Do equity investments affect banks' profitability?. Evidence from OECD countries.

Francisco González*
University of Oviedo

Abstract

This paper analyzes the influence of equity investments on banks' profitability in a panel data of 24 OECD countries. The results suggest a positive influence of banks' equity investments on banks' interest rate margin and banks' net income that is not outweighed by additional requirements of provisions and capital that supervisory authorities establish to control bank risk. The positive effect equity investments have on banks' interest margin is consistent with the banks' ability as shareholders to obtain benefits in the lending relationship they also keep with firms.

Keywords: equity investments, bank profitability, regulation, banking and commerce, panel data.

JEL Classification: G21, G24, G28.

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Abstract

This paper analyzes the influence of equity investments on banks' profitability in a panel data of 24 OECD countries. The results suggest a positive influence of banks' equity investments on banks' interest rate margin and banks' net income that is not outweighed by additional requirements of provisions and capital that supervisory authorities establish to control bank risk. The positive effect equity investments have on banks' interest margin is consistent with the banks' ability as shareholders to obtain benefits in the lending relationship they also keep with firms.

Introduction

One of the subjects arousing great interest and debate in financial system design is the degree of separation that should exist between banking and commerce (Saunders, 1994). The main benefits indicated for the affiliation between banking and commerce include reducing the conflicts of interests and information asymmetries between the shareholders of the borrowing firm and their debtholders. Offsetting these benefits, defenders of separating banking and commerce argue that enabling banks to hold shares in borrowing firms would increase the instability of the banking system upon increasing the level of bank risk. Bank's risk-shifting incentives caused by deposit insurance, when the insurance premium does not reflect a bank's risk, have long been recognized[1]. The rise of banking risk when equity investments are allowed obliges authorities to monitor banks and increases the supervision costs and the probability of bank runs.

Following the scheme of benefits and costs associated with the affiliation between banking and commerce, the previous literature contains basically theoretical models focused on analyzing the socially optimal equity stake as a trade-off between the increase in the risk of the bank's asset portfolio and the increase in efficiency of the firm's investments upon lowering the conflict between debtholders and shareholders (Boyd et al., 1998; John *et al.*, 1994; Park, 2000).

At the same time, the different point of view that national regulators hold about the importance of costs and benefits has hindered an international coordination of national regulations dealing with the affiliation between banking and commerce. However, there are some common patterns between countries on the regulations about banks' ownership of non-financial firms. These regulations usually limit a bank's investment in the equity of a firm to a certain percentage of the bank's capital and/or impose a limit on a bank's investment in the equity of a firm to a certain percentage of either the firm's capital or its voting rights. For example, bank equity investments may not exceed 45 % of bank's capital in Belgium or Italy, 60% in Finland, France, Germany, Greece, Portugal or Spain, the 25% in Czech Republic or Poland. Examples of the limits in the percentage of firm's capital owned by a bank are 50% in Norway, 25% in Portugal, 10% in Canada and Finland, and 5% in Belgium, Japan, the Netherlands, and Sweden. Germany, Spain and

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[1] See Kareken and Wallace (1978), Merton (1977,1978) and Dothan and Williams (1980).

Switzerland are examples of countries where banks are not subject to this latter type of regulation. As a result, banks in these countries can be the sole owner of non-financial firms. On the other hand, in the US banking and commerce have been traditionally separated since the Glass Steagall Act of 1933 which meant that equity investments can only be made by bank holding companies provided that they do not represent more than 5% of a firm's voting shares. Recently, the Gramm-Leach-Bliley Financial Services Modernization Act of 1999 has loosened restrictions on bank ownership of equity in non-financial firms, although the law carefully maintains the separation of banking and commerce by limiting the time that banks may hold such equity stakes and the amount of such holding relative to the bank's capital[2].

Despite the differences in legal limits on bank equity investments, countries have two basic mechanisms to keep the additional risk derived from equity investments under control, no matter what the maximum legal limit of them is. These two basic mechanisms are provisions and the capital adjusted-risk ratio. Regulators impose fund provisioning on banks to compensate future capital loss. Moreover, the adoption of the capital adjusted-risk ratio for most of the countries after 1993 following the 1987 Basle Accord on Capital Standards[3] also represents a continuous mechanism of keeping the effect of equity investments on bank risk under control. As equity investments are considered risky investments, banks with greater equity investments are required to have a higher capital.

Although theoretical literature has agreed that the affiliation between banking and commerce has consequences for both the bank-owned firm and the owner bank, most of the empirical literature has focused on analyzing the consequences for the efficiency of borrowing firms. However, the ability of the owner bank to extract a firm's surplus or transferring funds from the firm forces us to complete the analysis of the effect on the firm's profitability with that of the effect on bank's profitability in order to evaluate all of the consequences of the affiliation between banking and commerce[4]. However,

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[2] See Pecchioli (1987), Schuijer (1992) or Barth et al. (2002) for a description of the regulations on the association between banking and commerce in several countries. A historical perspective on changes in the US system is given in Berger *et al.* (1995).

[3] An example of the wide establishment of the minimum required capital-to-asset ratio according to the Basle guidelines is the fact that a hundred out of the one hundred and seven countries analyzed by Barth et al. (2001b) have adopted it.

[4] In spite of agreement of the theoretical works on forecasting an improvement on the firm's efficiency with the bank shareholding, the available evidence is not conclusive.

only very recently Barth et al. (2001a, 2002) have analyzed in a sample of 60 and 107 countries respectively, the effects that different national regulations on the ability of banks to own and control nonfinancial firms have both on financial sector performance and banking system stability in these countries. Using country-level data they do not find beneficial effects from restricting the mixing of banking and commerce. Despite not finding a reliable relationship between the restrictions on mixing banking and commerce and the level of the banking sector development, they conclude that those countries that restrict banks from owning nonfinancial firms have a much higher probability of suffering a major banking crisis.

In this paper, we provide additional empirical evidence analyzing the influence of the bank's investments in the equity of firms on banks interest rate margin and on banks net income using a country-level panel data of 24 OECD countries. In contrast to Barth et al. (2001a, 2002), we use the real ratio of banks equity investments to total banks assets in each country instead of an index, ranging from 1 to 4, of the national restrictions on the ability of banks to own and control nonfinancial firms. We also take into account the unobserved country heterogeneity using a panel database from 1987 to 1997. In the regressions we also control for other banks balance-sheet variables, macro variables and variables of the banking and financial market development in the country.

