Profit Persistence: is There A Conglomerate Effect? The Case of Banking and Insurance in Morocco

Nabil Adel, PhD
École Supérieure de Commerce et des Affaires (ESCA), Morocco
Siham Meknassi, PhD
Institut Supérieur de Commerce et d'Administration des Entreprises (ISCAE), Morocco

Abstract

This paper analyses profit persistence and its determinants in Morocco's banking and insurance sectors. The solid and increasing interdependencies between both actors are becoming a matter of concern for the regulatory authorities, as they threaten the country's financial stability. Using both static and dynamic hypotheses of the competitive environment model, we study the determinants of profit persistence in eight banks and eight insurance companies for 13 years, using a random-effects panel data model. While previous articles studied banks and insurers separately, we fill the gap in the literature by exploring the profit persistence as a result of their increasing capitalistic interdependence. Our results show a very low-profit persistence level, which signals a competitive financial sector. The main determinants of this profit persistence are diversification, efficiency, size, solvency, risk, and entry barriers. However, we find no evidence of any conglomerate effect, eliminating any synergy premium through cross participation between banks and insurance companies.

Keywords: Profit persistence, Diversified conglomerates, Dynamic hypothesis of the competitive environment, Structure-conduct-performance

Introduction

Since the financial crisis of 2008, financial stability has become a significant issue for monetary and financial regulators. The growing interconnection between financial institutions is now a crucial risk factor. The fall of Lehman Brothers almost brought in its wake that of Merrill Lynch and the insurer AIG; they were rescued in extremis by the federal state intervention. Henceforth, the risks are no longer isolated within the finance compartment but can be located at the intersection of relations between the various players in the financial market (credit institutions, insurance companies, and investment banks). Thus, the more financial players are integrated into large groups through capital linkages or business partnership agreements, the greater the systemic risk (Kaserer and Klein, 2016).

In Morocco, the big banks control the entire financial sphere of the country. This configuration might represent a significant factor of instability. Banks control 20.4% of assets at market value in the insurance sector and 30.5% of their unrealized capital gains[1]. As the source of a significant portion of the assets and sales of insurance companies, banks in Morocco also control their margins and profitability. Since the 2008 crisis, bank and insurance profitability curves have been almost identical, as shown in the following graph.

Figure 1: Evolution of ROE of the banking and insurance sectors in Morocco
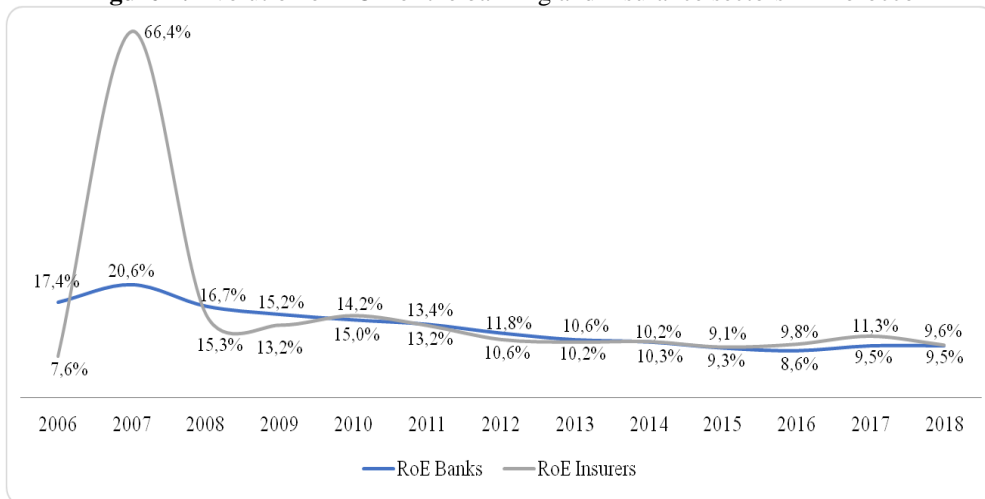
Source: Moroccan Central Bank and Moroccan insurance sector control authority

The interdependence between banks and insurance companies generates an overall systemic risk in the Moroccan financial market; the failure of one of the two parties, caused by their falling profits, will have a chain reaction on the entire economic landscape of the sector. Moreover, a

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[1] Source: Annual report of the Moroccan insurance sector – 2017, ACAPS

prolonged decline in profitability will undoubtedly impact banks' and insurance companies' solvency. Therefore, our central research question can be formulated as follows: **Is there a causal relation between cross-participation between bankers and insurers in Morocco and the persistence of their profits?** According to the OECD, "Conglomerate effects arise when a merger affects competition, but the merging firms' products are not in the same product market, nor are they inputs or outputs of one another.[2]" Our research contributes to the current literature on the topic in two ways. First, we verify the persistence of profit and explain its determinants in banking and insurance in Morocco. To our knowledge, no article has explicitly dealt with this subject. Research in this area has been limited to the study of banking and insurance profitability, not their persistence. The second contribution is to explore the profit persistence resulting from the capitalistic relations between bankers and insurers, where traditional analysis has separated them until now. To our knowledge, no article has tested this hypothesis.

