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Persistence of profit in the banking sector: Literature synthesis and new avenues for research

Persistance du profit dans le secteur bancaire : synthèse de la littérature et nouvelles voies de recherche

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Abstract

The persistence of profit continues to generate significant interest in empirical micro econometrics. Today two explanatory paradigms are used by researchers, namely the static and dynamic hypotheses of the competitive environment. The first paradigm attributes the persistence of profit by the industry characteristics (intensity of competition and barriers to entry). In contrast, the second explains it by the companies' strategies (innovation and reduction of production costs). While researchers widely use these explanatory paradigms, they do not fully establish conditions for profit to form and persist. This article presents the state of the art of literature on profit persistence in the banking industry and mobilizes two additional explanatory paradigms. The first paradigm (agency theory) deals with integrated groups where the shareholder is the owner and a contributor to business and, therefore, to profit. The second one (dynamic nonlinear systems theory) explains the interactions between the static and the dynamic hypothesis of the competitive environment leading to the formation and persistence of profit. We complete this conceptual framework with a review of the measurement of profit and the determinants of its persistence, as they emerge from empirical observations.

Keywords: Persistence of profit; competitive environment hypothesis; random walk; dynamic nonlinear systems theory; agency theory.

Résumé

La persistance du profit continue de susciter un vif intérêt en microéconométrie empirique. Aujourd'hui deux paradigmes explicatifs sont usités par les chercheurs, à savoir les hypothèses statique et dynamique de l'environnement compétitif. La première théorie explique la persistance du profit par les caractéristiques du secteur (intensité concurrentielle et barrières à l'entrée), alors que la seconde l'attribue aux actions volontaristes des entreprises (innovation et maîtrise des coûts de production). Il n'en demeure pas moins qu'ils ne rendent plus totalement compte des conditions dans lesquelles le profit se forme et persiste. Cet article présente l'état de l'art de la littérature en la matière et mobilise deux paradigmes explicatifs additionnels pour compléter les deux premiers. Le premier, traite du cas des groupes intégrés où l'actionnaire est non seulement propriétaire, mais également apporteur d'affaires et donc de profit (théorie d'agence). Le second explique les interactions au sien d'une entreprise entre le paradigme statique et le paradigme dynamique de l'environnement compétitif conduisant à la formation et la persistance du profit (théorie des systèmes dynamiques non-linéaires). Nous complétons ce cadrage conceptuel par une revue de la mesure du profit et des déterminants de sa persistance, tels qu'ils ressortent des observations empiriques.

Mots clés : Persistance du profit ; hypothèse de l'environnement compétitif ; marche aléatoire ; théorie des systèmes dynamiques non linéaires ; théorie de l'agence.

Introduction

Profit remains one of the most controversial and cutting-edge topics in economics and management. To date, no theory achieves consensus on the subject, for lack of unanimity, within the scientific community (Desai, 2008). The profit puzzle is still an open topic in management research and reminds us of the limits of this young discipline in resolving the elementary questions that arise in it (Obrinsky, 1983). Almost 250 years after the birth of modern economics, questions relating to the justification, the trajectory, and the determinants of profit remain unanswered (Murad, 1953). They alone sum up the deep crisis of this young discipline.

If the profit's case remains unresolved, abnormal profit and its persistence are even more so (Canarella, Miller, and Nourayi, 2013). Indeed, two principal theories explain its trajectory. The first one supposes that there can be no abnormal profit in a market functioning without limitations to competition and with free capital inflow and outflow. In this case, the formation of any abnormal profit would attract external competition, which would reduce it and bring it back to the competitive norm. The second one is less conventional. It explains that profits do not follow a deterministic tendency to mean reversion but follow a random walk stochastic process, making it impossible to forecast its trajectory. Both analytical frameworks rely on empirical observations to support their theses.

These empirical observations gave birth to two broad families of explanatory paradigms. The first one focuses on industry determinants, and the second one on the company characteristics. However, even though these two paradigms are compelling, they no longer adequately capture the growing integration of banks and insurance companies and the growing activism of shareholders. Indeed, the persistence of profit can result not only from the dynamics of a sector (static paradigm) or from the characteristics of a company (dynamic paradigm), but the structure of ownership within horizontally integrated groups (theory agency) and complex balance between positive and negative retroaction (theory of nonlinear dynamical systems). To integrate these cases, we will mobilize these two theories as other explanatory paradigms of the formation and persistence of profit. This will be our contribution to the current literature on the subject.

