Does ownership affect banks profitability? Some international evidence.

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Abstract

This paper analyzes how banks’ profitability varies depending on the type of bank ownership. We compare stock banks, mutual banks, state-owned banks and saving banks organized as foundations, using country-level panel data from eight OECD countries to correct for unobserved country heterogeneity. Our results indicate that mutual and state-owned banks have higher interest margins than commercial stock banks that are not explained by differences in risk. However, mutual and state-owned banks do not have higher net income than stock banks because they also have higher non-interest expenses. Furthermore, the results indicate that state-owned banks have the lowest risk-taking motivation, and that mutual banks use provisions for income smoothing.

Keywords: bank ownership, profitability, risk, regulation, panel data.
JEL Classification: G21, G24, G28.
1. Introduction

Since Jensen and Meckling (1976), it has been widely accepted that organizational form influences operating behavior, as it defines the nature of residual claims and, thus, the motivations of the firm’s owners. Without regulation, competition has the effect in the long run of obliging firms to establish the most efficient corporate governance and allocation of control rights, making the ownership structure of firms endogenous. In such a scenario no relationship between the firm’s profitability and the type of organizational form is expected (Demsetz, 1983; Demsetz and Lehn, 1985). However, banking is one example of how regulation affects corporate governance because national laws define some bank ownership types. In these cases, bank ownership is an exogenous variable because banks cannot freely adopt their optimum ownership structure, and differences in profitability and risk-taking behavior may arise between banks with different type of ownership.

Previous work on the influence of the organizational form of banks has focused on the differences in profitability and in risk-taking between stock-owned banks and mutual banks, as the mutual organization is the main alternative to stock banks existing in the US. However, one of the hallmarks of other countries, including some European countries, is the existence of state-owned banks and savings banks organized as foundations, where depositors, employees and local and regional governments are represented on their governance bodies.

Moreover, the convenience of converting savings banks organized as foundations and government-owned savings banks into stock-owned institutions is currently being discussed in many European countries. On the one hand, savings banks have been converted into stock institutions in Great Britain, Denmark, Italy and Holland. In contrast, in countries such as Finland, France, Germany, Spain and Switzerland there are savings banks with different ownership structures. There is an ongoing debate in these countries, ranging from more extreme proposals about the convenience of savings banks being converted into stock institutions to proposals that defend the current structure, whilst modifying the participation of depositors, employees and local and regional governments in the ownership of saving banks.
However, empirical evidence about the consequences of different types of bank ownership on profitability is basically limited to the US and to comparing stock banks with mutual banks, whereas it is scarce for other countries and for other types of bank ownership. Some exceptions are Barth et al. (2001), La Porta et al. (2000) and Verbrugge et al. (1999), who focused on samples of government-owned banks in developed and developing countries. The following study attempts to extend current empirical evidence about the influence of bank ownership on the operating behavior of banks by analyzing simultaneously how bank profitability varies among four different types of bank ownership (stock, mutual, state and foundation owned banks) in eight OECD-European countries (Finland, France, Germany, Italy, Norway, Spain, Sweden and Switzerland). We control for risk by using risk-adjusted and non-risk adjusted earnings measures, and three earnings measures (net interest income, net income and profit before taxes) are also employed to analyze potential differences in performance. Comparison of these measures should indicate the origin of any difference in performance between stock banks, mutual banks, state banks or banks organized as foundations. Furthermore, we also extend the scope of previous studies by controlling for unobserved country heterogeneity and time effects using country-level panel data from 1987 to 1997.

The rest of this paper is structured as follows: Section 2 describes the theory behind our empirical study in more detail. Section 3 presents the characteristics of the database and the methodology used, whilst empirical results are analyzed in Section 4. Finally, Section 5 presents the paper’s conclusions.

2. Theoretical Background

2.1. Bank ownership and performance

Agency theory predicts that stock owned banks have more incentives to be efficient due to the costly monitoring of stock bank managers by outside stockholders, who may impose a significant penalty if bank managers do not follow the profit maximizing rule. Moreover, as the value of the mutual bank cannot be sold on the market, increasing the bank's value is not the important objective it is in stock-owned banks. Thus, managers of mutuals, not being subject to market monitoring and consequent market discipline, are hypothesized to have more flexibility in their decisions, which may be
inconsistent with profit maximization (O’Hara, 1981; Rasmunsen, 1988). The high number of depositors and their lack of information about the bank also impede depositor monitoring of mutual managers. Additionally, mutual associations should have higher expenses (both compensation and overall operating costs) than stock banks as a consequence of the fact that the mutual manager does not participate in the net worth, and extracting profitability in the form of expenses allows him to maximize his utility. Because of these higher expenses and lower market monitoring, we expect mutuals to be less profitable than stock associations.

However, the empirical evidence comparing stock-owned and mutual banks, basically in the US, is not so clear-cut. Although there are studies indicating that stock institutions are more efficient and profitable than mutual banks (Daniels and Sfiridis, 2001; Mester, 1991; O’Hara, 1981; Verbrugge and Goldstein, 1981; Verbrugge and Jahera, 1981), other papers do not show differences in efficiency (Cebenoyan et al. 1993) and there are even studies showing that mutuals are more efficient than stock-owned banks (Altunbas et al. 2001; Blair and Placone, 1988; Mester, 1993; Valnek, 1999).

The lack of market monitoring and the non-option of selling the value of the bank on the market can also be arguments applied to state-owned banks to predict lower profitability than in stock banks. However, in contrast to depositors in mutuals, political authorities may exert their influence (or even direct control of managerial decision taking) in state-owned banks. If this happens, managerial decision taking may be guided more by political interest than by the personal preferences of the managers, as is forecast for mutual institutions. Be that as it may, as neither of these interests need necessarily coincide with the desire to maximize the value of the institution, agency theory also predicts lower levels of efficiency in state-owned compared to stock-owned institutions.

As is the case with papers that compare mutual and stock banks, the smaller number of papers that analyze the effect of public ownership on banks’ efficiency have also provided conclusive results so far\(^1\). La Porta et al. (2000) use data on government ownership of banks from 92 countries around the world, finding evidence to suggest that government ownership politicizes the resource allocation process because government is able to finance inefficient but politically desirable projects. The bottom line of such a policy is a reduction in

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\(^1\) However, there is abundant evidence in the industrial sector showing that public firms are less efficient than their private counterparts. Boardman and Vining (1989) provide a summary table with the empirical evidence on the relative efficiency of public and private firms.
efficiency. Sapienza (1999) also concludes that Italian state-owned banks pursue political objectives in their lending policies. Barth et al. (2001) find in a country-level data-base that greater government ownership is associated with less efficient and less well-developed financial systems. On the other hand, Verbrugge et al. (1999) analyze bank privatizations in 25 countries and conclude that there is only limited improvement in bank profitability and operating efficiency after privatization. The common explanation given in the above papers to explain the negative effect of government ownership on bank efficiency is that it not only tends to politicize resource allocation but also isolates bank managers from market discipline. In contrast to the results of the previous studies, Altunbas et al. (2001) conclude that public savings banks have slight cost and profit advantages over their private commercial banking counterparts in the German market. In the Belgian case, Tulkens (1993) also concludes that the public bank’s branches are relatively more efficient than those of private banks.

Our paper extends the above-mentioned evidence because it compares more than two different types of bank ownership in 8 OECD-European countries and also controls for unobserved country heterogeneity using a panel data base. We use three earnings measures (net interest income, net income and profit before taxes) to analyze potential differences in performance. Additionally, we control for differences in risk, which is analyzed in the next section.

2.2. Bank ownership and risk

Bank ownership can also originate differences in bank risk exposure. It is well known that risk-taking incentives by stock-owned institutions arise from the moral hazard problem of risk shifting caused by the use of debt. Moreover, there are several reasons that explain the higher risk-taking incentives of stock banks compared to mutual banks (Esty, 1997; Rasmusen, 1988): 1) the possibility of taking advantage of changes in risk requires fixed and residual claims to be separable. However, these claims are not separable in the case of mutual banks as the depositors are also part owners of the institution. 2) mutual banks are also deterred from pursuing risky ventures by the difficulty of raising equity capital. As they cannot acquire net worth by selling stocks, their ability to absorb losses is limited and the savings bank manager will select safer investments. 3) Managers of mutual institutions have greater freedom to behave as risk-averse agents in the decision-making process, as they are not subject to market monitoring.
The lower incentives of mutual institutions to take risk compared to stock-owned institutions could be one advantage of this type of banks. Rasmussen (1988) argues that if depositors realize that mutual banks will take less risk than stock banks, more risk-averse depositors will open accounts with mutual banks. This is an advantage for mutual banks because risk-averse depositors will not incur any monitoring costs, which means a reduction in costs related to agency conflicts between owners and depositors (Valnek, 1999).