Literature review

      In the literature on profit persistence, two main paradigms are usually used. The first is the static competitive environment hypothesis, and the second is the dynamic competitive environment hypothesis.

The static hypothesis of the competitive environment

      This theoretical framework assumes that the levels of profit in a sector result from its characteristics and the companies' capacity to avoid competition by erecting different forms of barriers to entry. Intuitively, the more intense the competition in a sector, the more moderate the profitability. Conversely, a sector sheltered from competitive pressure would generate better profits, *Ceteris Paribus* (Carlton and Perloff, 2005).

      The restriction to competition can take many forms. It can be endogenous, exogenous, or structural (Makadok, 2011). Some limitations to competition are endogenous and result from implicit or explicit collusion between rivals, such as price-fixing, bid-rigging, market division, and cartels. It can also derive from an exogenous intervention, such as public price control, particularly on essential commodities or barriers to entry through approvals or licenses. Restrictions can also be structural, such as brand loyalty, transfer costs, transport, or cost adaptation for horizontally differentiated products.

      Whatever its form is, the restriction to competition affects profits in a sector by artificially increasing output prices or reducing input costs. Thus, in

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[2] OECD, "Conglomerate effects of mergers". Available on:
https://www.oecd.org/competition/conglomerate-effects-of-mergers.htm. Accessed, January, 9th 2022

the absence of market discipline to bring these inputs/outputs back to their competitive norm, these limitations are the primary source of profit formation and persistence.

The central teaching of this paradigm, also known as the "Structure-Conduct-Performance" (SCP) Paradigm, is that profit results from competition dynamics and the industry's structure (Goddard et al., 2011). This assumption allows us to understand better companies' strategies for extracting and maintaining profits (Tamirat, Trujillo-barrera, and Pennings, 2018). Several analytical models have captured these strategies; for instance, the "five forces" model considers barriers to entry and exit, product differentiation, and the number of competitors, suppliers, and customers (Porter, 2008).

The dynamic hypothesis of the competitive environment

The dynamic hypothesis takes the opposite view. It differs from the static one, which takes the impact of the industry structure on the profits persistence as a fundamental postulate, independently of the individual strategies of firms within the industry to extract and maintain profit (Mueller, 1977, 1990). In other words, instead of setting the "industry structure assumptions" independently of the companies' performance and ignoring any difference in profit between the companies inside the industry, the proponents of *the dynamic hypothesis of competitive environment* adopt an adaptive vision of organizational and environmental change. They observe that many companies adapt their strategies and capabilities as competitive environments evolve. They, therefore, focus more on the individual characteristics of firms to explain their performance differentials than on the structure of the industry (Lin, Chen, and Lo, 2014).

This approach is the backbone of the competitive advantage theory, also known as RBV (Resource Based View), the standard in profit persistence analysis today (Tamirat, Trujillo-barrera, and Pennings, 2018). Its central idea is that the extraction and persistence of profit result from the operational strategies of firms and their ability to implement efficient processes for transforming inputs into outputs (Makadok, 2011). Indeed, according to the proponents of this theory, competition eliminates profit through the price mechanism, allowing customers to buy the same products at lower prices. However, companies developing unique advantages can generate and defend gains above the competitive norm, regardless of the industry's structure (Demsetz, 1973). This advantage is obtained and maintained by acquiring scarce, valuable, non-substitutable, and non-imitable resources (Barney, 2001). Resources that preserve a competitive advantage will also generate superior and persisting economic performance over time (Tamirat, Trujillo-barrera, and Pennings, 2018).