Therefore, our research question is: ***what are the conceptual and empirical determinants of profit persistence in the banking sector?***

We will organize the rest of this paper as follows. We will begin by exposing the competitive environment hypothesis (I), namely the static (I.1.) and dynamic ones (I.2). We will then confront this theoretical framework to the empirical observation by presenting different measures of profit (II.2) and the determinants of its persistence (II.1). We will then open the debate on new avenues of research in this area (III) by mobilizing two additional explanatory paradigms, the agency theory (III.1) and the nonlinear dynamic systems (III. .2).

1. Literature review

The profit's trajectory is subject to an intense debate between "the mean-reverting hypothesis" and "the random walk hypothesis" defenders. The debate is even more intense among the former, who diverge on the mean reversion speed and determinants. However, both paradigms accept the premise that the sole objective of any corporation is to realize and maintain abnormal profits (Tamirat, Trujillo-barrera and Pennings, 2018).

1.1. The static hypothesis of the competitive environment

The mean reversion hypothesis assumes that the level of profit results from the specific characteristics of a sector, mainly the ability of its operating companies to avoid external competition by erecting entry barriers. Intuitively, the more intense the competition in a sector, the more the profitability is moderate, and conversely, a sector protected from competition would generate higher profits, *Ceteris Paribus* (Bain, 1951; Fuchs, 1961; Weiss, 1963; Shepherd, 1964; Collins and Preston, 1969; Mcgahan and Porter, 2003; Carlton and Perloff, 2005).

The restriction on the competition can thus take several forms. It can be endogenous, exogenous, or structural. The endogenous restrictions arise from practices within a sector, such as price-fixing, market division, and cartels, resulting from tacit or explicit collusion between rival firms. This restriction can result from exogenous interventions, such as public price controls, access restrictions through approvals or licenses. Finally, these obstacles can be structural, like switching costs, transportation, or tailoring costs for horizontally differentiated products. The restriction to free competition increases profits by artificially increasing the prices of outputs or lowering input costs. In the absence of market discipline bringing these inputs/outputs back to their competitive norm, restrictions on free competition allow companies to make profits (Makadok, 2011).

The fundamental principle of this paradigm, better known as the Structure-Conduct-Performance (SCP) Paradigm, is that profit persistence results from the dynamics of competition and the structure of the industry (Tamirat, Trujillo-barrera and Pennings, 2018). Many models tried to analyze strategies put in place by companies to eliminate external competition. The most famous model is the "five forces," which identified these obstacles to be barriers to entry and exit, product differentiation, the number of competitors, suppliers, and customers (Porter, 2008).

However, based on competition restrictions, these theories failed to explain the difference in profits between firms operating in the same industry. They were challenged in the 1970s and 1980s by the competitive advantage theories.

1.2. Dynamic hypothesis of the competitive environment

The dynamic hypothesis takes the opposite view of the static one and criticizes its focus on the industry structure, independently of the individual firms' strategies to extract and sustain abnormal profits. The proponents of the competitive advantage theory adopt an adaptive vision of organizational and environmental change. They observed that many companies adjust their strategies and capacities as competitive environments evolve (Mueller, 1977; Goddard et al., 2011). Therefore, they analyze the individual characteristics of firms to explain their performance differentials rather than focus on the industry structure (Lin, Chen and Lo, 2014).

The competitive advantage theory is also known as RBV (Resource Based View). It is the norm in analyzing the long-term persistence of profit (Tamirat, Trujillo-barrera and Pennings, 2018). The central idea of the competitive advantage theory is that the extraction and persistence of profit result from the operational strategies of firms and that their capacity to set up efficient processes to transform inputs into outputs (Makadok, 2011).

In fact, according to this theory, competition eliminates the abnormal profit by the price mechanism, which allows customers to buy the same products at lower prices. Nevertheless, if a company has an advantage no competitor can imitate, it will generate and maintain its profits, regardless of the industry structure (Demsetz, 1973). This advantage is obtained and maintained by acquiring scarce, valuable, non-substitutable, and non-imitable resources (Barney, 2001). Resources that maintain a competitive advantage will also generate superior economic profit that will persist over time.

2. Empirical observations of profit persistence

2.1. Determinants of profit persistence

Several studies attempted to test the static and dynamic hypotheses of the competitive environment and elaborated metrics to measure profit persistence and analyze its determinants.