Consistent with the previous arguments, a number of empirical studies conclude that stock institutions have incentives to take greater risks than mutual associations (Verbrugge and Goldstein, 1981; O’Hara, 1981; Cordell et al. 1993; Lamm-Tennant and Starks, 1993; Esty, 1997; Schrand and Unal, 1998; Karels and McClatchey, 1999) and that greater risk taking by stock-owned institutions occurs in periods of deregulation (Saunders et al. 1990; Cebenoyan et al. 1995, 1999). Moreover, it has also been observed that mutual banks in the USA that initiated a conversion process into stock banks increased their risk following the conversion (Hadaway and Hadaway, 1984; Masulis, 1987; Cordell et al. 1993; Esty, 1997; Schrand and Unal, 1998).

However, to our knowledge there are no studies analyzing the risk-taking incentives of state-owned banks. Although the three characteristics previously mentioned for mutual banks, leading to lower risk-taking incentives compared to stock banks, can also be applied to state-owned savings banks, political interest in the decision-making process of these institutions can lead to additional differences.

On the one hand, political interest in maintaining the utilization of the bank as an instrument to achieve political objectives, as shown by La Porta et al. (2000) and Sapienza (1999), may lead to limiting bank risk so as to guarantee the continuity of the bank, i.e. the politician may have incentives to limit bank risk up to a level that guarantees its solvency so as not to lose an instrument that may be difficult to substitute. In this case, the threat of losing a political instrument would play the same role of discouraging risk in state-owned banks as the loss of high charter value does in the case of stock-owned banks in regulated environments, as was first indicated by Keeley (1990).

On the other hand, the fact that public administrations can also be major clients of state-owned banks may increase the ex-ante bank risk-taking incentives, since it allows them to substitute the losses originated by risky investments with “subsidies” (Barth et al. 2001). Furthermore, this possibility facilitates the advance in the politicization of decision taking, shown by La
Porta et al. (2000) and Sapienza (1999), and the undertaking of projects that are politically desirable but which also increase the bank’s risk.

Since political influence on savings banks’ decision taking could favor both higher and lower risk levels, its effect on bank risk-taking is an empirical question that this paper analyses.

3. The data

Time series and cross-sectional data per country derived from balance sheets and income statements of banks in OECD countries, as available from the Bank Profitability data base published by the OECD, are used in our study. Additional information about inflation and growth of each country is obtained from OECD Historical Statistics. Information about the financial development and structure of each country was obtained from the Financial Structure database compiled by Beck et al. (2001). As the information from the OECD Historical Statistics has been available since 1987, and the Financial Structure database ends in 1997, our analysis covers the 1987-1997 period.

3.1. Bank ownership types

Banks were classified into four ownership types: private commercial banks, mutual banks, state owned banks and savings banks organized as foundations. The OECD countries included in our sample are Finland, France, Germany, Italy, Norway, Spain, Sweden and Switzerland. The types of bank ownership in each country are shown in Table 1. Although there are more OECD countries with different forms of bank ownership, we could not extend the sample beyond Europe because OECD publications do not provide separate information for each type of bank ownership. For this reason, the sample only includes those OECD countries for which OECD publications provide separate information on each type of bank ownership.

Information on private commercial banks is directly provided by the Bank Profitability database. Banks in the cooperative sector in each country are considered mutual banks, as depositors are also the owners of these institutions. However, the group of savings banks for which the OECD
compiles information presents greater diversity according to their ownership types. Classifying savings banks into one of our four bank ownership types therefore requires further explanation. The German and the Spanish savings banks are classified as state-owned banks, as are the Swiss cantonal banks. The German savings banks (Sparkassen) are established under public law and are usually owned and guaranteed by their local government or by the state. The governance bodies (the General Assembly and Board of Directors) of the Spanish savings banks (cajas de ahorros) are made up of representatives of depositors, employees, founders and local and regional governments, but local and regional governments are the group with the highest ownership share. Indeed, in 50% of all Spanish savings banks, local and regional governments have more than 50% ownership. For these reasons, German and Spanish savings banks are considered as state-owned banks.

Savings banks in Finland, France, Italy, Norway and Switzerland are generally organized as foundations whose governance bodies are made up of different percentages of depositors', employees', founders' and local and regional governments' representatives. However, there is no clear dominance of one collective over others and, consequently, they are in fact a hybrid of mutual (depositors), cooperative (employees) and government-owned institutions. To avoid confounding effects we prefer to classify these savings banks as a new type of bank ownership defined under the term OTHERS, instead of including them in one of the other three depending on which of the three they could most closely be identified with. As Italian and Swedish savings banks were converted into stock-institutions in 1993 and 1991, respectively, they were not included in the OTHERS dummy variable after the conversion year.

The relative importance in each country of each type of bank ownership on the whole banking sector is illustrated in Table 2. In particular, the average percentage of the number of institutions, deposits, loans and assets of each type of bank ownership in the whole national banking system over the 1987-1997 period is shown.

All the countries included in our sample are characterized by the existence of non-stock-owned institutions with important market shares. In Norway, savings banks had 45.40% of total deposits over the 1987-1997 period. In

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2 The management report elaborated by the Institute of European Finance (1999) offers a good description of the characteristics of the savings banks sector in Europe and their evolution since their creation. Belaisch et al. (2001) also offers a good description of the banking system in Europe.
Spain, state-owned savings banks accounted for 41.84% of total deposits. In Germany, savings banks had 35.09% of total deposits compared to the 30.95% share of stock-owned banks. In France and Sweden, savings banks boasted 32.25% and 17.91%, respectively, of total deposits. In Finland, mutual banks held 21.12% of total deposits whereas in Switzerland the cantonal banks had 20.99% of total deposits over the 1987-1997 period. From 1987 to the year of conversion into stock-owned institutions (1993), savings banks in Italy had an average deposit share in the whole national banking system of 19.21%.

The different ratio of the number of institutions to the market share of different bank ownership types suggests that there are both differences in the average size of each type of organization and also differentiated markets for each type. Thus, despite the large number of mutuals in Finland (76.65%) and of savings banks in Norway (86.18%) and Sweden (85.30%), a small number of stock commercial banks enjoy the majority market shares, ranging – in the case of deposits – between 54.60% in Norway and 78.48% in Sweden. However, the same cannot be said for Switzerland, where stock-owned banks represent 52.39% of the total number of institutions in the country yet their deposits represent 12.46% of total deposits. However, cantonal banks have the highest deposit share (20.99% of total deposits) whereas they only represent 6.50% of the total number of banks in the country. Such figures are explained by the fact that mutual and other savings banks usually have a local or regional market, whereas private commercial banks compete in a national or even an international market. The existence of differentiated markets for each type of bank ownership can also originate differences in the degree of competitiveness in each market and differences in bank profitability between banks with different type of ownership.

3.2. Measuring bank profitability and risk

Net interest income (NETINTER), net income (NETINC) and profits before taxes (PROFBTAX) divided by total bank assets were used as yardsticks of bank profitability. Net interest income, or bank interest margin, is interest income minus interest expenses. This variable captures the profitability of the intermediation activity of banks. Net income is the net interest income plus the non-interest earnings minus overheads, or banks’ profit before provisions and taxes. Finally, profit before taxes is net income minus provisions.

The potential existence of differentiated markets for each type of bank ownership could lead to differences in the components of profitability amongst
the different types of banks that are not related to the efficiency of their different organizational structures. Savings banks often supply credit to local or regional areas and are more widely distributed, branch-wise, than stock banks competing in the national or international market. This fact may explain higher depreciation and staff expenses in mutual and other savings banks than in stock banks that are unrelated to the greater lack of management control attributed to mutuals and savings banks by agency theory. As net interest margins and overhead costs can be the consequence of differences not only in efficiency levels but also in the areas that banks are competing in, the analysis of profitability differences will focus on those variables that include total incomes and expenses of banks, i.e. the net income and the profit before taxes. These two measures of bank profitability also serve to control for the effect of provisions. This control is important because provisions do not only reflect the risk to the bank assets portfolio. Since they are placed at the discretion of managers, they can also be used for income smoothing. By comparing net income and profit before taxes, differences in provisioning among banks with different ownership types can be isolated.

To incorporate the effect of risk into each type of bank ownership, profit variables are also adjusted according to risk. In this case, we divide each measure of bank profitability (NETINTER, NETINC and PROFBTAX) by its respective time-series standard deviation over the 1987 to 1997 period to obtain risk-adjusted variables (STDNETINTER, STDNETINC and STDPROFBTAX).