Empirical observation of the persistence of banking profit in developing countries

Many studies tested the validity of both static and dynamic hypotheses by observing banks' profits behavior in emerging countries. Sarpong-kumankoma et al. (2018) study the profit persistence of 21 banks in Ghana, 14 in Tanzania, 27 in Kenya, and 16 in South Africa, from 2006 to 2012. They use a two-step system GMM to estimate their model and utilize a return on average equity as a proxy for profit persistence. They observe that the lagged dependent variable (eROAEt-1) assessing the level of persistence is statistically positive and significant, which validates the hypothesis of bank profit persistence. In their study, the coefficients of industry were as follows:

Table 1: Summary of the coefficients of persistence in 4 sub-Saharan countries

	Kenya	**Ghana**	**Tanzania**	**South-Africa**
Coefficients of persistence	0,214	0,257	0,320	0,445

Source : Sarpong-kumankoma *et al.* (2018)

As for the determinants of this persistence, the authors conclude that economic freedom had a significant and negative impact in Ghana but not in the other countries, suggesting that the solid economic freedom enjoyed by banks in Ghana resulted in greater competition and, therefore, lesser profits persistence. This conclusion is in line with Amidu and Harvey (2015), for whom persistence is reduced by competition in countries with strong institutions. Credit risk has a significant and negative impact on profit persistence in South Africa due to the banks' high exposure to credit activity, exposing them to high-risk loans and, therefore, higher loss probability (Dietrich and Wanzenried, 2011). In contrast, credit risk has a significant and positive effect in Tanzania but not in Ghana or Kenya. Maud and Fernández de Guevara (2004) believe that the positive relationship between credit risk and profit persistence comes from banks making risky loans offset with higher provisions and, therefore, higher-risk premiums.

Efficiency is a fundamental determinant of profit persistence in all countries. Its negative and significant effect suggests that profit persistence could be improved through sound cost management systems, confirming the results of previous studies, which concluded that efficiency rather than concentration could be an important determinant of profitability. Financial sector development is a significant and negative determinant in Kenya and Ghana, but not Tanzania and South Africa. The significantly negative coefficients observed for Kenya and Ghana imply that the development of the banking sector may be associated with increased competition and, therefore, lower profitability. Thus, the financial development level differences may explain the results observed in these countries. Finally, the diversification coefficients are positive but insignificant in all the countries in the sample.

That might suggest that increased involvement of banks in other activities may increase profitability, but not to the point of explaining the levels of profit persistence in the sampled countries.

Batten and Vo (2019) study the profit persistence of 35 banks in Vietnam between 2006 and 2014 using fixed-effect panel data and a GMM estimator. They use net interest margin (NIM) and the return on average assets (ROAA) are dependent variables. Their analysis shows that, like the banking sector in China (Yong, 2016), profit is not persistent, as indicated by the different coefficients obtained:

Table 2: Profit persistence coefficients in China

	ROAA	ROAE	NIM
Coefficients of persistence	0,265	0,076	−0,004

Source: Batten and Vo (2019)

As for the determinants, size has a negative and significant impact in most regressions. The solvency level has a positive and significant effect in all regressions. Analysis of banks in Vietnam indicates that those with higher risk tend to benefit from stronger NIMs and lower ROAEs. Efficiency also has a positive and significant impact on NIM. On the other hand, it is linked negatively and significantly to the ROAA. Furthermore, the empirical results of this analysis do not support the SCP hypothesis. Indeed, the concentration coefficients are negative and significant in the regressions where the NIM is the dependent variable.

Pervan, Pelivan, and Arneri (2015) study the persistence of profit of 46 banks in Croatia from 2002 to 2010, using the ROA as a measure of profit. They used the one-step difference GMM and Markov chain to validate their results. This study shows that the persistence of bank profits in Croatia is statistically significant and low. The value of the delayed variable is 0.13, close to zero, indicating a banking sector with intense competition and a high speed of adjustment of profit rates towards the competitive norm. As for the determinants of this persistence, the article confirms the assumption that big banks make high profits. Solvency also has a positive and significant effect on profitability, meaning that banks with high capital ratios are more profitable. The impact of credit risk is negative and significant on profitability, confirming the hypothesis that banks with no effective credit risk management policies achieve low levels of profitability. Diversification has a significant and positive effect on profitability, suggesting that diversified banks make more persistent profits than banks focused on traditional intermediation activity. The article concludes that the concentration ratio is significantly and positively related to persistence at the industry level. This finding confirms the SCP hypothesis that the more concentrated a market is, the higher the banks' profitability. Finally, on the macroeconomic level, GDP growth has a positive

and significant effect on the profitability of Croatian banks, while inflation affects it negatively.

Data, variables, and model

We analyzed the data of eight banks and eight insurance companies over 13 years between 2006 and 2018. We extract the data from the annual reports of the companies and supervisory authorities' annual reports. Macroeconomic data were extracted from the IMF database. Banks in our sample represent 99% of the banking sector's Net Banking Income[3]. For the insurance sector, we study all general insurance companies.