2.1.1. Size

The size of a financial institution refers to the volume of assets its managers have at their disposal and which they use to generate revenues to remunerate its various stakeholders. In the literature, size is measured as the natural logarithm of assets (PP Athanasoglou, Brissimis and Delis, 2008; Bouzgarrou, Sassi and Rouissi Béjaoui, 2010; Pervan, Pelivan and Arneri, 2015; Sinha and Sharma, 2015; Yong, 2016; Abel et al., 2018; Gugler and Peev, 2018; Yuxiang, 2018). Its impact on profit persistence is a priori unknown and differs across studies and their underlying theoretical frameworks. Large banks can reduce costs thanks to the economies of scale they realize by producing in large quantities. They manage to lower unit costs and generate higher profits than smaller banks (Bourke, 1989; Molyneux and Thornton, 1992; Goddard et al., 2013).

For (Abel et al., 2018), on the other hand, size has a negative and significant influence on bank profitability. In their study, they observed that small banks generate higher profitability than large ones. They noted that increased size led to diminishing marginal returns. They explained their finding by the high agency costs, cumbersome bureaucratic processes, and the rigidity associated with big organizations. Moreover, according to (Barros, Ferreira and Williams, 2007), the information asymmetry problems encountered by big players are reduced for specialized small banks, thus assuming a negative impact of size on bank profitability.

Furthermore, (Berger and Humphrey, 1994) explain that small banks can generate economies of scale by increasing their size, to the point at which any further increase in size will lead to diseconomies of scale. This thesis is also defended by (P. Athanasoglou, Brissimis and Delis, 2008) asserting that profitability increases with size. It then decreases beyond a certain threshold with the accumulation of bureaucratic problems that large structures usually encounter.

2.1.2. growth

A company creates value when it manages to generate long-term profitability above the cost of capital (Bertoneche and Knight, 2001). Therefore, the growth of assets is the embodiment of this value creation. Some authors (Sinha and Sharma, 2015) use the change in deposits to measure growth. On the other hand, others consider a more global approach and consider all assets to compute growth (Short, 1979; Bourke, 1989; Goddard, Molyneux and Wilson, 2004; Chronopoulos et al., 2015). The impact of growth on the bank profitability is not clear a priori. A bank with fast-growing assets can quickly expand its current activities, create new ones, and therefore generate abnormal profits (Sinha and Sharma, 2015). This relationship is, however, far from systematic. Performance is not in growth per se but in the management's ability to turn it into assets, income, and profits. In this case, growth is a necessary condition but not sufficient.

On the other hand, rapid asset growth could translate into solvency problems if it is not associated with rigorous risk management and control of bad debts. Furthermore, robust growth acts as a signal associated by investors with abnormal profits, which attract potential competitors, reducing future profits and, therefore, existing players' growth (Cable and Mueller, 2008).

2.1.3. Mix

Several researchers analyze diversification as a determinant of profit persistence (Chronopoulos et al., 2015; Sinha and Sharma, 2015; Yong, 2016; Yong, Floros and Anchor, 2017; Sarpong-kumankoma et al. ., 2018). It refers to the ability of banks to manage their business portfolio by promoting new activities far from the core business of intermediation. In line with the conclusions of (Sarpong-kumankoma et al., 2018) on banks in Sub-Saharan Africa, there is a positive relationship, although not highly significant, between diversification and profit persistence. For (Yong and Floros, 2012), diversification increases income, as banks with diversified portfolios can reduce costs through economies of scope. Conversely, for (Yong, 2016), strong diversification reduces the volume of funds allocated to the core business of intermediation, which generates an overall drop in margins. Similarly (Demirguc-Kunt and Huizinga, 1999) explain the negative relationship between diversification and bank profitability by the intense competition in other banking activities compared to the traditional interest income activity. Moreover, numerous studies suggest that diversification did not reduce banking risks because the volatility of other activities is higher than the relatively stable retail banking (Laeven and Levine, 2007).

