2000s, Gennaioli et al. (2012) argue that in response to investor demand, financial intermediaries create new securities that offer the income sought by investors.

In sum, it should be noted that the advantage of such theoretical approaches, making demand a driver of financial innovation, is to situate the role of financial intermediaries on another path; that of readapting to the new market conditions, by offering new financial products and services with characteristics that obey the new criteria expressed by their clients.

In addition to these theoretical approaches, we propose, on our part, in what follows, other factors at the origin of the appearance of financial innovation. These factors are subordinated to the preferences and beliefs of investors earlier than financial returns.

## **2.2 Preferences and Beliefs: Support for Sustainable and Socially Responsible Investments**

In recent years, investors have become increasingly aware of the impact of their investments, which is why they seek to invest in projects that have a positive impact on society and the environment. This growing demand from investors for sustainable and more responsible investments has led to the emergence of new financial products that align the financial objectives of these investors with their ethical convictions. These are financial products that respond to their motivation to support sustainable development projects and economic and social development projects.

This growing demand is therefore an important factor in the development of new financial instruments.

### **2.2.1 Supporting Sustainable Development**

Due to the growing interest in the environment and climate change in recent years, investors are looking for responsible and sustainable investment opportunities to finance green and environmentally friendly projects such as sustainable development, energy efficiency, renewable energy production, etc.

In response to this growing demand, new financial instruments have been developed to allow investors to reconcile their financial goals with their beliefs and values. Among these new products, we can cite those that support sustainable projects that have a positive impact on the environment and society such as sustainable bonds, green bonds, blue bonds, etc.

### **2.2.2 Supporting Economic and Social Development**

The growing awareness of the importance of socially responsible investments and their positive impact on society has made investors realize that their investments (capital) can be an important tool to promote and support projects that contribute to economic and social development.

This awareness has encouraged investors to seek investment options that reflect their social values and their desire to contribute to projects that have a positive impact on society.

For this reason, they seek to invest in projects that promote economic and social development, which in turn helps to stimulate a growing demand for sustainable financial instruments.

This growing demand has encouraged issuers, whether companies and/or financial institutions, to issue sustainable financial products such as social bonds and to invest in projects with a strong social impact, such as the construction of social housing, poverty alleviation, the improvement of access to health, the reduction of inequalities, etc.

Besides social bonds which are dedicated to financing socially responsible projects, there are other instruments called development bonds intended to finance economic and social development projects in developing countries, such as infrastructure projects, health, education, etc.

In sum, we can argue that in response to a growing demand from investors motivated to invest in projects that have a positive impact on the environment, society and the economy, companies and financial institutions are issuing financial instruments that support sustainable and socially responsible investments.

## CONCLUSION

In this article we have focused on one of the objects of study that has attracted the interest of several researchers in finance. This concerns the factors behind the emergence of financial innovation.

While using the various theoretical approaches that explain all of these factors, we have categorized these approaches into two main streams of thought. The school that favors the supply of new financial products and the one that advocates the demand.

**The former sees the supply side as a source of financial innovation such as asset-backed securities, collateralized loan obligations, credit default swaps, etc. Among the followers of this school are Silber (1975, 1977), E.J Kane (1981, 1986), Miller (1986), Chew (1997), Tufano (1997, 2003), etc.**

With regard to the second stream, it is argued that investor demand is the main source, as in Lancaster (1966), Ross (1976), Metais and Szymczak (1986), Desai and Low (1987), Shiller (2003), etc. Among the instruments resulting from financial innovation belonging to this category, we can cite bonds convertible into shares, bonds redeemable in shares, etc.

For our part, we have proposed other factors that have led to the emergence of financial innovation that appear to us to be equally important. Factors that are subordinated to the beliefs and values of investors rather than to financial gain. These are the growing demand for financial products that allow the financing of sustainable and socially responsible investments, which have a positive impact on society and the environment, such as sustainable bonds, green bonds, social bonds, development bonds, etc.

In sum, this study can be seen as an opening to a long process of research that will shed more light on the phenomenon of financial innovation.