We use the return on assets ratio (ROA) to evaluate profit persistence, measured as net income ratio to total assets. The ROA measures the ability of executives to generate profit on all the assets. It's the preeminent index for evaluating the profit persistence in the financial sector (Kanga, Murinde and Soumaré, 2020). We select the following explanatory variables:

Size is measured as the natural logarithm of its assets (Jiang, 2018) and refers to assets that the financial institution manages and utilizes to generate revenues for all its stakeholders. The impact of asset size on profit persistence is a priori unknown and diverges according to the underlying studies and the theoretical frameworks the authors use. Large institutions can reduce costs through economies of scale compared to smaller banks (Goddard et al., 2013). For Abel et al. (2018), on the other hand, size negatively influences banks' profitability due to the bureaucracy and cumbersome management specific to large structures.

H₁. The larger the financial institution's size, the higher the profit persistence.

Growth is a materialization of the company's dynamic and competitiveness. This variable is frequently analyzed in the literature (Chronopoulos et al., 2015). The impact of the growth of their assets on the profitability of financial institutions is not established a priori. A financial institution with rapid asset growth can more easily develop and invest in its current operations and create new activities, ultimately fostering its profits (Sinha and Sharma, 2015). On the other hand, rapid asset growth could lead to solvency problems if it does not go hand in hand with rigorous risk management and cost control. Moreover, strong growth acts as a signal associated by investors with superior profits in a market. The latter can attract potential competitors, reducing existing companies' future profits and growth (Cable and Mueller, 2008).

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[3] Moroccan Central Bank annual report, 2018

H₂. Profit persistence is positively related to asset growth.

Several researchers use ***Diversification*** to analyze profit persistence (Sarpong-kumankoma et al., 2018). It refers to an institution's ability to have multiple sources of income in portfolio management and risk reduction logic. For banks, Diversification equals the ratio of non-loan income to assets. For insurance companies, it corresponds to the share of the net investment income to total operating profit. The author (Sarpong-kumankoma et al., 2018) observed a positive relationship between Diversification and profit persistence. For (Yong and Floros, 2012), Diversification increases bank revenues. In addition, banks with more diversified operations can reduce costs through economies of scope. On the other hand, for Yong (2016), strong Diversification decreases the volume of funds allocated to traditional intermediation activities, generating overall declining margins.

H₃. The stronger the Diversification, the weaker the persistence of profit.

Efficiency is the ability to achieve goals at a lower cost, and it is measured as the ratio between expenses and assets (Pervan, Pelivan, and Arneri, 2015; Tan, 2017; Yong, Floros, and Anchor, 2017). Efficiency is widely studied in the literature as the primary determinant of profit persistence in many countries (Goddard et al., 2013). According to several studies, cost control is a crucial variable of profitability in banking and insurance (Goddard et al., 2013; Sarpong-kumankoma et al., 2018). Other researchers have shown a positive relationship between operating costs and profitability (Molyneux and Thornton, 1992).

H₄. The lower the costs, the higher the persistence.

Solvency is the ability of a company to meet its commitments toward its various stakeholders at any moment. It is of particular importance for the financial sector insofar as, being a regulated activity, the size of equity is the best guarantee for the customers. Solvency is equal to the ratio of the equity capital to assets. Several studies have investigated the causal relationship between solvency and profit persistence in the financial sector (Santamaria and Santamaria, 2019). However, the findings lead to ambiguous effects of solvency on profitability. On the one hand, the higher the capital ratio, the lower the profitability, as the establishment would mobilize more equity capital per additional profit, consequently reducing the expected profit (Abel et al., 2018). On the other hand, the larger the capital, the more it reinforces savers' confidence, which leads to a positive relationship between the capital ratio and the persistence of profit (Jaisinghani, Tandon and Batra, 2015).

H₅. Solvency has a positive effect on profit persistence.

***Risk*.** In financing the various economic agents, a financial institution runs the risk of default on a fraction or all the credit distributed. In this case, the borrower takes an asymmetric risk. If the project succeeds, the lender earns only the capital plus an interest rate, no matter how high the borrower earns the profits. On the other hand, if the investment fails, it loses all or part of its capital (Fontes, Panaretou, and Peasnell, 2018). We calculate credit risk as the ratio of non-performing loans to credits. The literature regularly studies the impact of this variable on bank profitability. The authors agree that high risk reduces profit persistence (Rahman, Yousaf and Tabassum, 2020).

H₆. High risk levels decrease profit persistence.