2.1.4. Efficiency

Efficiency is the ability to achieve the company's goals at a lower cost. Some authors measure it as the ratio between expenses and assets (Pervan, Pelivan and Arneri, 2015; Tan, 2017; Yong, Floros and Anchor, 2017), while others compute it as the ratio of expenses to income (Goddard et al., 2013; Sarpong-kumankoma et al., 2018; Yuxiang, 2018; Rahman, Yousaf and Tabassum, 2020). Cost management is widely studied as a determinant of abnormal profit (PP Athanasoglou, Brissimis and Delis, 2008; Bouzgarrou, Sassi and Rouissi Béjaoui, 2010; Goddard et al., 2013; Pervan, Pelivan and Arneri, 2015; Yong, 2016; Yong, Floros and Anchor, 2017; Sarpong-kumankoma et al., 2018; Yuxiang, 2018). According to many studies, cost management is a significant variable of profitability in the banking sector. Analyzing the profit persistence of 78 sub-Saharan banks (Sarpong-kumankoma et al., 2018), concluded that efficiency has a significant impact in all the countries. Likewise (Goddard et al., 2013) found that cost management was significantly and negatively correlated to profit persistence in the 4,787 European banks studied between 1992 and 2007. Other researchers found a positive relationship between cost management and profitability (Molyneux and Thornton, 1992). They explained this counterintuitive conclusion by the importance of expenses due to high salaries, which indicate the presence of well qualified and productive staff who achieve high levels of profitability. This explanation is consistent with the theory of efficient wages (Akerlof, 1984). (Ben Naceur, 2003) also observed a positive relationship between operating costs and profitability in the Tunisian banking sector.

2.1.5. Solvency

Solvency is the ability of a corporation to meet its financial liabilities at any given time. For the banks, it takes particular importance. In fact, as a regulated industry, equity size represents the best guarantee for savers. Numerous articles studied the causal relationship between solvency and profitability in the banking sector (Ben Naceur and Kandil, 2009; Pervan, Pelivan and Arneri, 2015; Abel et al., 2018; Doyran, Santamaria and Santamaria, 2019; Cherkaoui, 2020). However, these studies led to ambiguous effects of solvency on profitability.

On the one hand, the higher the capital ratio, the lower the profitability because banks would mobilize more equity per additional unit of profit, which reduces the expected profitability (Abel et al., 2018). This relationship is also confirmed by the risk and return trade-off theory, implying a negative relationship between capital ratios and bank performance (Chronopoulos

et al., 2015). Most banks forgo the riskiest and, therefore, most profitable activities to comply with regulatory capital consuming standards (Mekia Ndzana, Jumbo and Nembot Ndeffo, 2020). Thus the trade-off between solvency and profitability is made to the detriment of the latter.

On the other hand, the greater the equity, the more it strengthens investors' confidence, which would lead to a positive relationship between the capital ratio and the persistence of abnormal profit (D. Jaisinghani, Tandon and Batra, 2015). In addition, banks with weak solvency must bear a higher cost of capital, which lowers their profitability (Chronopoulos et al., 2015). A conclusion shared by (Berger, 1995) suggesting a positive relationship between the capital ratio and the performance of banks.

2.1.6. Risk

A bank runs a default risk on part or all its capital when it funds a project taking an asymmetric risk. Indeed, when the project succeeds, the bank only earns its capital plus an interest rate. Otherwise, it loses all or part of its capital (Fontes, Panaretou and Peasnell, 2018). Risk is measured by the ratio of non-performing loans to credits distributed. Scholars generally agree on the negative effect of risk on profit persistence (PP Athanasoglou, Brissimis and Delis, 2008; Bouzgarrou, Sassi and Rouissi Béjaoui, 2010; Pervan, Pelivan and Arneri, 2015; Yong, 2016; Ferrouhi, 2017; Abel et al., 2018; Bayoud, Sifouh and Chemlal, 2018; Yuxiang, 2018; Rahman, Yousaf and Tabassum, 2020). This ratio is also an indicator of the quality of the credit policy within the banking institution. The higher it is, the higher the probability of defaulting credits. Banks with risky loan portfolios tend to charge higher interest rates to offset a greater risk of default (Bouzgarrou, Sassi and Rouissi Béjaoui, 2010). Empirical studies indicate that increased risk exposure leads, through the provisioning of bad debts, to decreased profitability (Amidu and Harvey, 2015; Petria, Capraru and Ihnatov, 2015).