4. **Multivariate analysis**

4.1. **Methodology**

The availability of panel-data allows correction for country-specific and time-specific effects using a random effects model. The natural alternative specification of fixed effects is not feasible in our setup, given that there is no within variation in the dummy variables of bank ownership type. Additionally, to allow the inclusion of dummy variables, which are constant across countries, the use of random-effects panel estimators is also indicated when the explanatory variables are subject to measurement error (Moulton, 1987). The random effects specification is supported by the Breusch and Pagan (1980) Lagrange multiplier test (LM test), which rejects the null hypothesis that errors are independent within countries, i.e. country effects are not
irrelevant. Thus, the random effects specification uses both within- and between-bank variations to estimate differences in bank risk, thereby allowing the importance of unobserved (time invariant) country effects to be estimated. We estimate a two-way random effects model because time dummy variables for each year are also included in order to capture any unobserved macroeconomic time effect not included in country-invariant effects.

The equations estimated to analyze the influence of bank ownership on banks profitability are as follows:

\[
PROF_{it} = \alpha + \beta \text{STATE}_{it} + \gamma \text{MUTUAL}_{it} + \delta \text{OTHERS}_{it} + \phi \text{B}_{it} + \varphi \text{M}_{it} + \theta \text{FD}_{it} + \mu + \eta_{it}
\]

where \( PROF_{it} \) is the dependent variable measuring bank profitability on a non-risk-adjusted (NETINTER, NETINC and PROFBTAX) and risk-adjusted (STDNETINTER, STDNETINC and STDPROFBTAX) basis for country \( i \) in year \( t \). \text{STATE}, \text{MUTUAL} and \text{OTHERS} are dummy variables that have a value of 1 if the banks are, respectively, state, mutual or foundation owned institutions and 0 otherwise. The dummy corresponding to stock owned banks (STOCK) is omitted from the estimations. \text{B}_{it} are bank variables for country \( i \) in year \( t \), \text{M}_{it} represents the macro variables, \text{FD}_{it} are the financial development variables, \( \mu \) is a country-specific effect and \( \eta_{it} \) is a white-noise error term.

Book value of equity (CAPITAL), total loans (LOANS), inter-bank deposits (INTERBANKDEP), cash and balance with the Central bank (CASHCENTRAL) and bank security investments (SECURITIES) are all included in \( B_{it} \) as bank variables, all of which are divided by total bank assets. Such balance-sheet variables are included to control for the potential effect on bank performance of differences in the composition of the asset portfolio among differently owned banks.

The annual growth rate of real GDP per capita (GROWTH) and the inflation rate (INFLATION) are included as macro variables (\( M_{it} \)), potentially affecting bank profitability in each country. Additionally, Demirgüç-Kunt and Huizinga (2001) have shown the greater relevance of financial development compared to the financial structure of the country in explaining bank profitability. In a sample of developed and developing countries they found that banks have both higher pre-tax profit and interest margins in underdeveloped financial systems and that once the level of financial development has been controlled for, financial structure - i.e. the relative development of banks versus markets - does not have an independent effect on their profitability or interest margin. To control for the development of the financial system we include the variables
proposed by Beck et al (2001) for measuring the volume and activity of the banking sector and the stock market. To measure the size of the banking sector in the country we use the ratio of the total domestic assets of deposit money banks divided by GDP (BANKASSET). The size of the stock market is proxied by the ratio of stock market capitalization divided by GDP (MAKTCAP). To measure activity, we use credit lent to the private sector by deposit money banks divided by GDP (PRIBC) to proxy the credit activity of the banking sector, while the total value of stocks traded divided by GDP (SMTVT) is a measure of stock market activity.

Table 3 summarizes the variables used in the paper and their source.

As the above estimations of model [1] assume exogeneity of the explanatory variables, instrumental variables are also used to control for potential biases due to endogeneity and to check the robustness of the results. We have constructed instruments for the right-hand-side balance sheet variables (CAPITAL, LOANS, INTERBANKDEP, CASHCENTRAL and SECURITIES). In particular, we use lagged values of these variables as instruments; two lags are employed to avoid cases in which there might be first-order autocorrelation of the residuals. This technique assumes that past values of the explanatory variables are not correlated with their contemporaneous values.

4.2. Descriptive statistics

The descriptive statistics of bank variables for each type of bank ownership are shown in Table 4. To analyze whether they are different to a statistically significant level among the four types of bank ownership we use both a parametric test, the F-statistic of the analysis of variance (ANOVA), and a non-parametric test (the Kruskal-Wallis test). These tests analyze whether there are significant differences between any of the pairs of banks. The significant value of both tests points to a rejection of the hypothesis that there is no difference between banks, but fails to indicate where the differences lie between the two pairs of banks. For this reason, two procedures – the Tukey and the Bonferroni tests – were applied to analyze the differences between each pair of bank ownership types. Although not shown in the paper, both test point that stock have statistically significant lower interest margins than other types of banks but they do not have statistically significant lower net incomes or lower profits before taxes either. Consequently, although
differences in the net interest margin are found between differently owned banks, these differences disappear when non-interest earnings, overhead costs and provisions are taken into account. This evolution of bank profitability varying according to bank type is consistent with two different explanations: first, it could reflect that stock banks have lower market power than the other types of bank ownership, though they are also more efficient and have lower non-interest expenses. Second, it could reflect that stock banks have lower non-interest expenses because they offer low quality services and therefore cannot attract deposits at rates that are as low as those of other bank ownership types.

Unlike non-risk adjusted profitability measures, the three measures of banks profitability vary depending on bank ownership type when they are risk adjusted. The Tukey and Bonferroni tests point to stock banks having statistically-significant lower STDNETINTER and STDPROFBTAX than mutual and state-owned banks, while there are no differences compared to the OTHERS group of savings banks. As in the non-risk adjusted measures of bank performance, the differences between types of bank ownership are lower when analyzing the risk-adjusted net income (STDNETINC), and stock banks only present statistically significant lower STDNETINC than state-owned banks; there are no statistically significant differences when we compare stock banks with mutual and others savings banks. Whatever the case may be, the existence of these statistically significant differences in risk-adjusted but not in non-risk-adjusted bank performance is consistent with lower risk-taking of mutuals and state-owned banks compared to stock banks.

\{Insert Table 4\}

Even though analysis of the mean and median differences reveals differences in the profitability of differently owned banks, a multivariate analysis incorporating confounding effects omitted in a simple comparison of means and medians still needs to be performed. To do this, the regression analysis described in equation (1) is applied in the following section so as to also incorporate the effect of country, macro and financial development variables.

### 4.3. Results

The results of two-way random effects on the influence of bank ownership on non-risk-adjusted banks profitability are shown in table 5. Table 6 shows the two-way random effects estimations with instruments for bank variables.
The positive and statistically significant coefficients of STATE, MUTUAL and OTHER in the NETINTER equations of table 5 and table 6 indicate that all these forms of bank ownership have higher interest margins than commercial stock-owned banks.

As far as efficiency levels are concerned, the impact of differences in personnel expenses and depreciation expenses as well as other non-interest expenses is analyzed using NETINC as the dependent variable. One can observe in models (3) and (4) of tables 5 and 6 that the advantage that state, mutual and foundation banks have in interest margins over commercial stock banks disappears after considering non-interest earnings and overheads costs. Even MUTUAL and OTHERS have negative, statistically significant coefficients when we use instruments for banks’ explanatory variables in table 6. This result corroborates the analysis of mean differences and indicates that although banks not organized as stock banks do have higher interest margins, they also have higher non-interest expenses and lose the initial advantage they had in lending-borrowing activities.

The lower expenses of commercial stock banks compared to state, mutual and other savings banks organized as foundations is consistent with higher levels of efficiency for stock banks and with the traditional view of agency theory arguing higher manager control by the market in stock-owned institutions. Alternatively, the lower expenses and lower interest margins of stock banks could also be the consequence of different strategy. Stock-owned banks would have lower non-interest expenses if they offer lower quality services than other types of banks (for instance, with fewer branches). In this case, they could only attract deposits at higher interest rates and their interest margin would be lower than other types of banks offering higher quality services.

By comparing the results of the NETINC and PROFBTAX equations, the effect of provisions on banks profitability is next incorporated. Table 5 shows that OTHERS has statistically significant coefficients in the PROFBTAX equations, although it has non-statistically significant coefficients in the NETINC equations. Similarly, when instrumental variables are used for banks’
variables in table 6, OTHERS and MUTUAL lose the statistically significant negative coefficients they have in NETINC equations in the PROFBTAX equations. This change in the coefficients of bank ownership dummy variables between NETINC and PROFBTAX equations can only be caused by the lower provisions of mutual and other savings banks organized as foundations, compared to stock-owned commercial banks.