Even after considering banks provisions and capital requirements we find a positive influence of banks' equity investments on banks' profitability. This result suggests that the control of bank risk which is carried out by the authorities under provision and bank's capital regulations does not outweigh the higher returns obtained from investments in the equity of nonfinancial firms. The positive influence of bank equity investments in banks interest rate margin also suggests that bank shareholding allows the bank to take advantage of its lending relationship with the firm. In fact, this is the main benefit of the bank equity investment because we do not observe differences

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Although there are works carried out in Japan, Germany and Spain, the results are contradictory even within those done in the same country. Among the works which find evidence of a positive effect of bank shareholding on the firm's efficiency we have Kim (1991), Hoshi et al. (1991) and Pushner (1995) all in Japan, Cable (1985) and Gorton and Schmidt (2000) in Germany in the 1970s and Zoido (1998) in Spain. Nevertheless, the positive relationship between bank shareholding and the firm's efficiency is neither observed by Weinstein and Yafeh (1998) in Japan, nor by Gorton and Schmidt (2000) in Germany in the 1980s nor by Bergés and Sánchez del Villar (1991) in Spain.

in banks' profitability caused by capital gains or losses derived from equity transactions.

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

1. Theoretical Background

The financial literature does not predict a clear effect of equity investments on bank's profitability. First, the portfolio theory suggests that since investment in equity is riskier than investment in debt, those banks increasing the proportion of their investments in equity securities can expect their portfolio to bring higher profits and with it higher risk. The mere reference to the high variance of return on equity investment has been taken as evidence of its incremental effect upon the bank's portfolio. Based on this idea, regulators from certain countries justify the regulation that separates banking from commerce as a tool to reduce the instability in the banking system and the probability of a banking crisis. However, economists have long recognized that the introduction of any assets into the allowable investment set may improve the portfolio's risk-return efficiency. As long as the new asset is less than perfectly positively correlated with the existing portfolio components, its addition may prove mean-variance improving (Langohr and Santomero, 1985).

Apart from a simple substitution of debt for more risky assets in the bank's asset portfolio, the presence of a bank in the ownership of the borrowing firm can modify the firm's investment decision and give rise to additional increases on the expected return and bank's risk on the originally suggested by portfolio theory. Park (2000) takes into account the agency conflicts which take place between the bank, the firm and the regulator in order to prove that the bank's ownership of a commercial firm may also increase the bank's profitability and risk. The consequence of an improvement in the firm's investment efficiency once the problems of under-investment and over-investment in the firm have been reduced would be an increase in the bank's profitability. The consequence of a higher bank's incentive to allow the firm to undertake risky projects would mean an increase in the bank's risk. The participation in the surplus expected from risky projects can change the initial position that a

bank would have to avoid funds transfers when it is an only a firm's creditor (Smith and Warner, 1979). Since the firm is allowed to undertake riskier projects, both the equity and debt of the firm may become riskier and consequently the bank's asset portfolio, too.

On the other hand, Boyd et al. (1998) also suggest an additional reason for a positive influence of equity investments on bank's profitability based on the idea that bank equity positions on nonfinancial firms strengthen the bank's ability to extract surplus from borrowers[5]. Thus, owner banks can also increase their profitability not only by the higher expected returns of riskier investments but also by the fact that a larger portion of the surplus generated by externally financed investments accrues to banks, and less accrues to the originating investor. Although, Boyd et al. (1998) agree with Park (2000) when pointing out the positive influence of equity investments on bank's profitability, they do not agree on the consequences on the firm's efficiency. In Boyd et al.'s (1998) model, nonbanking shareholders have fewer incentives to strive for due to the funds' expropriation carried out by the shareholder bank and the consequence is a reduction of the firm's efficiency.

Contrary to the previous arguments, Santos (1999) states that bank equity investments do not increase bank's profitability and risk. His view is that by limiting the bank's ability to use equity, the regulator forces the bank to use more debt in order to channel the necessary funds into the firm. This outweighs the effects of the reduction of the bank's stakes in the firm's capital and, in some cases, it might even create the negative effect of increasing the bank's risk of failure because he assumes that debt is the bank's preferred financial instrument to encourage the firm to increase the risk of its investment projects. This effect is more significant when firms depend largely on banks to raise external funds or on bank oriented systems, and when the regulation limits banks' equity investments to a certain percentage of the firm's capital. Therefore, Santos (1999) suggests that there is no relationship between bank's equity positions in commercial firms and the bank's profitability because the bank outweighs any difference in the equity investment in order to reach the bank's mean-variance target by means of the lending decision.

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[5] The bank's ability to obtain surplus from firms when the bank only has a lending relationship with the firm has also been analyzed by Rajan (1992) and Von Thadden (1995).

Nevertheless, all the previous predictions about bank's profitability and risk do not take into account the supervisory activity developed by authorities to control bank risk. Thus, differences in risk-return bank portfolios caused by differences in the level of equity investments before considering supervisory activity could disappear after this is considered. In this sense, two of the main mechanisms of bank's supervision are the minimum requirements of bank's capital and provisions. On the one hand, the highest risk of the asset portfolio in banks with a greater proportion of their assets invested in equity of nonfinancial firms could be compensated for by a higher percentage of capital entailed by the risk-adjusted bank's capital requirement. The higher cost of equity compared to cost of debt for banks will have negative consequences for bank's profitability that can outweigh the higher expected returns of equity investments. On the other hand, similar to capital regulation, if banks with higher equity investments are obliged to supply higher provisions, they may lose after provisions the expected higher profitability that equity investments originate before provisions. Therefore, the differences in banks' profitability before considering provisions and capital requirements could disappear after considering the effect of both types of legal requirements.

Using provisions and capital requirements as variables to control the risk of bank asset portfolio implicitly involves using the risk measure developed by the national supervisor when fixing the minimum levels for provisions and capital. If we assume that national supervisory authorities have more information about banks than any other outside investor, measuring risk in this way would be better than using risk measures defined on the basis of the banks' account statements.