2.1.7. Liquidity

One of the central banks' missions is to transform deposits into financing. While in the long term, a healthy bank balance sheet requires a match between the assets and liabilities, in the short term, a mismatch can result in liquidity problems. Liquidity is measured as a ratio of deposits to loans. The higher this determinant, the lower the liquidity of the bank, the higher its income from intermediation, which indicates a negative relationship between liquidity and profitability (Yong, 2016; Abel et al., 2018). Various studies showed that liquidity risk

transmission to defaulted loans deteriorates banks' profitability (Molyneux and Thornton, 1992). Economic theory professes that high liquidity reduces risk and lowers profitability (Rahman, Yousaf and Tabassum, 2020). A conclusion shared by (Yong and Floros, 2012) arguing that banks with high liquidity are less risky and display a solid financial structure. However, other articles state the opposite, claiming that liquidity and profitability are positively correlated. Analyzing the profitability of European banks (Bourke, 1989) concludes that banks with high liquidity are more profitable. According to him, a higher volume of loans would not automatically lead to a decline in profitability if the banks invest in sound risk management systems. Other articles also found a positive relationship between profitability and liquidity (Birindelli, Giuliana et al., 2015).

2.1.8. Concentration

There are numerous ways to compute the degree of concentration in an industry. Scholars widely use the Herfindahl-Hirschman index (HHI) to measure banking concentration (Marijana, Poposki and Pepur, 2012; Hirsch, 2013; Alhassan, Addisson and Asamoah, 2015; Petria, Capraru and Ihnatov, 2015; CCSRS, 2017; Mcmillan, 2018; Doyran, Santamaria and Santamaria, 2019). It equals the sum of market shares squares of individual banks. The HHI index ranges from 0 to 1. If the index is less than 0.10, the market is said to be not very concentrated. If it is between 0.10 and 0.18, the market is said to be moderately concentrated. If the HHI is higher than 0.18, it refers to a highly concentrated market (Benazzi and Rouiessi, 2017). Four explanatory hypotheses explain the concentration impact on profit persistence. The first one is the "structure-conduct-performance" (SCP) hypothesis stating that when concentration is high, banks exploit their market power by raising prices to extract an abnormal profit. The second one is the relative market power RMP), which asserts that companies with high market shares (size effect) and differentiated products (differentiation effect) exercise significant market power. The third one is the efficient structure hypothesis (ESX), which establishes that companies with efficient management and modern production technologies achieve low production costs and generate high profits. The fourth one is the efficient structure hypothesis (ESS), which assesses that companies with large-scale production can lower their unit costs and generate higher margin units (Goddard et al. ., 2013). The last two hypotheses question the validity of the first two ones by separating performance from the market structure.

2.1.9. Development of the banking sector

Scholars evaluate the development of the banking industry as the ratio of the sector's assets to GDP (Tan, 2017; Yong, Floros and Anchor, 2017; Sarpong-kumankoma et al., 2018).

The development of the financial sector in a country favors the expansion of banks' activities and strengthens their profitability. Research tends to identify a positive relationship between economic growth and banking sector development (Demirguc-Kunt and Levine, 1996; Fecht, Huang and Martin, 2008; Lin, Sun and Jiang, 2008; Luintel et al., 2008; Valickova, Havranek and Horvath, 2015). Therefore, the more widespread the banking and financial culture is in a country, the more stable and developed its banking sector.

2.1.10. Economic growth

The relationship between economic dynamics and the persistence of profits in the banking sector has been tested in several articles and tends to become, alongside the inflation rate, a standard in macroeconomic determinants of bank profitability (Angelini and Cetorelli, 2003; Al-tamimi, 2010; Choong, Thim and Kyzy, 2012; Amidu and Harvey, 2015; Dinesh Jaisinghani, Tandon and Batra, 2015; Abel et al., 2018; Bayoud, Sifouh and Chemlal, 2018; Rahman, Yousaf and Tabassum, 2020). The causal relationship seems to indicate a positive impact of economic growth on the persistence of profit. Indeed, a prosperous economy translates into business opportunities for banks, helping them extract and maintain abnormal profit, mainly if economic growth results from an expansive monetary policy through credit distribution (Twinoburyo and Odhiambo, 2018). Hence, a positive relationship is expected between economic growth and the persistence of banking profits. However, good business opportunities make the sector more attractive to competition, which in the absence of entry barriers could exert downward pressure on margins, affecting banks' profitability (Goddard et al., 2011; Yong, 2016).