Liquidity is evaluated in the literature as the ratio between credits and assets or credits over deposits. The more important this ratio, the lower the bank's liquidity, but the higher its revenues from credit activity, concluding a negative relationship between liquidity and profitability (Yong, 2016). Various research studies have shown that liquidity risk deteriorates profitability (Molyneux and Thornton, 1992). If economic theory admits that profitability and risk are positively correlated, high liquidity reduces the risk level and thus profitability (Rahman, Yousaf and Tabassum, 2020). This conclusion is shared by Yong and Floros (2012), who argue that financial institutions with high levels of liquidity are less risky and would exhibit a solid financial structure. Yet, other papers conclude the opposite, claiming that liquidity and profitability would be positively correlated. For example, Bourke (1989), analyzing the profitability of European banks, argues that those with higher levels of liquidity have equally high profitability.

H₇. The higher the liquidity, the lower the persistence of profit.

Cross-participation will be measured by a dummy variable (0= no cross-participation; 1= with cross-participation). Indeed, one of the specificities of the Moroccan financial sector is the strong capitalistic relationships between banks and insurance companies through cross-holdings.

     This configuration is not unique to Morocco. Other countries display similar industry structures, such as Japan, where the Japanese *corporate governance system* is based on *keiretsu*, i.e., arrangements of affiliated companies around blocks of cross-shareholdings. Thus, the largest Japanese financial institutions (banks, insurance companies, trading houses, *trust banks*) occupy the positions of key players in these stable blocks of interrelations (Loulmet, 1998).

H8. The presence of cross-ownership accentuates profit persistence.

Concentration. To measure this variable in the Moroccan banking and insurance sectors, we used the Herfindahl-Hirschman Index (HHI), in line with previous studies (Doyran, Santamaria and Santamaria, 2019). Four hypotheses explain the impact of concentration on profit persistence. The first is the structure-conduct-performance (SCP) hypothesis, which states that when concentration is high, banks exploit their market power by raising prices to extract profit. The second hypothesis is relative market power (RMP), which states that firms with high market shares (size effect) and differentiated products (differentiation effect) exercise significant market power. The third hypothesis is the '*x-efficiency*' version of the efficient structure hypothesis (ESX). Firms with efficient management and modern production technologies achieve low production costs and consequently high profits. The fourth hypothesis is the '*scale efficiency'* version of the Efficient Structure Hypothesis (ESS), which states that firms that produce on a large scale have low unit costs, which allows them to generate higher unit margins (Goddard *et al.*, 2013). The last two hypotheses challenge the validity of the first two by decoupling performance from concentration.

H9. The higher the industry concentration, the stronger the persistence.

Barriers to entry. The inclusion of this variable aims to measure the competitive intensity within the banking sector in Morocco. Indeed, the lower the industry barriers, the higher the prices, and the more competition quickly eliminates any abnormal profit. This variable completes the concentration analysis of an industry. Even in a highly concentrated sector, if capital movements are unrestricted, profits converge towards their competitive norm, eliminating any persistence (Gugler and Peev, 2018). We measure this variable as the change in the number of banking actors. We expect a positive impact of this variable as the higher the barriers to entry, the more persistent the profits, *Ceteris Paribus* (Goddard *et al.*, 2011).

H10. Higher barriers to entry increase profit persistence.

Economic growth is the change in GDP at constant prices. The relationship between economic growth and profit persistence is widely analyzed in the literature (Rahman, Yousaf and Tabassum, 2020). The causal relationship suggests a positive impact of economic growth on profit persistence. Indeed, prosperous economic conditions translate into more significant business opportunities for banks and insurers, helping them extract and sustain profit, mainly if economic growth results from credit-expanding monetary policy

(Twinoburyo and Odhiambo, 2018). Thus, a positive relationship is expected between economic growth and profit persistence. However, the presence of solid opportunities makes the sector more attractive to competition, which in the absence of barriers to entry, could exert downward pressure on margins, and as a result, a negative relationship could exist between GDP growth and profit persistence (Goddard *et al.*, 2011; Yong, 2016).

H₁₁. The greater the economic growth, the stronger the persistence.

Inflation is the variation of the consumer price index (CPI). Inflation impacts both financial institutions' revenues and costs (Abel *et al*, 2018). The study of the impact of rising prices on profitability has been the subject of extensive literature (Rioja and Valev, 2014; Rahman, Yousaf and Tabassum, 2020).

H₁₂. High levels of inflation positively affect profit persistence.

The number of determinants tested in our study is in line with other research that has tried a similar number of explanatory variables (Yong, 2016).