The different hypotheses discussed in this section do not clearly suggest which effect of equity investments made by banks should prevail. Hence, we shall not formulate a hypothesis on a prevailing effect. Instead, we examine the data to ascertain which effect prevails. We have estimated the relationship in OECD countries between the proportion of total bank's asset invested in equity of nonfinancial firms and banks' net interest income and banks' net income. We have also taken into account the consequences of equity investments on banks' risk adopting the method of risk measurement used by supervisory authorities. Thus, we have included in the regressions as independent variables the two basic instruments that authorities use to control bank's risk: provisions and capital ratios. Additionally, we have also included control variables related to the financial development of the country, macro variables and other banks variables.

2. The data

We have used time series and cross-country data derived from balance sheets and income statements of commercial banks in OECD countries, as available from the Bank Profitability database published by the OECD. Although some OECD countries have state-owned and cooperative banks we have only considered commercial banks in each country to avoid confusing effects from the type of bank ownership. Initially, the data set covers all OECD countries (29) from 1987 to 1997. Together with the information obtained from banks' financial statements we have obtained additional information about the level of inflation and growth of each country from the 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). Table 1 summarizes the variables used in this paper and their source.

〈Insert Table 1〉

The final study was carried out in 24 OECD countries since information on banks' equity investments (EQUINV) for Canada, the Czech Republic, Poland, the UK and the US was not available. As information on the variables used was not available in each country for all years from 1987 to 1997 we have an unbalanced panel.

We have used net interest income (NETINTER) and banks' net income (NETINC) to total bank assets as measures of banks' profitability. Net interest income or banks' interest margin is the interest income minus interest expense over total assets and it captures the profitability of the intermediation activity of banks. Its potential relationship with banks' equity investments will show whether banks use their shareholder's position to increase their benefits on the lending relationship through higher interest margins

Net income is net interest income plus non-interest earnings minus overhead cost and provides a measure of bank profits before provisions and taxes. As the capital gains or losses and dividends of firms' shares are included in the net income but not in the net interest income, the relationship between banks'

equity investments and banks' net income would depict not only the effect on the banks' lending relationship but also on the direct yields (capital gains or losses, dividends) that banks get from the investment in the firm's equity. When comparing both estimations we can separate both effects.

In order to analyze whether the bank's risk control mechanisms designed by the regulators (provisioning and bank capital requirements) decrease the differences that equity investments could cause in bank's profitability we include the provisions (PROVIS) and bank capital ratios (CAPITAL) in the regressions. We include total bank provisions (provisions on loans and securities) instead of only provisions on securities because the potential effects of the banks equity investments on the lending relationship that banks also keep with the firms can also produce some influence on provisions for loans. Moreover, separate information of provisions for loans and securities is not available for most of the countries, which prevents us from including both variables independently of each other in regressions.

Following Demirgüc-Kunt and Huizinga (2001) we also include other bank characteristics that along with equity investment could give rise to differences in bank's profitability, such as LOANS, non-interest earnings (NONINTER) and banks overhead cost (OVERHEADC). Total banks' assets divide all these previous banks' variables in each year.

We include the annual growth rate of real GDP per capita (GROWTH) and the inflation rate (INFLATION) since they are macro variables potentially affecting banks' profitability in each country. Additionally, Demirgüc-Kunt and Huizinga (2001) have shown the relevance of financial development over the financial structure of the country in order to explain the banks' profitability. In a sample of developed and developing countries they found that banks have both higher profits and interest margins in underdeveloped financial systems and once they control for the level of financial development, financial structure, i.e. the relative development of banks versus markets, does not have an independent effect on their profitability or interest margins. To control 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 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 the stock market capitalization divided by GDP (MAKTCAP). To measure activity, we use the credit 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 of the stock market activity.

To measure national regulatory restrictions we use the index of restrictions on banks owning non-financial firms elaborated by Barth et al. (2001b) (RESTRICT). This index ranges from 1 to 4 with a higher value indicating higher restrictions in the ability of banks to own and control non-financial firms. The grading scale of the index is the following:

(1) Unrestricted- a bank may own 100% of the equity in any non-financial firm.

(2) Permitted- a bank may own 100% of the equity in a non-financial firm, but ownership is limited based on bank's equity capital.

(3) Restricted- a bank can only acquire less than 100% of the equity in a non-financial firm.

(4) Prohibited- a bank may not acquire any equity investment in a non-financial firm.

In our sample there is no country where banks are not allowed to acquire equity in non-financial firms, which is why the index in OECD countries ranges from 1 to 3.

Table 2 provides the list of countries included in this study and the mean values of the country-level variables used in the empirical work.

〈Insert Table 2〉

The correlations matrix of variables used in the empirical analysis is shown in Table 3. Focusing on the correlations of EQUINV we observe that it is positively correlated with the two variables of banks profitability (NETINTER and NETINC). EQUINV and LOANS correlate negatively, which is consistent with the fact that equity and debt securities are alternative investments, and therefore the higher the equity investment, the lower the proportion of bank total assets invested in loans. Moreover, as the equity investments are riskier than other assets, banks with higher equity investments (and lower loans)

also have higher provisions and higher capital requirements. Thus, EQUINV is positively correlated with PROVIS and CAPITAL.

Macro variables also correlate with EQUINV. The annual growth rate of real GDP per capita has a positive correlation coefficient while the annual inflation has a negative one. Regarding financial development variables, EQUINV correlates negatively with the size of the stock market (MAKTCAP) but positively with their activity level (SMTVT).

However, there is no correlation between the index of restrictions on banks owning non-financial firms elaborated by Barth et al. (2001) and the percentage of equity investments undertaken by banks to total bank assets in each country. The absence of correlation between these two variables indicates that regulatory restrictions on banking and commerce affiliation are not binding and that other variables are the main determinants of the equity investment activity of banks in each country. In this case, using the real values of banks' equity investments can be more suitable than using an index of the range of legal restrictions in each country when we aim to analyze the consequences on banks' profitability due to the affiliation between banking and commerce.