2.1.11. Inflation

Inflation impacts both banks' revenues and costs (Abel et al., 2018). Abundant literature has studied the impact of price increase on bank profitability (Angelini and Cetorelli, 2003; Goddard et al., 2011; Poshakwale and Qian, 2011; Almumani, 2013; Almazari, 2014; Rioja and Valev, 2014; Rahman, Yousaf and Tabassum, 2020). In this regard, two schools of thought diverge on the expected effect of inflation on real bank profits. The first argues that banks,

being net monetary creditors, possess higher nominal assets than nominal liabilities. Inflation will, therefore, faster erode their assets than their liabilities.

On the contrary, the inflation tax school proponents believe that banks profit from times of inflation, as they use the tax on savings that inflation represents to boost their profits. Empirical studies have since shown that inflation harms bank profitability only if it is not correctly anticipated. On the other hand, if fully expected, banks will raise their interest rates to include an inflation premium (Perry, 1992).

2.2. Profit metrics

Researchers measure profits in the banking sector using three indicators: net intermediation margin, return on assets and return on equity (Tahraoui and Achiban, 2021).

2.2.1. Net intermediation margin (NIM)

The NIM evaluates the profit generated by the intermediation business. It is the ratio of interest margin to assets. Its use as an instrument for measuring the persistence of banking profits in the literature is prevalent (Carbó et al., 2008; Acaravci Kakili and Çalim, 2013; Almazari, 2014; Abel et al., 2018; Robin, Salim and Bloch, 2018; Salike and Ao, 2018; Kanga, Murinde and Soumaré, 2020). The NIM makes it possible to assess managers' success in making the banking business profitable for each unit of assets. When it is very high, it can also mean a low level of diversification and high exposure to the risks of interest rates variations, lowering its margins and increasing the value of its debt securities.

2.2.2. Return on Assets (ROA)

Return on assets measures the ability of managers to generate profit on all the assets made available to them by stakeholders. It is by far the main metric for assessing the banking persistence of profit. It has the advantage of covering all the banking activities, integrating its operational performance, and considering the quality of its credit policy, all after payment of tax. Therefore, the primary, if not unique, managers' mission is to maximize it (Friedman, 1970). Thus, the higher it is, the more it is a sign of financial performance and good management. Traditionally, it is measured as the ratio of net income to assets (Berger, 1995; Berger et al., 2000; Carbó et al., 2008; PP Athanasoglou, Brissimis and Delis, 2008; Albulescu Tiberiu, 2015; Kanga, Murinde and Soumaré, 2020). Some scholars use average assets in their calculation instead of the value of assets at the start of the period to better capture the financial

structure evolution, especially in high inflation periods (Kosmidou, 2008; Al-tamimi, 2010; Marijana, Poposki and Pepur, 2012; Bogdan and Ihnatov, 2014; Petria, Capraru and Ihnatov, 2015; Doyran, Santamaria and Santamaria, 2019). Other researchers try to normalize it by comparing it with the average bank profitability (Chronopoulos et al., 2015; Gugler and Peev, 2018; Sarpong-kumankoma et al., 2018) when others retain a target ratio as a standard for evaluating the level of return on assets (Yuxiang, 2018).

2.2.3. Return on equity

This variable evaluates the profit generated for a particular stakeholder, namely the shareholder. Return on equity is also used as an indicator of bank profitability (Cherkaoui, 2020). It mainly measures the use of the financial structure to improve the profit accruing to shareholders through the lever mechanism. The relationship between ROA and ROE is:

ROA = ROE x Leverage (assets/equity).

Banks with low leverage (high equity) will typically realize high ROA and low ROE, and vice versa. Nevertheless, since ROE's assessment of bank profitability does not consider the risks associated with high leverage, the latter is often imposed by regulation. Therefore ROA appears to be the most relevant indicator for assessing bank profitability (P. P. Athanasoglou, Brissimis and Delis, 2008). Other analysts take the opposite view and assert that banks benefit from having a high level of leverage. Banks are specialists with a comparative advantage in producing the liquidity they provide to economic agents who willingly pay a premium. Banks can, therefore, create value by using Risk Management techniques to build asset portfolios that can support capital structures with abundant amounts of relatively safe debt. This provision of liquidity through high leverage justifies the collection by banks of a premium (DeAngelo and Stulz, 2015). Some authors normalize the ROE by deducting a cost of equity capital to reflect better the value created for shareholders (Levonian, 1994; Goddard et al., 2013; Almazari, 2014; Dinesh Jaisinghani, Tandon and Batra, 2015).

