The stock return predictability of the European banking sector

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Abstract

Many studies have documented that stock returns can be predicted by company-specific variables in a manner inconsistent with the accepted paradigms of modern finance. In this paper, we examine the predictability of the cross-section of bank stock returns in Europe using the influential work of Fama and French (1992). We examine predictability in the cross-section of bank stock returns using information contained in individual bank fundamental variables such as loan quality, leverage, off-balance sheet usage, and earnings structure (operating income and cost structure). We rely on two methodologies in our empirical analysis of the relationship between company-specific variables and stock returns: portfolio grouping and cross-sectional regression. The evidence of this paper for the European banking sector in the period July 1997 to June 2004 suggest that the documented dispersion in expected returns from sorting on deciles the bank size, the market to book value, the income structure and the loan quality is an expected phenomenon. Also, the results indicate that the book to market value and the loan quality explain the cross-section of average stock returns.

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I. Introduction

Many studies have documented that stock returns can be predicted by company-specific variables in a manner inconsistent with the accepted paradigms of modern finance – in particular, the capital asset pricing model of Sharpe (1964) and Lintner (1965). The influential work of Fama and French (1992) on the determinants of the cross-section of average stock returns has given focus to the literature. These cross-sectional asset-pricing studies typically have excluded financial institutions because of their high leverage and the high level of industry regulations due to the negative externalities arising from potential bank difficulties. However, because of the "special nature" of financial institutions and the importance of banks (most financial systems in Europe are dominated by banks, i.e. they are bank-based systems) there may exist important links between bank-specific fundamental variables and the cross-section of banking institutions' expected stock returns. In this paper, we examine the predictability of the cross-section of bank stock returns in Europe by evaluating this special nature of banks as compared to regular industrial firms, and taking account the development of the new, more competitive, European banking landscape.

More specifically, in the past two decades, European banking markets have been subjected to structural changes, which were caused by modifications occurred in the external environment, especially as a consequence of the increasing monetary and financial integration. The gradual liberalization of capital flows, the prospect of the European common market, the rapid pace of developments in information technology, the product/service innovation in financial markets, the internationalisation of banking activities, the phenomenon of disintermediation, and the competitive pressure from foreign rivals are undoubtedly some of the prominent structural features of the European banking sector.

Although the European banking sector is in a state of flux, it is possible to discern some overall patterns in the actions and strategies of individual banks making use of the banking industry's relative homogeneity. The effects of these responses are mainly reflected in changes in the structure of banks' financial statements (both balance sheet and profit and loss accounts).

To judge the implications of the above mentioned developments, in this paper, we make use and examine the ability of bank-specific accounting ratios to price the cross-section of monthly bank stock returns in Europe. We employ fundamental variables from traditional and non-traditional financial intermediation activities that capture the dramatic changes recently experienced by the banking industry. Specifically, we examine predictability in the cross-section of bank stock returns in Europe using information contained in individual bank stock fundamental variables such as asset quality, leverage, off-balance sheet usage, and earnings' composition (income structure and cost amount).

Evaluating the banks' overall performance and monitoring their financial condition and accounting structure is important to depositors, owners, potential investors, managers, and regulators. This paper contributes to the asset-pricing literature, since, as far as we are aware, this is the first attempt to capture the examined issue for the European banking sector. Recently, Cooper et.al. (2003), by employing quarterly US bank holding company data from the Federal Reserve System (Fed) over the period June 1986-December 1999 and using one-way sorts and cross-sectional regressions, found that

variables related to percentage changes in non-interest income to net income, loan-loss reserves to total loans, earnings per share, the book value of equity to total assets, and standby letters of credit to total loans, are all univariately important in forecasting the cross-section of bank stock returns. A crucial question in asset pricing is whether the results obtained for U.S. stock markets can be generalized to markets in other countries.

The structure of the paper is organized as follows: Section II displays the bank-specific fundamental variables used in our analysis, analyses the construction of our variables, provides the portfolio methodology employed to measure the relationship between the cross-section of fundamental variables and expected returns, and presents an analysis of the data. Section III contains the empirical results regarding the relationships between the bank-specific fundamental variables and the cross-section of future returns, and discusses the results. Some conclusions are offered in the final section.

II. Fundamental variables and data analysis

This study evaluates the role of specific fundamental accounting variables in explaining the cross-section of expected bank stock returns in Europe. Subsequently, we employ variables that have been shown to be important in determining the fundamental riskiness of banks or reflect recent changes in business practices that may affect bank risk.