�⟨Insert Table 3⟩

3. **Multivariate analysis**

3.1.   Methodology

The availability of a panel data enables us to correct country-specific and time-specific effects. The Breusch and Pagan (1980) Lagrange multiplier test (LM test) rejects the null hypothesis that errors are independent within countries, i.e., the country effects are relevant and OLS estimations would be biased. The country effect can be fixed or at random. It is clear that the fixed effects model is a particular case of the random effects model when the variable representing the country effects is non-stochastic. However, as pointed out by Hsiao (1986), when the individual effects are correlated with the regressors, the random effects' model produces biased estimations of coefficients. In such cases, considering these effects as fixed leads to the same

11

results as when such a correlation is explicitly included in the model. In this case, we use the Hausman χ^2 to test the null hypothesis that the random and fixed effects models are not significantly different. In all the estimations the Hausman's test rejects the null hypothesis and only the results obtained with the fixed effects GLS estimation are reported. We estimate a two-way fixed effect model because we also include time dummy variables for each year to capture any unobserved macroeconomic time effect not included in the regression that is country invariant.

The equations estimated to analyze the influence of banks' equity investments on banks' profitability are as follows[6]:

$$IN_{it} = \alpha + \beta\, B_{it} + \gamma\, M_{it} + \delta\, FD_{it} + \mu_i + \eta_{it} \qquad\qquad [1]$$

where IN_{it} is the dependent variable (either NETINTER or NETINC) for country i in year t, B_{it} are banks variables for country i in year t, M_{it} represents the macro variables, FD_{it} are the financial development variables, μ_i is a country-specific effect and η_{it} is a white-noise error term.

As the above estimations assume exogeneity of the explanatory variables, we also use instrument variables models to control for potential biases due to endogeneity and to check the robustness of the results. We construct instruments for the balance sheet and income statement variables of the right-hand-side. In particular, we use lagged values of these variables as instruments. We work with two lags 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 the contemporaneous values of the explanatory variables.

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[6] Demirgüç-Kunt and Huizinga (2001) use a similar specification to analyze the impact of financial development and financial structure on bank profits and margins in a sample of banks from developed and underdeveloped countries. However, they do not consider the influence of bank equity investments and they do not control for country-specific and time-specific effects as they use mean values for each variable over the sample period or between estimations. However, we take advantage of our panel database to control for unobserved country heterogeneity using within estimations.

3.2.   Results

The results of two-way fixed effects or within estimations on the influence of equity investments on the net interest income are shown in table 4. Table 5 shows the two-way fixed effects estimations with instruments for banks' variables.

EQUINV has a positive and statistically significant coefficient in all the models. This result is consistent with banks' usage of their shareholder position to increase their interest margins and to obtain benefits in the lending relationships they also keep with firms. This positive influence of equity investments on banks' net interest income remains after controlling for the provisions and capital ratios required by the national supervisory authorities to control bank risk. Thus, the positive effect of bank equity investments on net interest income is not outweighed by the additional requirements (provisions and capital ratios) that supervisors establish to control the potential higher risk of bank equity investments. Moreover, this positive influence is obtained both in the within (table 4) as in instrumental variables (table 5) estimations.

The coefficients of PROVIS are positive and statistically significant in all specifications. CAPITAL also has positive coefficients in the within estimations while it does not have statistically significant coefficients in the instrumental variable models. The positive coefficients of PROVIS and CAPITAL may indicate that higher net interest incomes are associated with riskier investment portfolios that also oblige banks to have higher capital ratios and provisions. Nevertheless, as has just been shown, the positive coefficient of EQUINV remains statistically significant after including PROVIS and CAPITAL in the regressions.

The percentage of loans on total bank assets does not appear to have a statistically significant effect on banks interest margin. Non-interest earnings are negatively related to net interest incomes in all estimations suggesting a possible substitution effect between these two types of bank incomes. However, the overhead cost variable has positive coefficients in the fixed effect estimations. This effect is consistent with the results obtained by Demirgüc-Kunt and Huizinga (2001) for a sample of countries with developed and underdeveloped financial systems indicating that banks can pass on these costs to their customers. However, when we use instrumental variables in Table 5 to correct potential problems of endogeneity, the negative effect does

not remain and we do not obtain significant coefficients for OVERHEADC. The macro variables (GROWTH and INFLATION) are positive and statistically significant indicating that banks have greater interest margins in inflationary and growing environments.

Unlike Demirgüc-Kunt and Huizinga (2001), the financial development variables used as a control are not statically significant in any specification. Although not reported in the paper, we have included the variables measuring the size and the activity of the banking sector and the stock market simultaneously. We have also included alternative variables of financial development such as the stock market turnover ratio. Nevertheless, the results did not change. This non-significant effect of financial development variables in OECD countries, contrary to the results obtained by Demirgück-kunt and Huizinga (2001) for a sample of developed and undeveloped countries, may be the result of the higher similarity of financial development among OECD countries.

〈Insert Table 4〉

〈Insert Table 5〉

In addition to the effect on banks' interest margin we also look at the effect of equity investments on bank's profitability when analyzing banks' net income. As this bank profitability variable includes net interest income and the non-interest earnings we are also capturing other effects of equity investments additional to those in the lending relationship. The results of these estimations are shown in tables 6 and 7. Results are basically analogous to those shown in tables 4 and 5.

〈Insert Table 6〉

〈Insert Table 7〉

14

EQUINV has positive coefficients in all specifications suggesting that the positive influence of equity investments on banks interest margin remains when we include the capital gains or losses of equity investments and other non-interest earnings in the measure of bank profitability analyzed. CAPITAL and PROVIS also keep their positive coefficients in the within estimations whereas PROVIS does not have statistically significant coefficients when we use two lags as instruments of banks' variables. Thus, equity investments have a positive effect on overall bank profitability after taking into account the requirements that supervisory authorities impose to control the additional bank risk that can derive from higher bank equity investments.

Non-interest earning variable, NONINTER, has positive coefficients consistent with its contribution to bank profits. Likewise, as overhead costs are expenses included in the bank net income, they have a negative influence. Macro variables (GROWTH and INFLATION) have the same positive influence shown in tables 4 and 5, and the variables of the development of the financial system do not have statistically significant coefficients as in the net interest income regressions.

Although not shown in the paper we have also tested additional specifications to check the robustness of the results. Thus, we have also analyzed the effect of equity investments on banks' profit before taxes. In this case, the higher provisions for which a higher percentage of equity investments are needed have been directly deduced from the dependent variable and PROVIS has not been included as an independent variable. We also use dependent variables adjusted by risk. The net interest income and the net income in each year are divided, respectively, by the standard deviation of NETINTER and NETINC over the 1987-1997 period. The results did not change and EQUINV shows positive and statistically significant coefficients in all these specifications.