3. New avenues of research

However, although very powerful, the usual explanatory paradigms no longer sufficiently reflect the growing integration of companies and the increasing shareholders' activism. True, the persistence of profit can result from the dynamics of a sector (static paradigm) or the firm's characteristics (dynamic paradigm). It can likewise result from the structure of ownership within horizontally integrated groups (agency theory) and the complex equilibrium between

positive and negative retroaction in a firm (theory of nonlinear dynamical systems). Thus, to better explain profit persistence, it is necessary to mobilize other explanatory paradigms of the formation and persistence of profit.

3.1. Agency theory

The agency theory has paradoxically received very little interest in analyzing the trajectory and persistence of profit. Paradoxically it is a powerful explanatory paradigm, as it analyzes the institutional conditions within the firm that facilitate (or not) the formation and the persistence of profit.

The distinction between ownership and management in modern corporations creates what economists have identified as an agency conflict (Fama and Jensen, 1983). In their seminal article (Jensen and Meckling, 1976) define the agency relationship as: "a contract under which one party (the principals) engage another party (the agents) to perform a service on his behalf, which involves the delegation of decision-making power to the latter. While both parties maximize their utility, the agent will not always act in the principal's best interests. The principal can reduce this divergence of interests by providing appropriate incentives for the agent and bearing the costs of controlling his decisions. However, it is usually not straightforward to achieve this alignment of the agent's interests with the principal's and ensure that the former will make the latter at zero cost. In most agency contracts, the principal and the agent bear the costs of surveillance and monitoring."

Consequently, firms have a rigid mission to maximize profits for their owners. This sole objective is achieved by recruiting managers who only care about profit maximization in the traditional homoeconomicus hypothesis. To align both parties' interests, managers are rewarded with bonuses indexed on the firm's profitability (Besley and Maitreesh, 2017). However, managers may pursue other objectives in the absence of such alignment than profit extraction and persistence. This situation is referred to as the "agency problem." It occurs when managers who take the company's most important decisions are not the main "residual claimants" and therefore do not suffer the consequences of their decisions on shareholders' profit. Therefore, without adequate control procedures, managers are more susceptible to take decisions that diverge from the objective of extracting and maintaining profits (Fama and Jensen, 1983).

Most articles covering the profit persistence topic only mobilized the neoclassical model of the "competitive environment hypothesis" in its static and dynamic versions. However, they explained banking profitability by assuming that the agency problem is a priori solved, which is not always the case. In large integrated groups, especially in developing countries, the agency problem can be an additional explanatory factor for profit persistence when these groups fully exploit the synergy effects. Indeed, large integrated groups in these countries and often enjoying proximity to the political authorities affect the occurrence, persistence, and profit distribution. Thus, until recently, research on the topic did not integrate the effect of institutional environment in explaining the profit differentials between banks or assume that the agency problem is homogeneous for all banks (Chacar and Vissa, 2005).

At the macroeconomic level, institutional economists have shown that the institutional framework in an economy, namely the combination of formal rules, informal constraints, and execution modalities, varies considerably from one country to another. Therefore, the agency problem significantly influences firms' strategies and profits (North, 1990).

Consequently, beyond the competitive environment hypothesis, future research on profit persistence should consider the effect of the growing integration of large financial groups that influences the formation and persistence of profit, both through the synergy and the spillover effects.

3.2. Theory of nonlinear dynamic systems

The classic explanatory paradigms of profit persistence of profit are content to observe the banking sector dynamics and the firm's characteristics in their study of profit persistence. However, they fail to describe the relations between the two effects, supposing them to be neutral.

Nonetheless, profit extraction and persistence result from complex interactions and equilibrium between factors of order and stability, on the one hand, and of disorder and instability on the other. Firms operate within nonlinear dynamic systems, so several contradictory forces come into play to realize and maintain profit. These internal and external forces lead the system either towards order and stability or towards instability and disorder. However, these forces first converge to realize profit and to maintain it.

According to (Thietart, 2000): "When the forces of order and stability dominate, as in the case of negative retroaction loops which brings the system back to its initial regime, a stable state is

observed. When the forces of disorder and instability prevail, when positive retroaction loops push the system beyond its original regime, explosive instability is observed. We witness a particularly interesting state, called 'Complex equilibria,' in the balanced presence of the two opposite. The first one brings the system back to its origin (negative retroaction), and the other one pushes it out of its natural regime (positive retroaction), that, perhaps observed: complex equilibria".