To analyze if the observed differences in bank profitability among differently owned banks are explained by differences in the risk-taking behavior of each type of institution, measures of risk-adjusted bank profitability were employed as dependent variables (STDNETINTER, STDNETINC, STDPROFBTAX). Tables 7 and 8 show the results of two-way random effects estimations. Instruments for explanatory bank variables are used in table 8.

The difference observed in interest margins according to ownership type is not caused by differences in risk in the case of state or mutual banks. When banks’ net interest income is adjusted by its standard deviation over the period 1987-97 in the STDNETINTER variable, the STATE and MUTUAL dummy bank ownership variables keep their positive and statistically significant coefficients observed in tables 5 and 6. The differences in the interest margin between state and mutual banks compared to stock banks even increase in an economically significant way when we adjust for risk since the values of the coefficients of these two dummy variables increase. The lower risk-taking incentives of mutual banks are consistent with widespread empirical evidence comparing mutual and stock banks in the US\textsuperscript{3}. The lower risk-taking incentives of state-owned banks compared to stock banks is consistent with the hypothesis that politicians have incentives to limit bank risk in order to preserve bank solvency and not forego the possibility of using state banks as a political instrument.

However, savings banks organized as foundations (OTHERS) do not present different interest rate margins compared to stock-owned commercial banks when the interest margin is risk-adjusted, suggesting that the higher interest margin of this type of banks may have its origin in higher risk-taking.

\[\text{Insert Table 7}\]

\[\text{Insert Table 8}\]

Adjusting net income by its standard deviation in Tables 7 and 8 confirms the results in tables 5 and 6 for mutual and savings banks because they do not have statistically significant coefficients. Thus, whereas the mutual bank ownership dummy variable had positive, statistically significant coefficients in the STDNETINTER equations, in the STDNETINC it does not have statistically significant coefficients, indicating that the initial advantage for mutual banks in the interest margin is lost after considering other non-interest expenses, overhead costs and the standard deviation of the net income. Unlike mutuals, state-owned banks maintain the initial advantage they had in the risk-adjusted net interest income equations. This differs from the non-significant, negative coefficient of STATE in non-risk-adjusted bank profitability equations, indicating that the risk-taking incentives for state banks are even lower than in mutual institutions when we compare both types of bank ownership with commercial stock banks.

Next, when profit before taxes is adjusted by its standard deviation, positive and statistically significant coefficients for STATE and MUTUAL dummy variables are obtained. Whereas there are no differences in risk-adjusted net income between commercial stock banks and mutuals we do observe a statistically significant lower risk-adjusted profit before taxes for commercial stock banks. As the difference between STDNETINC and STDPROFBTAX is only caused by provisions, the positive coefficients of MUTUAL in the STDPROFBTAX indicate that this type of bank uses provisions for reducing the variability of their pre-tax profits more than stock banks do4.

The influence of bank ownership dummy variables on the different measures of bank profitability is independent of whether we include activity (PRIBC and SMTVT) or size variables (BANKASSET and MAKCAP) for measuring the financial development of the country.

On the subject of bank variables, the percentage of interbank deposits over total bank assets (INTERBANK) has a positive influence on non-risk-adjusted bank profitability, while the effect on risk-adjusted profitability is negative. The proportion of cash and balance with the Central Bank (CASHCENTRAL) over total assets has either a positive or non-statistically significant influence both in non-risk-adjusted and risk-adjusted bank profitability variables. These results are independent of whether we use instruments for explanatory bank variables or not.

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4 Ma (1988) and Wahlen (1994) find that the U.S. banks use provisions for income smoothing while Barth et al. (1990) also find that U.S banks use capital gains and losses of securities transactions for income smoothing.
The proportion of security banks’ investments over total assets (SECURITIES) has a positive influence on non-risk-adjusted bank profitability, whereas we observe in tables 7 and 8 a non-significant and, in one case, a negative influence of SECURITIES on risk-adjusted profitability. These different results are consistent with the higher mean variance of security investments compared with other bank investments. Banks’ capital has positive, statistically significant coefficients both in non-risk-adjusted and risk-adjusted bank profitability. This positive influence of CAPITAL is consistent with the evidence of Demirgüç-Kunt and Huizinga (2001) and may indicate that well-capitalized banks face lower expected bankruptcy costs for themselves and their customers, thereby reducing their cost of capital.

LOANS, like SECURITIES, have a positive influence on non-risk-adjusted profitability while having a negative or non-significant influence on risk-adjusted profitability.

The macro variables (GROWTH and INFLATION) are positive and statistically significant in non-risk and risk-adjusted estimations, although the coefficients are less statistically significant when we use instruments (tables 6 and 8). These results indicate that banks have greater profitability in inflationary and growing environments, and are consistent with the findings of Demirgüç-Kunt and Huizinga (2001) in a sample of banks from developed and developing countries.

As for financial system variables, we observe that bank development measures, whether relating to activity or size (PRIBC and BANKASSET), have negative coefficients in the net interest income equations and positive ones in the net income equations. This may suggest that banks in better-developed banking markets face tougher competition, and therefore lower interest margins, but are more efficient and are able to reduce their overhead costs to obtain higher net incomes than banks in countries with less-developed banking markets.

SMTVT and MAKTCAP have non-significant or positive, significant coefficients both in non-risk and risk-adjusted profitability measures whether or not instruments for explanatory banks variables are applied. This result is also consistent with Demirgüç and Huizinga (2001) and suggests that in countries with well-developed stock markets, banks have greater profit opportunities both before and after controlling for risk.
5. Conclusions

This paper analyzes the influence of bank ownership on non-risk and risk-adjusted bank profitability in 8 OECD countries using country-level panel data from 1987 to 1997. Four types of bank ownership are separated out: stock-owned banks, state-owned banks, mutual banks and savings banks organized as foundations.

The results show the relevance of bank ownership to explaining differences in profitability and risk among banks. State and mutual banks have a higher interest margin than commercial stock banks that are not explained by differences in risk. When risk is controlled for, these differences are economically more significant, indicating the lower risk-taking incentives of mutual and state-owned banks. Savings banks organized as foundations also have higher interest margins than stock banks before controlling for risk but not after controlling for risk.

However, the higher net interest income of mutual and state-owned banks compared to stock banks disappears when we compare net income among these types of institutions. This change indicates that mutual and state banks have higher non-interest expenses than stock banks, before and after controlling for risk. However, when we adjust the net income by risk, state banks maintain their initial advantage as far as interest margins are concerned. Thus, although state banks also have higher overheads and other non-interest expenses than stock banks, they have the lowest risk-taking incentives and present a higher risk-adjusted net income than stock banks. Analyzing profit before taxes also shows that mutual and state banks have lower provisions than stock banks, which is consistent with their lower risk-taking, and that mutual banks use provisions for income smoothing and for reducing the standard deviation of their profit before taxes.

6. References


Barth, J.R., G. Caprio Jr. and R. Levine, 2001, Banking systems around the
globe: do regulations and ownership affect performance and stability?, in
Frederic S. Mishkin, Editor: Prudential supervision: What works and what
doesn’t, University of Chicago Press.

database, in Financial Structure and Economic Growth, edited by Demirgüc-

Belaisch, A., L. Kodres, J. Levy and A. Ubide, 2001. Euro-area banking at the
crossroads. IMF working paper.

Blair, D. and D. Placone, 1988. Expense preference behavior, agency cost, and

Boardman, A. and A. Vining, 1989. Ownership and performance in
competitive environments: a comparison of the performance of private, mixed

Cebenoyan, A.S., E.S. Cooperman and S. Hudgins, 1993. The relative
efficiency of stock versus mutual savings and loans: a stochastic cost frontier

Cebenoyan, A.S., E.S. Cooperman and CH. A. Register, 1995. Deregulation,
reregulation, equity ownership and S&L risk-taking. Financial management
24, 63-76.

Cebenoyan, A.S., E.S. Cooperman and CH.A. Register, 1999. Ownership
structure, charter value and risk-taking behavior for thrifts. Financial
Management 28, 43-60-

Cordell, L.R., G.D. Macdonald and M.E. Wohar, 1993. Corporate ownership

Daniels, K.N. and J.M. Sfiridis, 2001. The relative cost efficiency of stock
versus mutual thrifts: does organizational form matter?. Paper presented at
2001 FMA Annual Meeting, Toronto.