## Bibliography

- 1) Aghion Ph., P. Howitt & Mayer-Foulkes D. (2005), "The Effect of Financial Development on Convergence: Theory and Evidence", *Quarterly Journal of Economics*, PP: 323-351.
- 2) AIT HBIBI, A. & Mansouri, B (2022) « Financial innovations and financing of the Moroccan economy », *The Seybold Report*, Volume17, N°11, pp : 1962-1980.
- 3) AIT HBIBI A.(2022) «Financial innovation and financing of the economy: relational schema » , *Revue African Scientific Journal*, Volume 3, Numéro 10, pp : 162-188.
- 4) Allen, F. and Gale, D. (1991), «Arbitrage, short sales and financial innovation», *Econometrica*, Vol. 59, N°4, PP: 1041–1068.
- 5) Allen, F. and Gale, D. (1994), *Financial Innovation and risk sharing*, MIT Press, Cambridge.
- 6) Desai M. & Low M. (1987), *Financial innovation: Measuring the opportunity for product innovation, in Changing Money: Financial Innovation in Developed Countries*, M. De Cecco, ed., Oxford: Blackwell, PP: 112-140.
- 7) Frame, WS. & White, LJ. (2004), "Empirical studies of financial innovations: lots of talks, little actions?", *Journal of economic literature*, Vol. 42, N°1, PP: 116-144.
- 8) Gennaioli, N., Shleifer, A., & Vishny, R. (2012), « Neglected risks, financial innovation, and financial fragility ». *Journal of Financial Economics*, Vol.104, N°3, PP: 452-468.
- 9) Gowland, D. (1991), "Financial Innovation in Theory and Practice" in Green C. J. and Llewellyn D.T. (eds.), *Surveys in Monetary Economics*, Oxford, Basil Blackwell, vol. 2.
- 10) Griffin, A. & Page, A.L. (1996), "PDMA Success Measurement Project: Recommended Measures for Product Development Success and Failure", *Journal of Product Innovation Management*, Vol.13, N°6, PP: 478-496.
- 11) Johnson (1991), *the theory of financial innovations: a new approach*, Research working papers in Banking and finance.
- 12) Kane, EJ. (1981), "Accelerating Inflation, Technological Innovation, and the Decreasing effectiveness of Banking Regulation", *The Journal of Finance*, Vol.36, and N ° 2, PP: 355-367.
- 13) Kane, EJ. (1988), «Interaction of Financial and Regulatory Innovation», *American Economic Review*, vol.78, N°2, PP: 328-334.
- 14) Lancaster, KJ. (1966), «A New Approach to Consumer Theory», *Journal of Political Economy*, Vol.74, N°2, 132-157.
- 15) Merton, RC. (1992), «Financial innovation and economic performance », *Journal of Applied Corporate Finance*, Vol.4, and N ° 4, PP: 12–22.
- 16) Metais, J. et Szymczak, P. (1986), *Les mutations du système financier français (innovations et déréglementation)*, la Documentation Française, Paris.
- 17) Miller, MH. (1986), «Financial Innovation: the Last Twenty Years and the Next», *Journal of Financial and Quantitative Analysis*, PP: 459-471.
- 18) Renvresez F. (1988), *éléments d'analyse monétaire*, Dalloz.
- 19) Ross, Stephen A. (1976), «Options and efficiency», *Quarterly Journal of Economics*, N°1, PP: 75–89.
- 20) Shiller, RJ.(2003), *The new financial order, Risk in the 21 st century*, Princeton University Press

- 21) Silber, WL. (1983), "The Process of Financial Innovation", the American Economic Review, Vol.73, N°2, PP: 89-95.
- 22) Silber, WL. (1975), Financial innovation, Lexington Book, Lexington, MA.
- 23) Smith, CW., Smithson, CW & Wilford, DS. (1990), Managing financial risk, Harper Collins Publishers, New York.
- 24) Tufano, P.(2003), "Financial innovation" (chapter 6) in Handbook of the economics of finance, vol.1, part 1, Corporate finance, Elsevier, North Holland, PP:307-335.
- 25) Ülgen, F.(2013), «Évolution économique et innovations financières: d'un processus créatif à une création destructrice», Innovations, N°1, PP: 193-211.
- 26) Van Horne, JC. (1985), «Of Financial innovation and Excess», Journal of Finance, Vol. 40, and N ° 3, PP: 620-631.
- 27) World Bank (2013), Global financial development report, rethinking the role of the state in finance, World Bank Publications, septembre.
- 28) Hester (1982), innovation and monetary control, revue banque, N° 413.
- 29) Silber, WL. (1983), "The process of financial innovation", *Op., Cit.*, P: 88.
- 30) Voir: -Kane, EJ. (1981), "Accelerating Inflation, Technological Innovation, and the Decreasing effectiveness of Banking Regulation", The *Journal of Finance*, Vol.36, and N ° 2, PP: 355-367.