The stability factors in a firm are the processes aimed at keeping the system in a situation of control and continuity (planning and control process). On the other hand, instability and disorder factors lead to failures and disruption patterns (innovation and disruption process). Profit formation can only occur in the second pattern (positive retroaction), while its persistence requires a negative retroaction pattern.

	Industry[1]	**Firm**
Ordre	Quiet life	Planning and management control processes
Chaos	Collusion	Innovation, research & development, and disruption processes

Source: Author

In a sector in a situation of complex equilibrium, profit can only be null. When an actor to a transaction, generally the seller, has information before the conclusion of the contract (ex-ante) allowing him to extract the profit, we are in the presence of a "hidden information" called *adverse selection* (Akerlof, 1970). On the other hand, if this information asymmetry allows an actor to a transaction to influence its value, we are in the presence of a "hidden behavior", called *moral hazard* (Arrow, 1968; Grubel, 1971). These two phenomena can be important enough to compromise the willingness of less informed actors to participate in a transaction (Makadok, 2011).

[1] According to the collusion hypothesis, there is a positive relationship between the degree of concentration in an industry and the persistence of profit, insofar as actors who have reached a certain size protect their industries by entry barriers that prevent entrants from bringing profit back to the competitive norm of the sector (Goddard et al., 2011). Conversely, according to the "quiet life" hypothesis, there is a negative relationship between the level of concentration in a sector and the persistence of profit, because as firms reach a certain size, their managers prefer to enjoy a "quiet life " than to seek to achieve and maintain profits (Doyran, Santamaria and Santamaria, 2019).

The Walrasian general equilibrium models perfectly describe this situation of complex equilibrium. In the case of perfect information, no actor can realize profits at the expense of other stakeholders. Profit, which can only result from underpayment of other factors of production, is impossible to achieve because each actor has perfect information about the accurate price of his output.

Under these conditions, only positive retroaction would allow an actor to break the system's stability and take it to a situation of momentary disequilibrium (appearance of a profit). This disrupture only occurs through a significant innovation that imbalances the previous equilibrium of zero profit by distorting the informational sensor that allowed each stakeholder to know the actual price of his output. Once the disruption has broken their sensors, an actor can realize a profit at the expense of one or more stakeholders. This positive retroaction is the systemic explanation for profit formation.

To maintain it, the actor will then have to create a negative retroaction to stabilize and manage his innovation within this complex new equilibrium that he created. Maintaining the competitive advantage provided by positive retroaction can only be achieved through negative retroaction, which provides the order and stability necessary for profit persistence.

In a Schumpeterian view, profit extraction can only occur by bringing the system to the brink of chaos, by innovations and disruptions that disturb the old order (the destruction phase). The actor of this positive retroaction defines the new rules (game changer) that break the informational sensors of other stakeholders and allow him to realize profits above the competitive norms of a sector with players still trapped in the old equilibrium.

To make profit persists, the actor must orient the system in the direction of stability and order (creation phase) through planning, organizational, and control processes. His objective is to manage this new equilibrium and maintain his advantage as long as possible. The process goes on until a new player disturbs this equilibrium with a new positive retroaction.

Consequently, the formation and persistence of profit match the phases of destruction and creation in the Schumpeterian analytical framework.

Conclusion

Profit, its rationale, its formation, and its trajectory are very debated topics in management research. To date, no school of thought has formulated a satisfactory analytical framework. As for its evolution, two views dominate today's empirical microeconometrics:

• The first one is a random walk hypothesis, refusing to associate an a priori directory to the profit rate and favors a random walk stochastic process to its trajectory (random walk hypothesis).

• The second one is deterministic. It considers that when the markets operate freely, the profit rate of any firm tends to converge towards the competitive norm of the sector, so no profit is possible in the long term (static hypothesis of the competitive environment). When profit appears, it can only indicate a market imperfection due to the individual firms strategies (dynamic hypothesis of the competitive environment).

Nonetheless, these paradigms do not fully capture the complex reality in the environment in which profit forms and persists. They ignore the action of horizontally integrated groups where not only does the shareholder own the firm, but through the synergy effect, also brings business and profit. They also do not sufficiently explain the organizational factors and the interactions between actors with different interests, leading to a complex equilibrium called profit. To fill these gaps in research on profit persistence, we have mobilized two additional paradigms (agency theory and nonlinear dynamic systems theory).

BIBLIOGRAPHIE

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