Demsetz, H. and K.Lehn, 1985. The structure of corporate ownership: causes

Esty, B.C., 1997. Organizational form and risk taking in the savings and loan


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<th>Country</th>
<th>Stock Commercial banks</th>
<th>Mutual savings banks</th>
<th>State banks</th>
<th>Other Forms (Foundations)</th>
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<tbody>
<tr>
<td>Finland</td>
<td>Stock Commercial banks</td>
<td>Cooperative banks</td>
<td></td>
<td>Savings banks</td>
</tr>
<tr>
<td>France</td>
<td>Stock Commercial banks</td>
<td>Cooperative banks</td>
<td></td>
<td>Savings banks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Credit agricole,</td>
<td>(Casses</td>
<td>(Cassas D'Epargne et</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Banques populaires.</td>
<td>D'Epargne et</td>
<td></td>
</tr>
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<td></td>
<td></td>
<td>Credit mutuel, Credit</td>
<td>prévoyance)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>cooperative)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>Stock Commercial banks</td>
<td>Cooperative banks</td>
<td>Savings</td>
<td>Savings banks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Kreditgnossenschaft</td>
<td>banks (Sparkassen)</td>
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<td>en, Volksbanken,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Raffisenbanken)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>Stock Commercial banks</td>
<td></td>
<td></td>
<td>Savings* banks</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(Cassas di risparmio)</td>
</tr>
<tr>
<td>Norway</td>
<td>Stock Commercial banks</td>
<td></td>
<td></td>
<td>Savings banks</td>
</tr>
<tr>
<td>Spain</td>
<td>Stock Commercial banks</td>
<td>Cooperative banks</td>
<td>Savings</td>
<td>Savings banks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Cajas rurales)</td>
<td>banks (Cajas</td>
<td>de ahorros)</td>
</tr>
<tr>
<td>Sweden</td>
<td>Stock Commercial banks</td>
<td>Cooperative banks**</td>
<td></td>
<td>Savings banks</td>
</tr>
<tr>
<td>Switzerland</td>
<td>Stock Commercial banks</td>
<td>Cooperative banks</td>
<td>Cantonal</td>
<td>Savings banks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Raiffeisenkassen)</td>
<td>banks</td>
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</tr>
</tbody>
</table>

*Until 1993, after which they were converted into stock institutions
** Until 1991, after which they were converted into stock institutions
Table 2  
Structure of national bank systems

This table shows the percentage of institutions, deposits, loans and assets for each type of bank ownership in the whole national banking system over the 1987-1997 period for each country included in our sample.

<table>
<thead>
<tr>
<th></th>
<th>STOCK</th>
<th>MUTUAL</th>
<th>STATE</th>
<th>OTHERS (Foundations)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Finland</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of banks</td>
<td>2.16</td>
<td>76.65</td>
<td>20.17</td>
<td></td>
</tr>
<tr>
<td>Deposits</td>
<td>64.70</td>
<td>21.12</td>
<td>12.52</td>
<td></td>
</tr>
<tr>
<td>Loans</td>
<td>66.80</td>
<td>20.15</td>
<td>11.73</td>
<td></td>
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<tr>
<td>Assets</td>
<td>68.66</td>
<td>16.03</td>
<td>11.91</td>
<td></td>
</tr>
<tr>
<td><strong>France</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of banks</td>
<td>24.60</td>
<td>9.21</td>
<td>4.94</td>
<td></td>
</tr>
<tr>
<td>Deposits</td>
<td>46.99</td>
<td>32.25</td>
<td>18.69</td>
<td></td>
</tr>
<tr>
<td>Loans</td>
<td>47.95</td>
<td>21.19</td>
<td>4.51</td>
<td></td>
</tr>
<tr>
<td>Assets</td>
<td>54.74</td>
<td>21.27</td>
<td>6.30</td>
<td></td>
</tr>
<tr>
<td><strong>Germany</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of banks</td>
<td>7.13</td>
<td>76.28</td>
<td>16.14</td>
<td></td>
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<tr>
<td>Deposits</td>
<td>30.95</td>
<td>22.06</td>
<td>35.09</td>
<td></td>
</tr>
<tr>
<td>Loans</td>
<td>35.18</td>
<td>15.38</td>
<td>27.49</td>
<td></td>
</tr>
<tr>
<td>Assets</td>
<td>33.23</td>
<td>14.35</td>
<td>24.81</td>
<td></td>
</tr>
<tr>
<td><strong>Italy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of banks</td>
<td>51.51</td>
<td>21.32*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deposits</td>
<td>50.79</td>
<td>19.21*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loans</td>
<td>47.95</td>
<td>14.94*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assets</td>
<td>57.43</td>
<td>19.19*</td>
<td></td>
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<tr>
<td><strong>Norway</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of banks</td>
<td>13.82</td>
<td>86.18</td>
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<tr>
<td>Deposits</td>
<td>54.60</td>
<td>45.40</td>
<td></td>
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<tr>
<td>Loans</td>
<td>58.40</td>
<td>41.60</td>
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<tr>
<td>Assets</td>
<td>60.83</td>
<td>39.17</td>
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<td><strong>Spain</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td># of banks</td>
<td>48.62</td>
<td>32.60</td>
<td>18.77</td>
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<tr>
<td>Deposits</td>
<td>54.16</td>
<td>3.99</td>
<td>41.84</td>
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<tr>
<td>Loans</td>
<td>61.61</td>
<td>3.32</td>
<td>35.05</td>
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<tr>
<td>Assets</td>
<td>62.70</td>
<td>3.08</td>
<td>34.22</td>
<td></td>
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<td><strong>Sweden</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of banks</td>
<td>10.58</td>
<td>4.12**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deposits</td>
<td>78.48</td>
<td>3.61**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loans</td>
<td>82.28</td>
<td>2.53**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assets</td>
<td>86.57</td>
<td>1.92**</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Switzerland</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of banks</td>
<td>52.39</td>
<td>0.38</td>
<td>6.50</td>
<td></td>
</tr>
<tr>
<td>Deposits</td>
<td>12.46</td>
<td>4.54</td>
<td>20.99</td>
<td></td>
</tr>
<tr>
<td>Loans</td>
<td>10.72</td>
<td>4.83</td>
<td>26.18</td>
<td></td>
</tr>
<tr>
<td>Assets</td>
<td>15.28</td>
<td>3.41</td>
<td>20.12</td>
<td></td>
</tr>
</tbody>
</table>

* Until 1993, after which they were converted into stock institutions  
** Until 1991, after which they were converted into stock institutions
Table 3
The variables
This table describes the variables collected for the 10 OECD countries included in the sample. We present the description and the sources from which each variable is collected.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
</tr>
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<tbody>
<tr>
<td><strong>Bank Ownership types</strong></td>
<td></td>
</tr>
<tr>
<td>STOCK</td>
<td>Dummy variable that takes 1 if the bank is a stock owned institution and 0 otherwise</td>
</tr>
<tr>
<td>STATE</td>
<td>Dummy variable that takes 1 if the bank is a state owned institution and 0 otherwise</td>
</tr>
<tr>
<td>MUTUAL</td>
<td>Dummy variable that takes 1 if the bank is a mutual institution and 0 otherwise</td>
</tr>
<tr>
<td>OTHERS</td>
<td>Dummy variable that takes 1 if the bank is organized as a foundation where depositors, employees, local and regional governments and founders can participate in the ownership and 0 otherwise</td>
</tr>
<tr>
<td><strong>Bank Characteristics</strong></td>
<td></td>
</tr>
<tr>
<td>NETINTER</td>
<td>Interest income minus interest expense over total assets</td>
</tr>
<tr>
<td>NETINC</td>
<td>Gross income (net interest income plus non-interest earnings) minus operating expenses over total assets</td>
</tr>
<tr>
<td>PROFIBTAX</td>
<td>Profit before taxes over total assets</td>
</tr>
<tr>
<td>STDNETINTER</td>
<td>NETINTER in each year is divided by its standard deviation over the 1987-1997 period</td>
</tr>
<tr>
<td>STDNETINC</td>
<td>NETINC in each year is divided by its standard deviation over the 1987-1997 period</td>
</tr>
<tr>
<td>STDPROFIBTAX</td>
<td>PROFIBTAX in each year is divided by its standard deviation over the 1987-1997 period</td>
</tr>
<tr>
<td>CAPITAL</td>
<td>Book value of equity over total assets</td>
</tr>
<tr>
<td>LOANS</td>
<td>Total loans over total assets</td>
</tr>
<tr>
<td>INTERBANKDEP</td>
<td>Interbank deposits over total assets</td>
</tr>
<tr>
<td>CASHCENTRAL</td>
<td>Cash and balance with Central Bank over total assets</td>
</tr>
<tr>
<td>SECURITIES</td>
<td>Security banks investments over total assets</td>
</tr>
<tr>
<td><strong>Macro Indicators</strong></td>
<td></td>
</tr>
<tr>
<td>GROWTH</td>
<td>Annual growth rate of real GDP per capita in the country</td>
</tr>
<tr>
<td>INFLATION</td>
<td>The annual inflation from consumer price indices in the country</td>
</tr>
<tr>
<td><strong>Financial Development</strong></td>
<td></td>
</tr>
<tr>
<td>BANKASSET</td>
<td>Total assets of deposit money banks divided by GDP.</td>
</tr>
<tr>
<td>PRIBC</td>
<td>Private credit by deposit money banks to GDP</td>
</tr>
<tr>
<td>MAKTCAP</td>
<td>Stock market capitalization to GDP</td>
</tr>
<tr>
<td>SMTVT</td>
<td>Stock market total value traded to GDP</td>
</tr>
</tbody>
</table>
## Table 4