4. Conclusions

This paper uses a panel country-data of 24 OECD countries in order to analyze the influence of equity investments on banks' profitability. The results show that bank equity investments have a positive effect on net interest

income and on net income. This positive influence remains the same after controlling for the potential increase of bank risk that higher equity investments can originate. Thus, the highest profitability that portfolio theory suggests for banks with higher equity investments does not disappear after considering the highest provisions and capital ratios that these banks are obliged to keep.

The positive influence on net interest income is consistent with the view that banks can use their shareholder position in non-financial firms to obtain benefits in the lending relationship that they usually keep with firms in which they also take equity. In fact, the positive influence on banks interest margin is the main benefit of the bank equity investments because we do not observe differences in banks' profitability caused by capital losses or gains derived from equity transactions.

The bank's ability to take advantage of the benefits that bank shareholding can have on the firm's efficiency also prevents empirical works which only analyze the effect on the firm's performance from being a complete measure of the consequences on business efficiency that the theoretical literature has suggested for the affiliation between banking and commerce.

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Table 1
The variables

This table describes the variables collected for the 29 OECD countries. We present the description and the sources from which each variable is collected.

Variable	Definition
Banks Characteristics	
EQUINV	Banks equity investments over total banks' assets. Bank Profitability (2000), OECD Publications.
NETINTER	Interest income minus interest expense over total assets. Bank Profitability (2000), OECD Publications.
NETINC	Gross income (net interest income plus non-interest earnings) minus operating expenses over total assets. Bank Profitability (2000), OECD Publications.
PROVIS	Provisions over total assets. Bank Profitability (2000), OECD Publications.
CAPITAL	Book value of equity over total assets. Bank Profitability (2000), OECD Publications.
LOANS	Total loans over total assets. Bank Profitability (2000), OECD Publications.
OVERHEADC	Personnel expenses and some other non-interest expenses over total assets
NONINTER	Net profit or loss on financial operations, net fees and commissions and other non-interest earnings over total assets. Bank Profitability (2000), OECD Publications.
Macro Indicators	
GROWTH	Annual growth rate of real GDP per capita. OECD Historical Statistics (2001), OECD Publications.
INFLATION	The annual inflation from consumer price indices. OECD Historical Statistics (2001), OECD Publications.
Financial Development	
BANKASSET	Total assets of deposit money banks divided by GDP. Beck et al. (2001): Financial structure database.
PRIBC	Private credit by deposit money banks to GDP. Beck et al. (2001): Financial structure database.
MAKTCAP	Stock market capitalization to GDP. Beck et al. (2001): Financial structure database.
SMTVT	Stock market total value traded to GDP. Beck et al. (2001): Financial structure database.
RESTRICT	Index of country restrictions on banks owning nonfinancial firms constructed by Barth et al. (2001). This index ranges from 1 to 4 with a higher value of the index indicating higher restrictions in the ability of banks to own and control nonfinancial firms.

Table 2
Bank country-level characteristics

This table shows the mean values of the country-level variables used in the empirical work over the 1987-1997 period.

	EQUINV	NETINTER	NETINC	PROVIS	CAPITAL	LOANS	NONINTER	OVERHEADC
Australia	3.925	2.556	1.501	0.466	9.087	57.399	1.804	2.858
Austria	3,025	1.747	0.867	0.480	4.523	50.087	0.866	1.744
Belgium	1,089	1.430	0.626	0.285	3.031	33.655	0.493	1.298
Canada	N.A	2.696	1.53	0.556	5.181	70.862	1.341	2.508
Czech Republic	N.A	2.868	0.97	1.447	10.187	47.150	10.273	12.178
Denmark	3.597	2.901	1.493	1.230	7.341	43.516	0.889	2.297
Finland	2.37	1.881	0.050	0.175	5.875	58.732	1.807	3.636
France	3.013	1.364	0.719	0.428	3.972	38.497	0.769	1.414
Germany	2.744	2.045	0.972	0.393	3.882	54.868	0.612	1.683
Greece	4.195	1.934	1.596	0.478	4.853	29.970	2.305	2.643
Hungary	3.512	4.808	0.303	-0.312	8.973	41.112	-0.673	3.832
Iceland	2.237	4.449	1.953	1.383	7.485	72.505	2.169	4.663
Ireland	0.447	2.390	1.525	0.135	6.270	54.330	1.170	2.032
Italy	2.181	2.805	1.333	0.649	6.368	43.096	0.969	2.443
Japan	3.928	1.247	0.444	0.237	3.029	59.108	0.156	0.959
Korea	2.372	2.128	1.102	1.106	6.980	51.381	1.266	2.292
Luxembourg	0.577	0.841	0.756	0.345	2.959	23.719	0.386	0.472
Mexico	1.525	5.171	2.637	1.574	6.720	61.484	2.075	4.610
Netherlands	1.019	1.980	0.944	0.287	4.139	58.552	0.891	1.927
New Zealand	0.736	2.724	1.384	0.207	4.923	71.668	1.613	2.955
Norway	1.907	3.106	1.334	0.942	5.244	75.224	0.982	2.752
Poland	N.A	5.175	3.231	0.772	8.406	38.136	2.033	3.978
Portugal	2.906	2.953	1.683	0.926	9.772	42.064	0.955	2.223
Spain	3.172	3.439	1.647	0.675	8.704	44.930	0.906	2.699
Sweden	2.298	2.153	0.744	-0.064	5.761	47.581	1.363	2.773
Switzerland	2.676	1.381	1.302	0.695	6.032	56.577	1.547	1.591
Turkey	4.890	8.114	4.329	1.226	5.000	39.986	0.449	4.235
UK	N.A	2.682	1.596	0.693	4.476	57.164	1,718	2.804
United states	N.A	3.574	1.915	0.634	7.188	63.295	1.860	3.519

Table 2 (continuation)
Bank country-level characteristics
This table shows the mean values of the country-level variables used in the empirical work over the 1987-1997 period. All variables are divided by total bank assets.