Econometric model

The statistical model used is based on a panel data analysis, in line with previous studies (Obamuyi, 2013; Albulescu Tiberiu, 2015; Salike and Ao, 2018). Indeed, the study data present a two-dimensional aspect combining an observation over time and on the same individuals (banks and insurance companies), and this, on a relatively small sample (08 banks and 08 insurance companies) and over a rather long period (13 years). Furthermore, we used a panel data analysis since conventional linear regression cannot capture unobservable heterogeneity and endogeneity (Gupta and Mahakud, 2020). The profit equation is, therefore, as follows:

$$\pi_{it} = c + \delta\pi_{it-1} + \sum_{k=1}^{K} \beta_k X_{it}^K + \varepsilon_{it}$$

π_{it} π_{it} is the profit of firm i at time t; i ranging from 1 to 16 and t ranging from 1 to 13. c c is a constant value that takes the same value for all firms studied across all periods. π_{it-1} π_{it-1} refers to the profit lag of one period. X_{it} corresponds to the vector of separate explanatory variables, and the $\beta_k\beta_k$ is the vector of constant coefficients to be determined. $\varepsilon_{it}\varepsilon_{it}$ measures the unobservable effect. It is the addition of two effects: $\alpha_i\alpha_i$ which is the unobserved individual effect of the institution (it is incorporated into the

model to explicitly address the heterogeneity bias across companies) and μ_{ij} μ_{ij} which reflects the interaction of unobserved sources of individual and time variation (Bouzgarrou, Sassi and Rouissi Béjaoui, 2010). $\delta\delta$ traces the speed of adjustment of profit to the competitive norm corresponding to an optimal level of profitability (Doyran, Santamaria and Santamaria, 2019). If $0<$ $\delta\,\delta$ <1, we are in the presence of a sector where profit persistence is observable and shows signs of persistence, depending on its trend. If $\delta\delta$ tends to 0, it corresponds to a high speed of adjustment and a competitive sector. If $\delta\delta$ tends to 1, this would mean a slow pace of adjustment and a low competitive industry with barriers to entry or collusion between operators (Sinha and Sharma, 2015).

Empirical results
Descriptive statistics

Table 3 provides descriptive statistics for the series of data. The average ROA is 1.66%, with substantial disparities among the population, with a standard deviation of 1.11 times the average. The minimum return was -8.58% and the maximum 17.5%, indicating wide disparities in the financial performance of banks and insurance companies. At the microeconomic level, financial institutions in our sample exhibit solid asset growth (8% on average), high-risk levels (19%), and robust liquidity levels (with a liquidity ratio of 101,3% on average). At the industry level, concentration is moderate, and barriers to entry are high, while at the macroeconomic level, inflation is relatively contained, and economic growth is strong (4% on average).

Table 3. Descriptive statistics

Variables	Number of obs.	Mean	Std. Dev.	Dispersion	Min	Max	Range
ROA	217	0,017	0,018	1,113	-0,086	0,175	0,261
Microeconomic indicators							
Growth	217	0,080	0,081	1,009	-0,261	0,491	0,752
Diversification	217	0,027	0,027	0,985	-0,017	0,246	0,264
Efficiency	217	0,036	0,020	0,547	0,015	0,105	0,090
Size	217	20,72	2,526	0,122	16,78	24,46	7,687
Solvency	217	0,118	0,047	0,400	-0,001	0,248	0,248
Risk	217	0,191	0,246	1,290	-0,004	1,025	1,028
Liquidity	217	1,013	0,173	0,171	0,443	1,845	1,403
Industry specific indicators							
Concentration	217	1,479	0,167	0,113	1,237	1,700	0,463
Barriers to entry	217	15,48	3,037	0,196	12,00	19,00	7,000

Macroeconomic indicators							
Inflation	217	0,016	0,009	0,583	0,004	0,039	0,035
Economic growth	217	0,040	0,015	0,371	0,011	0,076	0,065

Note: The number of observations is the same for all variables, as we worked on a balanced panel. Dispersion is measured as the ratio of the standard deviation to the mean. The range is equal to the difference between the maximum and the minimum.

Multivariate analysis

Table 4 summarizes the results of the regressions, measuring, on the one hand, the profitability of the assets delayed by one period (level of persistence) and providing, on the other hand, the determinants of profitability. The persistence level is highly significant at 5%. It is 0.0702, which is very close to the value found by Abel *et al.* (2018) for banks in Zimbabwe at 0.0048. However, it is far from developing countries' mean of 0.426 (Goddard *et al.*, 2013). This persistence, which tends to be zero for banks and insurance companies in Morocco, is very low and signals a highly competitive financial sector with a high speed of profit adjustment towards the competitive norm. Indeed, even if the Moroccan financial industry is not very open to competition, as evidenced by the stability of the number of institutions, competition among the players is still very strong.