**Descriptive statistics**

This table shows the descriptive statistics of bank variables for each type of bank ownership. To analyze if there are statistically significant differences among bank ownership forms we use a parametric test, the F-statistic of the analysis of variance (ANOVA), and a non-parametric test (Kruskal-Wallis).

<table>
<thead>
<tr>
<th></th>
<th>STOCK</th>
<th>MUTUAL</th>
<th>STATE</th>
<th>OTHERS</th>
<th>F-Statistic (ANOVA)</th>
<th>Kruskal-Wallis Test</th>
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</thead>
<tbody>
<tr>
<td><strong>NETINTER</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>2.274</td>
<td>3.023</td>
<td>2.658</td>
<td>2.872</td>
<td>5.769***</td>
<td>13.223***</td>
</tr>
<tr>
<td>Median</td>
<td>2.180</td>
<td>2.990</td>
<td>2.910</td>
<td>3.195</td>
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<td></td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>0.805</td>
<td>1.384</td>
<td>1.116</td>
<td>1.304</td>
<td></td>
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</tr>
<tr>
<td><strong>NETINC</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>1.131</td>
<td>0.973</td>
<td>1.263</td>
<td>1.009</td>
<td>0.610</td>
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</tr>
<tr>
<td>Median</td>
<td>1.159</td>
<td>0.960</td>
<td>1.220</td>
<td>1.090</td>
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</tr>
<tr>
<td>Std. Dev.</td>
<td>1.054</td>
<td>0.779</td>
<td>0.373</td>
<td>1.631</td>
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</tr>
<tr>
<td><strong>PROFBTAX</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>0.563</td>
<td>0.599</td>
<td>0.681</td>
<td>0.638</td>
<td>0.118</td>
<td>1.609</td>
</tr>
<tr>
<td>Median</td>
<td>0.620</td>
<td>0.410</td>
<td>0.760</td>
<td>0.410</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>0.987</td>
<td>0.681</td>
<td>0.321</td>
<td>1.618</td>
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</tr>
<tr>
<td><strong>STDNETINTER</strong></td>
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</tr>
<tr>
<td>Median</td>
<td>7.907</td>
<td>9.872</td>
<td>10.595</td>
<td>8.599</td>
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<tr>
<td>Std. Dev.</td>
<td>3.853</td>
<td>7.489</td>
<td>5.105</td>
<td>7.242</td>
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</tr>
<tr>
<td><strong>STDNETINC</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>3.936</td>
<td>5.433</td>
<td>7.431</td>
<td>3.803</td>
<td>10.122***</td>
<td>32.204***</td>
</tr>
<tr>
<td>Median</td>
<td>3.442</td>
<td>7.451</td>
<td>8.492</td>
<td>2.816</td>
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</tr>
<tr>
<td>Std. Dev.</td>
<td>3.310</td>
<td>3.796</td>
<td>2.647</td>
<td>3.867</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>STDPROFBTAX</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>2.316</td>
<td>5.992</td>
<td>6.239</td>
<td>2.209</td>
<td>37.38***</td>
<td>72.593***</td>
</tr>
<tr>
<td>Median</td>
<td>1.631</td>
<td>7.793</td>
<td>6.243</td>
<td>1.962</td>
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</tr>
<tr>
<td>Std. Dev.</td>
<td>2.515</td>
<td>3.844</td>
<td>1.375</td>
<td>2.019</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CAPITAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>6.372</td>
<td>5.794</td>
<td>5.476</td>
<td>6.431</td>
<td>1.354</td>
<td>7.266*</td>
</tr>
<tr>
<td>Median</td>
<td>5.660</td>
<td>4.520</td>
<td>4.170</td>
<td>6.010</td>
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</tr>
<tr>
<td>Std. Dev.</td>
<td>2.521</td>
<td>3.210</td>
<td>2.007</td>
<td>2.870</td>
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<td><strong>LOANS</strong></td>
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<td>51.215</td>
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<td>61.708</td>
<td>60.424</td>
<td>6.149***</td>
<td>20.277***</td>
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<tr>
<td>Median</td>
<td>51.030</td>
<td>60.280</td>
<td>61.280</td>
<td>68.360</td>
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</tr>
<tr>
<td>Std. Dev.</td>
<td>12.502</td>
<td>15.923</td>
<td>13.867</td>
<td>22.076</td>
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</tr>
<tr>
<td><strong>INTERBANKDEP</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Mean</td>
<td>16.459</td>
<td>19.780</td>
<td>10.722</td>
<td>15.188</td>
<td>2.872**</td>
<td>24.904***</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>12.289</td>
<td>13.446</td>
<td>2.481</td>
<td>20.743</td>
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<tr>
<td><strong>CASHCENTRAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Mean</td>
<td>2.691</td>
<td>3.240</td>
<td>3.718</td>
<td>2.657</td>
<td>1.273</td>
<td>5.951</td>
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<tr>
<td>Median</td>
<td>1.880</td>
<td>2.250</td>
<td>2.840</td>
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<tr>
<td>Std. Dev.</td>
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<td>3.428</td>
<td>3.433</td>
<td>3.018</td>
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<tr>
<td><strong>SECURITIES</strong></td>
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</tr>
<tr>
<td>Mean</td>
<td>17.451</td>
<td>10.489</td>
<td>18.058</td>
<td>13.123</td>
<td>15.013***</td>
<td>34.566***</td>
</tr>
<tr>
<td>Median</td>
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<td>8.410</td>
<td>21.440</td>
<td>12.030</td>
<td></td>
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<tr>
<td>Std. Dev.</td>
<td>5.968</td>
<td>7.370</td>
<td>8.389</td>
<td>7.068</td>
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</table>

*** Significant at 1 % level    ** Significant at 5 % level  *Significant at 10% level
Table 5
Ownership form and non-risk-adjusted banks profitability

This table shows the results of a two-way random effects model. The dependent variables are the net interest income (NETINTER), the net income (NETINC) and the profit before taxes (PROFBTAX) of banks. As independent variables we include dummies of bank ownership types (STATE, MUTUAL, OTHERS) and banks, macro and country financial development variables. Banks variables are the proportion of interbank deposits (INTERBANKDEP), the ratio of cash and balance with Central banks (CASHCENTRAL), the ratio of securities (SECURITIES), the capital ratio (CAPITAL), the proportion of LOANS. All these bank variables are divided by the total bank assets in the country. The annual growth rate of real GDP per capita (GROWTH) and the annual inflation for consumer prices indices (INFLATION) are the macro variables. The private credit by deposit money banks to GDP (PRIBC) and the stock market total value traded to GDP (SMTVT) are included to measure the activity of the banking sector and the stock market respectively. Finally, total assets of deposit money bank assets to GDP (BANKASSET) and the stock market capitalization (MAKCAP) are introduced to measure the size of the banking sector and the stock market respectively in the country. Finally, the standard errors are corrected for autocorrelation, and the corresponding t-statistics are given in parentheses below.