	GROWTH	INFLATION	BANKASSET	PRIBC	MAKTCAP	SMTVT	RESTRICT
Australia	2.292	3.723	0.647	0.566	0.584	0.252	2
Austria	2.066	2.425	1.199	0.878	0.097	0.060	1
Belgium	2.138	2.108	0.924	0.439	0.319	0.046	3
Canada	1.492	2.723	0.577	0.509	0.527	0.226	3
Czech Republic	-0.144	14.730	0.820	0.556	0.267	0.097	3
Denmark	1.431	2.646	0.546	0.415	0.287	0.107	2
Finland	1.842	3.033	0.735	0.715	0.239	0.085	1
France	1.754	2.215	0.978	0.847	0.264	0.125	2
Germany	1.561	2.292	1.160	0.902	0.228	0.264	1
Greece	1.333	12.675	0.430	0.206	0.104	0.035	1
Hungary	2.325	20.315	0.373	0.318	0.039	0.009	N.A
Iceland	1.400	8.269	0.446	0.420	0.110	0.007	3
Ireland	5.850	2.550	0.356	0.273	0.265	0.141	1
Italy	1.754	4.438	0.706	0.507	0.153	0.060	3
Japan	2.254	1.169	1.257	1.108	0.830	0.430	3
Korea	5.854	5.730	0.519	0.493	0.303	0.348	3
Luxembourg	4.585	1.977	0.313	0.297	2.333	0.021	1
Mexico	1.139	36.169	0.199	0.157	0.201	0.088	3
Netherlands	2.361	1.977	1.019	0.811	0.565	0.325	1
New Zealand	2.108	3.769	0.626	0.552	0.461	0.105	2
Norway	2.246	3.400	0.684	0.545	0.203	0.107	2
Poland	3.533	13.425	0.353	0.071	0.028	0.029	2
Portugal	3.754	7.061	0.777	0.581	0.104	0.032	2
Spain	2.931	4.538	0.919	0.658	0.247	0.160	1
Sweden	1.408	4.000	0.534	0.446	0.530	0.236	3
Switzerland	0.700	2.300	1.667	1.553	0.859	1.030	3
Turkey	1.946	72.615	0.195	0.135	0.101	0.097	3
UK	2.161	4,146	0.963	0.931	0.964	0.468	1
United states	2.185	3.277	0.757	0.662	0.690	0.501	3

Table 3
Correlations

This table shows the correlation between the country-level variables used in the empirical work over the 1987-1997 period

	EQUINV	NETINTER	NETINC	PROVIS	CAPITAL	LOANS	OVERHEADC	NONINTER	GROWTH	INFLATION	BANKASSET	PRIBC	MAKTCAP	SMTVT
NETINTER	0.321**	____												
NETINC	0.287**	0.783**	____											
PROVIS	0.170**	0.379**	0.476**	____										
CAPITAL	0.203**	0.337**	0.295**	0.237**	____									
LOANS	-0.154**	0.068	-0.008	0.084	0.073	____								
OVERHEADC	0.210**	0.481**	0.221**	0.264**	0.436**	0.147**	____							
NONINTER	-0.052	-0.067	0.039	0.198**	0.323**	0.088	0.760**	____						
GROWTH	-0.199**	-0.024	0.113*	-0.154**	0.067	-0.137*	-0.147**	-0.065	____					
INFLATION	0.388**	0.829**	0.710**	0.263**	0.065	-0.190**	0.307**	-0.128**	-0.160**	____				
BANKASSET	0.027	-0.503**	-0.402**	-0.170**	-0.189**	0.181**	-0.342**	-0.041	-0.154**	-0.443**	____			
PRIBCIT	0.026	-0.471**	-0.379**	-0.147**	-0.164**	0.333**	-0.296**	-0.011	-0.144*	-0.428**	0.943**	____		
MAKTCAP	-0.203**	-0.306**	-0.153**	-0.116**	-0.232**	-0.132*	-0.313**	-0.066	0.155**	-0.224**	0.078	0.179**	____	
SMTVT	0.143*	-0.144*	-0.019	-0.088	-0.014	0.228**	-0.098	0.065	0.117	-0.172**	0.423**	0.519**	0.304**	____
RESTRICT	0.107	0.253**	0.218**	0.188**	0.124*	0.172**	0.223**	0.121*	-0.130*	0.246**	-0.089	-0.053	-0.091	0.155**

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

Table 4
Effect of equity investments on bank net interest income (Fixed effects)

This table shows the results of a two-way fixed effect model. The dependent variable is the banks' net interest income. As independent variables we include banks, macro and country financial development variables. Banks' variables are the proportion of equity investments (EQUINV), the capital ratio (CAPITAL), the provisions (PROVIS), the proportion of LOANS, the non-interest earnings (NONINTER) and the overhead costs (OVERHEADC). All these 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. 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 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. The standard errors are corrected for autocorrelation, and the corresponding t-statistics are given in parentheses below.

	Dependent variable: Net Interest Income (NETINTER)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
INTERCEPT	2.210***	2.040***	1.770***	1.413***	2.081***	1.931***	1.592***	1.254**
	(4.37)	(4.05)	(3.52)	(2.87)	(3.96)	(3.68)	(3.07)	(2.47)
EQUINV	0.145***	0.144***	0.114**	0.106**	0.117**	0.120***	0.087*	0.086**
	(3.10)	(3.16)	(2.49)	(2.44)	(2.50)	(2.64)	(1.92)	(2.00)
CAPITAL			0.127***	0.156***			0.137***	0.164***
			(3.62)	(4.61)			(3.93)	(4.88)
PROVIS		0.205***		0.262***		0.209***		0.265***
		(3.29)		(4.38)		(3.31)		(4.43)
LOANS	0.000	-0.003	-0.004	-0.008	0.007	0.003	0.002	-0.003
	(0.00)	(-0.37)	(-0.51)	(-1.11)	(0.75)	(0.33)	(0.25)	(-0.41)
NONINTER	-0.874***	-0.901***	-0.915***	-0.956***	-0.883***	-0.911***	-0.929***	-0.969***
	(-14.60)	(-15.28)	(-15.57)	(-16.85)	(-14.50)	(-15.21)	(-15.62)	(-16.96)
OVERHEADC	0.442***	0.511***	0.461***	0.555***	0.449***	0.518***	0.468***	0.560***
	(6.86)	(7.73)	(7.40)	(8.81)	(6.85)	(7.74)	(7.45)	(8.87)
GROWTH	0.067***	0.073***	0.065***	0.073***	0.063***	0.069***	0.061***	0.068***
	(4.15)	(4.60)	(4.19)	(4.88)	(3.70)	(4.10)	(3.75)	(4.37)
INFLATION	0.023***	0.021***	0.020**	0.017**	0.025***	0.023***	0.021***	0.017**
	(2.91)	(2.76)	(2.54)	(2.26)	(3.20)	(2.98)	(2.76)	(2.39)
BANKASSET	-0.279	-0.193	-0.237	-0.118				
	(-0.98)	(-0.70)	(-0.87)	(-0.45)				
MAKTCAP	-0.005	-0.014	-0.015	-0.027				
	(-0.06)	(-0.16)	(-0.18)	(-0.34)				
PRIBC					-0.642	-0.488	-0.536	-0.310
					(-1.51)	(-1.17)	(-1.32)	(-0.79)
SMTVT					0.295	0.278	0.309	0.291
					(1.15)	(1.12)	(1.26)	(1.25)
R^2 overall	75.23%	79.76%	76.54%	79.80%	77.96%	81.81%	78.77%	80.99%
F	24.83***	25.43***	26.02***	28.38***	24.74***	25.48***	26.42***	29.00***
LM χ^2	202.35***	83.05***	82.21***	56.37***	206.01***	85.41***	76.31***	55.13***
Hausman χ^2	182.54***	166.54***	55.45***	42.77***	49.49***	48.57***	744.73***	48.09***
# observations	200	198	200	198	198	196	198	196
# countries	24	24	24	24	24	24	24	24