Table 4. Regression results

Variables	Pooled regression (1)	Pooled regression (2)	Fixed effects	Random effects
ROA	**0,095****	**0,089****	**0,066***	**0,070***
	(0,039)	(0,039)	(0,040)	(0,038)
Microeconomic indicators				
Growth	0,009	0,009	-0,012	-0,005
	(0,008)	(0,009)	(0,009)	(0,009)
Diversification	**0,559*****	**0,556*****	**0,590*****	**0,576*****
	(0,030)	(0,031)	(0,034)	(0,031)
Efficiency	**-0,150*****	**-0,157*****	**-0,318*****	**-0,230*****
	(0,046)	(0,047)	(0,108)	(0,070)
Size	**-0,004*****	**-0,004*****	-0,003	**-0,005*****
	(0,001)	(0,001)	(0,003)	(0,001)
Solvency	**0,111*****	**0,117*****	0,049	**0,091*****
	(0,019)	(0,021)	(0,035)	(0,028)
Risk	**0,019*****	**0,019*****	**0,016*****	**0,018*****
	(0,004)	(0,004)	(0,006)	(0,005)
Liquidity	-0,002	-0,002	0,008	0,002
	(0,004)	(0,004)	(0,007)	(0,006)
Cross-ownership		0,001	0,008	0,003
		(0,002)	(0,005)	(0,003)

Industry indicators				
Concentration	-0,004	-0,004	-0,008	-0,007
	(0,009)	(0,009)	(0,009)	(0,008)
Barriers to entry	-0,001	-0,001	-0,003***	-0,002***
	(0,001)	(0,001)	(0,001)	(0,001)
Macroeconomic indicators				
Inflation	0,007	0,010	0,005	0,003
	(0,042)	(0,042)	(0,044)	(0,042)
Economic Growth	-0,032	-0,029	-0,025	-0,029
	(0,053)	(0,053)	(0,055)	(0,050)
Constant	0,089***	0,087***	0,113*	0,126***
	(0,028)	(0,028)	(0,067)	(0,032)

Number of Observations	201	201	201	201
Number of groups	16	16	16	16
LMLM Test				$\chi2(1)= 3,03$ 0,041
Hausman Test				$\chi2(14)= 11,9$ 0,610
Wald Test				$\chi2(14)=671$ 0.000
Sigma_u			0,008	0,005
Sigma_e			0,007	0,007
Rho			0,516	0,270
R-squared	0,800	0,801	0,788	0,787

Note : *; **; *** indicate significance at 10%; 5% and 1% respectively. Standard errors are reported in parentheses. The Hausman test yields a Chi2 probability greater than 0.05, implying that the random-effects model is preferable to the fixed-effects model. The other tests are satisfactory (LM and Wald) at less than 0.05 and the high level of the coefficient of determination indicates a suitably calibrated model. Additional tests (non-reported) conclude to the absence of heteroscedasticity and multicollinearity between the variables.

As for the determinants of this persistence, ***Diversification*** has a positive impact. It is a solid explanatory factor of banks' and insurance companies' profitability in Morocco. Indeed, for banks, the continuous decrease in the central bank interest rates in the wake of an expansive monetary policy has reduced the profits from credit activity, forcing them to seek other sources of profit. For insurers, profit comes more from asset management activity than risk coverage. Therefore, the more assets they have, the more they generate investment margins when financial markets are bullish, and they suffer heavy losses when they turn bearish. This relationship is

consistent with that identified by Yong and Floros (2012) on banks in China and by Sarpong- kumankoma *et al*. (2018) on banks in Sub-Saharan Africa.

Size also has a very significant adverse effect on profit persistence. Indeed, size acts as a factor favoring economies of scale for banks and as a lever for additional revenues for insurance companies. In the case of Morocco, the relationship is negative, indicating the presence of diseconomies of scale and organizational inefficiency that are consubstantial with the bureaucratic tendencies of large structures. This phenomenon was observed by Abel *et al. (*2018), who concluded that size leads to decreasing marginal returns due to an increase in organizational rigidity resulting from an expansion in size, while Barros, Ferreira and Williams (2007) explained this negative relationship by the information asymmetry problems faced by big players.