<table>
<thead>
<tr>
<th>NETINTER</th>
<th>NETINC</th>
<th>PROFBTAX</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STATE</strong></td>
<td>0.598***</td>
<td>0.603***</td>
</tr>
<tr>
<td></td>
<td>(3.12)</td>
<td>(3.27)</td>
</tr>
<tr>
<td><strong>MUTUAL</strong></td>
<td>1.053***</td>
<td>1.047***</td>
</tr>
<tr>
<td></td>
<td>(6.72)</td>
<td>(6.39)</td>
</tr>
<tr>
<td><strong>OTHERS</strong></td>
<td>0.641***</td>
<td>0.597***</td>
</tr>
<tr>
<td></td>
<td>(4.31)</td>
<td>(3.81)</td>
</tr>
<tr>
<td><strong>INTERBANKDEP</strong></td>
<td>0.013***</td>
<td>0.012*</td>
</tr>
<tr>
<td></td>
<td>(2.05)</td>
<td>(1.74)</td>
</tr>
<tr>
<td><strong>CASHCENTRAL</strong></td>
<td>0.059***</td>
<td>0.072***</td>
</tr>
<tr>
<td></td>
<td>(2.88)</td>
<td>(3.51)</td>
</tr>
<tr>
<td><strong>SECURITIES</strong></td>
<td>0.040***</td>
<td>0.050***</td>
</tr>
<tr>
<td></td>
<td>(5.90)</td>
<td>(5.79)</td>
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<tr>
<td><strong>CAPITAL</strong></td>
<td>0.130***</td>
<td>0.139***</td>
</tr>
<tr>
<td></td>
<td>(7.60)</td>
<td>(7.32)</td>
</tr>
<tr>
<td><strong>LOANS</strong></td>
<td>0.025***</td>
<td>0.021***</td>
</tr>
<tr>
<td></td>
<td>(4.04)</td>
<td>(3.33)</td>
</tr>
<tr>
<td><strong>GROWTH</strong></td>
<td>0.054***</td>
<td>0.047**</td>
</tr>
<tr>
<td></td>
<td>(2.76)</td>
<td>(2.49)</td>
</tr>
<tr>
<td><strong>INFLATION</strong></td>
<td>0.050***</td>
<td>0.064***</td>
</tr>
<tr>
<td></td>
<td>(2.30)</td>
<td>(3.07)</td>
</tr>
<tr>
<td><strong>PRIBC</strong></td>
<td>-1.370***</td>
<td>-0.682*</td>
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<tr>
<td></td>
<td>(-5.87)</td>
<td>(1.77)</td>
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<tr>
<td><strong>SMTVT</strong></td>
<td>-0.297</td>
<td>0.737*</td>
</tr>
<tr>
<td></td>
<td>(1.37)</td>
<td>(1.67)</td>
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</table>

<table>
<thead>
<tr>
<th>NETINTER</th>
<th>NETINC</th>
<th>PROFBTAX</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BANKASSET</strong></td>
<td>-1.118***</td>
<td>0.959***</td>
</tr>
<tr>
<td></td>
<td>(-5.25)</td>
<td>(3.51)</td>
</tr>
<tr>
<td><strong>MAKTCAP</strong></td>
<td>0.023</td>
<td>-0.099</td>
</tr>
<tr>
<td></td>
<td>(0.1)</td>
<td>(-0.30)</td>
</tr>
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</table>

R² overall 82.52% 78.89% 39.32% 40.31% 35.73% 34.80%
Wald χ² 477.32*** 406.30*** 124.40*** 140.47*** 106.75*** 111.04***
LM χ² 158.07*** 152.42*** 58.25*** 45.88*** 2.21 5.09**
# observations 215 231 215 231 215 231
# countries 8 8 8 8 8 8

*** Significant at 1% level  ** Significant at 5% level  *Significant at 10% level
Table 6
Ownership form and non-risk adjusted bank profitability (Instrumental variables)

This table shows the results of a two-way random effects model with instruments for banks' variables. The dependent variables are the net interest income (NETINTER), the net income (NETINC) and the profit before taxes (PROFBTAX) of banks. As independent variables we include dummies of bank ownership types (STATE, MUTUAL, OTHERS) and banks, macro and country financial development variables. Banks variables are the proportion of interbank deposits (INTERBANKDEP), the ratio of cash and balance with Central banks (CASHCENTRAL), the ratio of securities (SECURITIES), the capital ratio (CAPITAL), the proportion of LOANS. All these bank variables are divided by the total bank assets in the country. We use as instruments two lags of each one of these bank variables. The annual growth rate of real GDP per capita (GROWTH) and the annual inflation for consumer prices indices (INFLATION) are the macro variables. The private credit by deposit money banks to GDP (PRIBC) and the stock market total value traded to GDP (SMTVT) are included to measure the activity of the banking sector and the stock market respectively. Finally, Total assets of deposit money bank assets to GDP (BANKASSET) and the stock market capitalization (MAKCAP) are introduced to measure the size of the banking sector and the stock market respectively in the country. Finally, the standard errors are corrected for autocorrelation, and the corresponding t-statistics are given in parentheses below.

<table>
<thead>
<tr>
<th></th>
<th>NETINTER</th>
<th>NETINC</th>
<th>PROFBTAX</th>
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<td>STATE</td>
<td>0.707***</td>
<td>0.711***</td>
<td>0.005</td>
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<td>(3.22)</td>
<td>(3.16)</td>
<td>(0.02)</td>
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<td>MUTUAL</td>
<td>0.891***</td>
<td>0.878***</td>
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<td>(4.81)</td>
<td>(4.70)</td>
<td>(-2.21)</td>
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<td>OTHERS</td>
<td>0.463***</td>
<td>0.419**</td>
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<tr>
<td></td>
<td>(2.63)</td>
<td>(2.36)</td>
<td>(-2.08)</td>
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<tr>
<td>INTERBANKDEP</td>
<td>0.014*</td>
<td>0.014*</td>
<td>0.063***</td>
</tr>
<tr>
<td></td>
<td>(1.81)</td>
<td>(1.81)</td>
<td>(5.20)</td>
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<td>0.081***</td>
<td>0.097***</td>
<td>0.118**</td>
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<td>(3.25)</td>
<td>(4.08)</td>
<td>(2.49)</td>
</tr>
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<td>0.025***</td>
<td>0.027***</td>
<td>0.045***</td>
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<tr>
<td></td>
<td>(2.67)</td>
<td>(2.83)</td>
<td>(2.94)</td>
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<td>0.147***</td>
<td>0.152***</td>
<td>0.177***</td>
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<tr>
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<td>(7.28)</td>
<td>(7.55)</td>
<td>(5.49)</td>
</tr>
<tr>
<td>LOANS</td>
<td>0.018**</td>
<td>0.017**</td>
<td>0.054***</td>
</tr>
<tr>
<td></td>
<td>(2.52)</td>
<td>(2.27)</td>
<td>(4.71)</td>
</tr>
<tr>
<td>GROWTH</td>
<td>-0.011</td>
<td>-0.005**</td>
<td>0.111**</td>
</tr>
<tr>
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<td>(-0.47)</td>
<td>(-0.26)</td>
<td>(2.34)</td>
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<tr>
<td>INFLATION</td>
<td>0.035</td>
<td>0.054**</td>
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<tr>
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<td>(1.50)</td>
<td>(2.48)</td>
<td>(1.64)</td>
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<td>(-5.68)</td>
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<td>(-0.55)</td>
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<tr>
<td>SMTVT</td>
<td>0.188</td>
<td>0.666</td>
<td>0.803*</td>
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<td>(0.82)</td>
<td>(1.51)</td>
<td>(1.88)</td>
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<td>BANKASSET</td>
<td>-1.183***</td>
<td>0.469*</td>
<td>0.081</td>
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<td>(-5.08)</td>
<td>(1.73)</td>
<td>(0.31)</td>
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<td>MAKTCAP</td>
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<td>0.021</td>
<td>0.423</td>
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<td>(-0.03)</td>
<td>(0.07)</td>
<td>(1.38)</td>
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<tr>
<td>R² overall</td>
<td>80.55%</td>
<td>76.635</td>
<td>44.61%</td>
</tr>
<tr>
<td>Wald χ²</td>
<td>340.23***</td>
<td>306.78***</td>
<td>147.38***</td>
</tr>
<tr>
<td>LM χ²</td>
<td>115.53***</td>
<td>107.98***</td>
<td>40.34***</td>
</tr>
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<td>206</td>
<td>222</td>
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<td># countries</td>
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</table>

*** Significant at 1 % level   ** Significant at 5 % level  *Significant at 10% level
Table 7
Ownership form and risk-adjusted banks profitability

This table shows the results of a two-way random effects model. The dependent variables are the net interest income (STDNETINTER), the net income (STDNETINC) and the profit before taxes (STDPROFBTAX) of banks, adjusted by the standard deviation of each profitability measure over the 1987-1997 period. As independent variables we include dummies of bank ownership types (STATE, MUTUAL, OTHERS) and banks, macro and country financial development variables. Banks variables are the proportion of interbank deposits (INTERBANKDEP), the ratio of cash and balance with Central banks (CASHCENTRAL), the ratio of securities (SECURITIES), the capital ratio (CAPITAL), the proportion of LOANS. All these banks variables are divided by the total bank assets in the country. The annual growth rate of real GDP per capita (GROWTH) and the annual inflation for consumer prices indices (INFLATION) are the macro variables. The private credit by deposit money banks to GDP (PRIBC) and the stock market total value traded to GDP (SMTVT) are included to measure the activity of the banking sector and the stock market respectively. Finally, Total assets of deposit money bank assets to GDP (BANKASSET) and the stock market capitalization (MAKTCAP) are introduced to measure the size of the banking sector and the stock market respectively in the country. Finally, the standard errors are corrected for autocorrelation, and the corresponding t-statistics are given in parentheses below.