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

Table 5
Effect of equity investments on bank net interest income (Fixed effects with instrumental variables)

This table shows the results of a two-way fixed effect model with instruments for banks' variables. The dependent variable is the banks' net interest income. As independent variables we include banks, macro and country financial development variables. Bank variables are the proportion of equity investments (EQUINV), the capital ratio (CAPITAL), the provisions (PROVIS), the proportion of LOANS, the non-interest earnings (NONINTER) and the overhead costs (OVERHEADC). All these 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. 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 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. The standard errors are corrected for autocorrelation, and the corresponding t-statistics are given in parentheses below.

	Dependent variable: Net Interest Income (NETINTER)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
INTERCEPT	2.398***	2.165***	2.413***	2.148***	2.595***	2.262***	2.595***	2.214**
	(3.12)	(2.83)	(3.09)	(2.75)	(3.13)	(2.72)	(3.07)	(2.60)
EQUINV	0.254***	0.220***	0.254***	0.220***	0.245***	0.209***	0.245***	0.210***
	(4.60)	(3.87)	84.57)	(3.86)	(4.42)	(3.68)	(4.40)	(3.68)
CAPITAL			-0.007	0.008			0.000	0.017
			(-0.12)	(0.13)			(0.00)	(0.27)
PROVIS		0.198**		0.200**		0.207**		0.210**
		(2.19)		(2.19)		(2.24)		(2.25)
LOANS	-0.001	0.000	-0.001	-0.000	-0.008	-0.004	-0.008	-0.005
	(-0.11)	(0.00)	(-0.08)	(-0.03)	(-0.56)	(-0.30)	(-0.55)	(-0.35)
NONINTER	-0.308***	-0.316***	-0.306***	-0.318***	-0.308***	-0.314***	-0.308***	-0.318***
	(-3.29)	(-3.41)	(-3.22)	(-3.38)	(-3.24)	(-335)	(-3.19)	(-3.34)
OVERHEADC	-0.131	-0.111	-0.130	-0.0112	-0.124	-0.102	-0.124	-0.103
	(-1.29)	(-1.10)	(-1.28)	(-1.11)	(-1.18)	(-0.99)	(-1.17)	(-0.99)
GROWTH	0.074***	0.077***	0.075***	0.076***	0.078***	0.080***	0.078***	0.077***
	(3.01)	(3.15)	(2.89)	(2.95)	(3.05)	(3.17)	(2.85)	(2.86)
INFLATION	0.043***	0.047***	0.044***	0.046***	0.046***	0.049***	0.046***	0.048***
	(3.33)	(3.60)	(3.21)	(3.41)	(3.52)	(3.79)	(3.33)	83.51)
BANKASSET	-0.274	-0.265	-0.281	-0.257				
	(-0.66)	(-0.65)	(-0.67)	(-0.62)				
MAKTCAP	-0.019	-0.004	-0.019	-0.004				
	(-0.15)	(-0.03)	(-0.15)	(-0.03)				
PRIBC					-0.142	-0.178	-0.142	-0.164
					(-0.23)	(-0.29)	(-0.23)	(-0.27)
SMTVT					-0.154	-0.040	-0.154	-0.021
					(-0.40)	(-0.10)	(-0.39)	(-0.05)
R² overall	58.18%	64.66%	58.20%	64.70%	53.65%	61.91%.	53.65%	62.06%
F	7.44***	7.48***	7.01***	7.06***	7.42***	7.48***	6.98***	7.07***
LM χ²	95.73***	51.88***	22.43***	15.39***	88.45***	52.16***	18.37***	13.70***
Hausman χ²	129.58***	54.06***	216.90***	59.63	41.58***	20.38	62.96***	36.14***
# observations	194	194	194	194	192	192	192	192
# countries	24	24	24	24	24	24	24	24

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

Table 6
Effect of equity investments on bank net income (Fixed effects)

This table shows the results of a two-way fixed effect model. The dependent variable is the banks' net income. As independent variables we include banks, macro and country financial development variables. Banks variables are the proportion of equity investments (EQUINV), the capital ratio (CAPITAL), the provisions (PROVIS), the proportion of LOANS, the non-interest earnings (NONINTER) and the overhead costs (OVERHEADC). All these 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. 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 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. The standard errors are corrected for autocorrelation, and the corresponding t-statistics are given in parentheses below.