Solvency also has a very significant positive effect on profitability. Indeed, the greater the size of equity, the more latitude the institution has to engage in risky but profitable activities. For Batten and Vo (2019), even though equity negatively affects ROAE in the long run, correctly endowed banks perform better. On the other hand, the greater the capital, the more it enhances savers' confidence (Jaisinghani, Tandon and Batra, 2015), while institutions with low creditworthiness must bear higher costs which translates into lower profitability (Chronopoulos *et al.*, 2015).

Efficiency has a negative and significant effect on profit persistence. Cost control is a factor favoring the performance of financial institutions in Morocco. This finding validates the efficient structure hypothesis, which states that firms with the ability to produce at lower costs than the competition are likely to generate and maintain profit (Berger, 1995). It is consistent with the result of the study of Pervan, Pelivan, and Arneri (2015), who concluded that efficiency was a significant variable for the 46 Croatian banks and that of Goddard *et al.* (2013) for 4787 European banks that they studied between 1992 and 2007.

Risk positively and significantly affects the profit persistence of financial operators in Morocco. That is quite rare, as the risk is generally negatively correlated with profitability (Abel *et al.*, 2018). But the Moroccan case, while unusual, is not unique. Indeed, Sarpong-kumankoma *et al.* (2018) observed the same pattern in banks in Tanzania, which Maudos and Fernández de Guevara (2004) explain by the fact that institutions that make risky loans compensate for them with higher provisions and, therefore, higher risk premiums.

Among the external variables, only barriers to entry show a significant but negative relationship with profitability. In other words, the higher the barriers to access, the lower the profitability. While contradicting the static hypothesis of the competitive environment (Goddard et al., 2011), this finding highlights the intense competition between incumbent players, which drives

them into rate wars that ultimately reduce their profitability, hence the low levels of persistence observed in this study.

In contrast, the most important finding of this paper is the following. Although the impact of cross-ownership on profit persistence in Moroccan banking and insurance is positive, it is not significant in any of the regressions we conducted. This has an important implication: the synergy expected from cross-participation by a bank or insurance company in Morocco did not materialize in value creation. It confirms the problem of the poor financial performance of diversified conglomerates (Laeven and Levine, 2007). Cross-holding did increase insurers' revenues via the cross-selling channel, as noted by Chiang (2019) in the case of bancassurance in the U.SU.S. That was also the case in Morocco, where cross-holding between banks and insurance companies has favored the development of bancassurance activity (CCSRS, 2018). However, it is clear from the results of this study that the growth in sales has not translated into sustained profitability, which remains very low in Morocco and depends on factors other than the synergy effect expected from cross-holdings.

This conclusion is of definite managerial significance and should be considered by managers of financial institutions in Morocco before paying important premiums for synergies, which may never materialize.

Conclusion

The 2008 crisis has put banks and insurance companies under intense scrutiny. On the one hand, many scholars point to their responsibility in the outbreak of the crisis. On the other hand, their financial health, measured by the profit rate, has been strongly affected. In Morocco, they have not escaped this rule, especially since, in addition to the continued decline in their profitability, the level of their cross-shareholdings raises fears of systemic risk. And for a good reason, the persistence of bank profits is the subject of growing interest within the research community.

Studies in this direction mobilize two theoretical frameworks. The first is the static hypothesis of the competitive environment, which explains the persistence of profit by the specific characteristics of a sector and the protection from external competition that it manages to put in place. The second is the dynamic hypothesis of the competitive environment. While recognizing the importance of sectorial characteristics in explaining profitability, this hypothesis focuses on the strategies deployed by firms to extract and maintain their profit. It better explains the differences in profitability observed within the same sector.

In this paper, we analyze the ROA of 8 banks and 8 insurance companies from 2006 to 2018, using a random-effects panel model. In addition to the usual determinants from the literature review, our main

contribution to the literature consists of utilizing the cross-ownership variable as an additional profitability factor. The results show that the level of persistence in Morocco is very low at 0.07, which means that than only 7% of one year's profits persist into the following year, implying a relatively competitive financial sector. As for the determinants, diversification, solvency, barriers to entry, size, and risk significantly explain the profitability of banks and insurance companies. The first two variables have a positive impact on profitability, while the last three have the opposite effect.

Finally, we find no conglomerate effect on profit persistence in banking and insurance in Morocco. Indeed, although the relationship between cross-ownership and profitability is positive, it is not significant. This indicates the absence of a synergy effect on profitability and that belonging to a diversified group does not increase the profitability of a bank or insurance company in Morocco, a lesson that managers should consider when negotiating the acquisition price of cross-holdings.

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