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<th>STDPROFBTAX</th>
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<td>(2)</td>
<td>(3)</td>
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<tr>
<td>STATE</td>
<td>5.265**</td>
<td>4.603**</td>
<td>3.887***</td>
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<td>(2.10)</td>
<td>(1.96)</td>
<td>(3.19)</td>
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<td>3.558*</td>
<td>3.318*</td>
<td>1.488</td>
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<td>(1.79)</td>
<td>(1.78)</td>
<td>(1.54)</td>
</tr>
<tr>
<td>OTHERS</td>
<td>2.405</td>
<td>2.178</td>
<td>0.578</td>
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<td>(1.21)</td>
<td>(1.17)</td>
<td>(0.61)</td>
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<td>-0.038*</td>
<td>-0.051**</td>
<td>-0.019</td>
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<td>(-1.84)</td>
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<td>(-0.82)</td>
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<td>(1.62)</td>
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<td>CAPITAL</td>
<td>0.126**</td>
<td>0.098*</td>
<td>0.295***</td>
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<td>(2.27)</td>
<td>(1.72)</td>
<td>(4.69)</td>
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<td>LOANS</td>
<td>0.011</td>
<td>0.004</td>
<td>-0.050**</td>
</tr>
<tr>
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<td>(0.53)</td>
<td>(0.19)</td>
<td>(-2.27)</td>
</tr>
<tr>
<td>GROWTH</td>
<td>0.142***</td>
<td>0.135***</td>
<td>0.192***</td>
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<tr>
<td></td>
<td>(2.65)</td>
<td>(2.78)</td>
<td>(3.31)</td>
</tr>
<tr>
<td>INFLATION</td>
<td>0.091*</td>
<td>0.143***</td>
<td>0.077</td>
</tr>
<tr>
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<td>(1.67)</td>
<td>(2.78)</td>
<td>(1.90)</td>
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<td>-2.802****</td>
<td>1.719</td>
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<td>(-2.19)</td>
<td>(1.63)</td>
<td>(0.51)</td>
</tr>
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<td>SMTVT</td>
<td>0.579</td>
<td>0.135</td>
<td>0.959*</td>
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<td>(1.09)</td>
<td>(0.21)</td>
<td>(1.71)</td>
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<td>-1.418</td>
<td>2.202**</td>
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<td>(-1.31)</td>
<td>(2.38)</td>
<td>(0.29)</td>
</tr>
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<td>MAKTCAP</td>
<td>2.292***</td>
<td>0.882</td>
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<tr>
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<td>(3.14)</td>
<td>(1.14)</td>
<td>(-0.38)</td>
</tr>
</tbody>
</table>

R² overall: 20.81% 28.17% 34.86% 36.05% 39.98% 35.72%

Wald $\chi^2$: 128.58*** 120.37*** 73.36*** 81.51*** 75.33*** 64.75***

LM $\chi^2$: 599.31*** 624.66*** 594.36*** 471.72*** 492.87*** 537.11***

# observations: 215 231 215 231 215 231

# countries: 8 8 8 8 8 8

*** Significant at 1 % level  ** Significant at 5 % level  *Significant at 10% level
Table 8  
Ownership form and risk-adjusted banks profitability (Instrumental variables)

This table shows the results of a two-way random effects model with instruments for banks’ variables. The dependent variables are the net interest income (STDNETINTER), the net income (STDNETINC) and the profit before taxes (STDPROFBTAX) of banks, adjusted by the standard deviation of each profitability measure over the 1987-1997 period. As independent variables we include dummies of bank ownership types (STATE, MUTUAL, OTHERS) and banks, macro and country financial development variables. Banks variables are the proportion of interbank deposits (INTERBANKDEP), the ratio of cash and balance with Central banks (CASHCENTRAL), the ratio of securities (SECURITIES), the capital ratio (CAPITAL), the proportion of LOANS. All these banks variables are divided by the total bank assets in the country. We use as instruments two lags of each one of these banks’ variables. The annual growth rate of real GDP per capita (GROWTH) and the annual inflation for consumer prices indices (INFLATION) are the macro variables. The private credit by deposit money banks to GDP (PRIBC) and the stock market total value traded to GDP (SMTVT) are included to measure the activity of the banking sector and the stock market respectively. Finally, total assets of deposit money bank assets to GDP (BANKASSET) and the stock market capitalization (MAKTCAP) are introduced to measure the size of the banking sector and the stock market respectively in the country. Finally, the standard errors are corrected for autocorrelation, and the corresponding t-statistics are given in parentheses below.

<table>
<thead>
<tr>
<th></th>
<th>STDNETINTER</th>
<th>STDNETINC</th>
<th>STDPROFBTAX</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>STATE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.821**</td>
<td>4.871*</td>
<td>3.728***</td>
</tr>
<tr>
<td></td>
<td>(2.14)</td>
<td>(1.83)</td>
<td>(2.57)</td>
</tr>
<tr>
<td>MUTUAL</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>3.676*</td>
<td>3.227</td>
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</tr>
<tr>
<td></td>
<td>(1.70)</td>
<td>(1.53)</td>
<td>(0.80)</td>
</tr>
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<td>2.147</td>
<td>0.048</td>
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<td></td>
<td>(1.13)</td>
<td>(1.02)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>INTERBANKDEP</td>
<td>-0.046*</td>
<td>-0.0485*</td>
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</tr>
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<td>(-1.86)</td>
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<tr>
<td>CASHCENTRAL</td>
<td>0.027</td>
<td>0.083</td>
<td>0.142**</td>
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<tr>
<td></td>
<td>(0.47)</td>
<td>(1.52)</td>
<td>(2.08)</td>
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<td>SECURITIES</td>
<td>-0.016</td>
<td>-0.027</td>
<td>-0.036</td>
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<tr>
<td></td>
<td>(-0.62)</td>
<td>(-1.05)</td>
<td>(-1.27)</td>
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<tr>
<td>CAPITAL</td>
<td>0.219***</td>
<td>0.212***</td>
<td>0.206***</td>
</tr>
<tr>
<td></td>
<td>(3.76)</td>
<td>(3.62)</td>
<td>(3.16)</td>
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<tr>
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<td>-0.034</td>
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<tr>
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<td>(-1.76)</td>
<td>(-1.54)</td>
<td>(0.00)</td>
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<tr>
<td>GROWTH</td>
<td>0.089</td>
<td>0.091*</td>
<td>0.081</td>
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<tr>
<td></td>
<td>(1.58)</td>
<td>(1.82)</td>
<td>(1.29)</td>
</tr>
<tr>
<td>INFLATION</td>
<td>0.080</td>
<td>0.123**</td>
<td>0.095</td>
</tr>
<tr>
<td></td>
<td>(1.46)</td>
<td>(2.36)</td>
<td>(1.49)</td>
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<tr>
<td>PRIBC</td>
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<td>0.198</td>
<td>-0.091</td>
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<td>(-1.84)</td>
<td>(0.18)</td>
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<tr>
<td>SMTVT</td>
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<td>0.341</td>
<td>0.882</td>
</tr>
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<td></td>
<td>(0.70)</td>
<td>(0.55)</td>
<td></td>
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<tr>
<td>BANKASSET</td>
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<td>(-0.34)</td>
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<td>(0.83)</td>
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<tr>
<td>MAKTCAP</td>
<td>1.753**</td>
<td></td>
<td>1.110</td>
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<td></td>
<td>(2.39)</td>
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<td>(1.43)</td>
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<td>R² overall</td>
<td>16.02%</td>
<td>12.26%</td>
<td>25.17%</td>
</tr>
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<td>Wald $\chi^2$</td>
<td>123.70***</td>
<td>117.49***</td>
<td>62.45***</td>
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<td>507.33***</td>
<td>508.00</td>
<td>457.92***</td>
</tr>
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<td># countries</td>
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</table>

*** Significant at 1 % level  ** Significant at 5 % level  *Significant at 10% level