	Dependent variable: Net Income (NETINC)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
INTERCEPT	2.242***	2.069***	1.798***	1.435***	2.067***	1.915***	1.573***	1.234**
	(4.41)	(4.09)	(3.57)	(2.90)	(3.94)	(3.66)	(3.04)	(2.43)
EQUINV	0.150***	0.149***	0.119***	0.111**	0.120**	0.123***	0.089*	0.088**
	(3.21)	(3.27)	(2.59)	(2.55)	(2.55)	(2.69)	(1.97)	(2.05)
CAPITAL			0.128***	0.158***			0.138***	0.165***
			(3.65)	(4.65)			(3.96)	(4.92)
PROVIS		0.209***		0.267***		0.210***		0.266***
		(3.34)		(4.45)		(3.33)		(4.46)
LOANS	-0.001	-0.004	-0.005	-0.009	0.007	0.003	0.002	-0.003
	(-0.10)	(-0.48)	(-0.62)	(-1.24)	(0.75)	(0.33)	(0.25)	(-0.41)
NONINTER	0.125**	0.097*	0.084	0.042	0.116*	0.088	0.070	0.029
	(2.08)	(1.65)	(1.42)	(0.74)	(1.90)	(1.47)	(1.18)	(0.52)
OVERHEADC	-0.553***	-0.482***	-0.533***	-0.438***	-0.550***	-0.481***	-0.531***	-0.439***
	(-8.55)	(-7.26)	(-8.53)	(-6.94)	(-8.39)	(-7.18)	(-8.45)	(-6.98)
GROWTH	0.066***	0.072***	0.065***	0.072***	0.064***	0.069***	0.062***	0.069***
	(4.08)	(4.54)	(4.13)	(4.82)	(3.73)	(4.13)	(3.78)	(4.41)
INFLATION	0.022***	0.020***	0.019**	0.016**	0.025***	0.023***	0.021***	0.017**
	(2.80)	(2.64)	(2.43)	(2.14)	(3.17)	(2.95)	(2.72)	(2.35)
BANKASSET	-0.286	-0.200	-0.244	-0.123				
	(-1.00)	(-0.72)	(-0.89)	(-0.47)				
MAKTCAP	-0.002	-0.011	-0.012	-0.024				
	(-0.02)	(-0.13)	(-0.14)	(-0.30)				
PRIBC					-0.638	-0.484	-0.532	-0.304
					(-1.51)	(-1.17)	(-1.31)	(-0.78)
SMTVT					0.320	0.303	0.334	0.316
					(1.25)	(1.22)	(1.36)	(1.36)
R^2 overall	12.76%	22.77%	15.69%	26.51%	20.59%	30.12%	22.58%	30.67%
F	7.32***	7.94***	8.18***	9.63***	7.51***	8.17***	8.61***	10.15***
LM χ^2	197.91***	81.68***	81.71***	56.66***	206.19***	86.02***	76.96***	55.98***
Hausman χ^2	78.08***	163.11***	55.46***	231.23***	50.46***	31.69***	1277.36***	62.51***
# observations	200	198	200	198	198	196	198	196
# countries	24	24	24	24	24	24	24	24

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

Table 7
Effect of equity investments on bank net income (Fixed effects with instrumental variables)

This table shows the results of a two-way fixed effects model with instruments for banks' variables. The dependent variable is the banks' net income. As independent variables we include banks, macro and country financial development variables. Banks variables are the proportion of equity investments (EQUINV), the capital ratio (CAPITAL), the provisions (PROVIS), the proportion of LOANS, the non-interest earnings (NONINTER) and the overhead costs (OVERHEADC). All these variables are divided by 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. 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 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. The standard errors are corrected for autocorrelation, and the corresponding t-statistics are given in parentheses below.

	Dependent variable: Net Income (NETINC)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
INTERCEPT	0.327	0.298	0.167	0.116	0.083	-0.017	-0.139	-0.283
	(0.52)	(0.47)	(0.26)	(0.18)	(0.12)	(-0.03)	(-0.21)	(-0.41)
EQUINV	0.122***	0.117**	0.125***	0.119**	0.091**	0.080*	0.096**	0.082*
	(2.71)	(2.51)	(2.80)	(2.5)	(2.03)	(1.72)	(2.15)	(1.78)
CAPITAL			0.078	0.080			0.089*	0.095*
			(1.58)	(1.62)			(1.79)	(1.90)
PROVIS		0.025		0.039		0.062		0.080
		(0.33)		(0.52)		(0.82)		(1.05)
LOANS	0.023**	0.023**	0.018*	0.019*	0.030***	0.031***	0.026**	0.027**
	(2.27)	(2.28)	(1.78)	(1.79)	(2.69)	(2.77)	(2.31)	(2.40)
NONINTER	0.067	0.066	0.049	0.047	0.081	0.079	0.060	0.056
	(0.88)	(0.87)	(0.64)	(0.61)	81.06)	(1.03)	(0.78)	(0.73)
OVERHEADC	-0.169**	-0.166**	-0.176**	-0.173**	-0.147*	-0.140*	-0.153*	-0.145*
	(-2.04)	(-2.00)	(-2.14)	(-2.09)	(-1.73)	(-1.65)	(-1.82)	(-1.72)
GROWTH	0.056***	0.056***	0.45**	0.045**	0.057***	0.058***	0.044**	0.043**
	(2.78)	(2.79)	(2.16)	(2.16)	(2.78)	82.80)	(1.99)	(1.98)
INFLATION	0.013	0.014	0.008	0.009	0.019*	0.020*	0.012	0.013
	(1.26)	(1.29)	(0.76)	(0.79)	(1.76)	81.84)	(1.13)	(1.19)
BANKASSET	-0.192	-0.191	-0.111	-0.106				
	(-0.57)	(-0.56)	(-0.33)	(-0.31)				
MAKTCAP	-0.034	-0.032	-0.033	-0.030				
	(-0.32)	(-0.30)	(-0.32)	(-0.29)				
PRIBC					-0.602	-0.613	-0.524	-0.533
					(-1.21)	(-1.23)	(-1.06)	(-1.08)
SMTVT					0.385	0.419	0.475	0.525*
					(1.23)	(1.33)	(1.51)	(1.65)
R² overall	25.22%	27.41%	20.14%	23.41%	36.02%	38.95%	32.12%	35.83%
F	2.65***	2.50***	2.67***	2.54***	2.85***	2.73***	2.91****	2.82***
LM χ²	124.34***	51.14***	38.70***	16.51***	129***	58.34***	39.93***	18.38***
Hausman χ²	19.68	21.17	750.32***	31.89***	14.09	14.09	53.19***	47.65***
# observations	194	194	194	194	192	192	192	192
# countries	24	24	24	24	24	24	24	24

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