Any profit maximisation business, including banking, confronts macroeconomic risks (for example, the effect of recession) and microeconomic risks (for example, new competitive threat). However, banks also face a number or risks atypical of non-financial firms generating variability in banks' cash flows. Improvements in the techniques used to control risks in banking are intended to carry a number of potential benefits for banks: less volatile profits, which should improve the bank's standing in the market; lower costs; and greater speed and consistency in decision-making.

The 1990s witnessed European banks becoming less profitable as non-depository firms became increasingly competitive in traditional banking activities (*disintermediation process*). Commercial banks reacted to strengthening competitive pressures by taking on increasingly risky business on traditional business activities and rebalancing their portfolios with a greater weight given to off-balance sheet activity. As a result of these banking practices, the income structure of credit institutions has changed. Although interest revenue still constitutes the principal source of banks' earnings, recent studies on banking activities report an increasing share of non-interest income, mainly arising from fee-based products and services and from off-balance sheet activities.

Several research studies (e.g. Thakor, 1987; Kane and Unal, 1990; Grammatikos and Saunders, 1990; Madura and Zarruk, 1992; Kim and Santomero, 1993; Docking et.al., 1997) and banking practices suggest that fundamental variables associated with a bank's traditional and off-balance sheet activities may contain important information for the cross-section of financial institution's expected returns. Thus, we include in our analysis a set of bank-specific variables that reflect differences in risks, and banks' production function, to allow for bank heterogeneity.

Earnings per share

Most banks are keenly interested in earning maximum earnings in order to provide the highest possible return to their shareholders and secure additional funds to support long-term growth. As the European banking industry continuously evolves, changes in industry composition and the macroeconomic environment have a direct impact on the aggregate performance of the industry.

Although earnings information, unlike the other measures we examine, is not unique to banks, we include it in our study since fluctuations in banks' earnings tend to be less severe over time (because of the ability of banks to insulate earnings with adjustments from loan-loss reserves) than non-financial firms, and thus shocks to this variable may have an important impact on future returns. If banks' profitability become more volatile, banking is more risky unless the level of profitability raises substantially. So, there is a clear connection between profitability volatility and banking stability; a high level of profitability volatility is a source of instability in the banking system, augmenting the possibility of bank failures.

Measuring bank performance is a difficult task because of the multidimensional and intangible nature of banking products and the lack of explicit prices for some of the output. Earnings per share data, through historical accounting information, are closely followed by investors who use the information to monitor changes in a firm's performance. Many empirical studies (among others Rendleman et.al., 1982; Bernard and Thomas, 1990; Cooper et.al., 2003) link changes in profits to stock returns of several types of firms (not just financial firms). We construct this variable by employing published earnings excluding gains and losses from trading activities and other extraordinary items and discontinued operations. This ratio is a more comprehensive measure of the overall degree of competition in banking services due to the fact that during the examined period banks increasingly focused on their traditional retail operations owing to the continued retrenchment of investors from equity markets towards safer investments. Profits have been extrapolated before tax to cover the different taxation systems that are implemented across Europe. For example the tax figure reported on a firm's annual statements may include tax credits or carry-forwards that do not pertain to the current year's performance.

Non-interest income to net income

In recent years as market conditions have become tougher and more competitive, the focus of bank management has tended to shift away from interest earnings towards fees and other income to maintain growth in revenues and to diversify its sources of income. The relative share of non-interest income (as a percentage of total operating income) increased in the European Union (EU) banking sector throughout the last decade. A recently published report of the European Central Bank (2000) confirms the increased importance of non-interest income (fees, commissions and profits from financial operations and securities holdings) for EU banks. This evolution was a result of both increasing non-interest income and the ongoing reduction in interest income. The growth of non-interest income seems to have a positive effect on bank profitability. The positive impact on profitability has, however, been limited by the increased operating costs associated with the development of activities generating non-interest income. The composition of non-interest income is rather heterogeneous. Fees and commissions are

the main components, with the other three components being net profit from financial operations, income from securities, and other operating income.

These changes are of importance for financial stability. The reason is straightforward. The more unstable is a bank's (or any other firm's) earnings stream, the more risky the firm is. It appears to be the conventional wisdom that non-interest income is more stable than interest income and that fee-based activities reduce bank risk via diversification. The combination of banking, insurance and securities activities may lead to a more stable profit stream, since the revenues stemming from different products in a conglomerate organisation (universal banking) are usually imperfectly correlated. While banks' net interest margins are highly dependent on interest-rate movements and economic cycles, fee income provides diversification and greater stability for bank profits. If that is correct, it then follows that mixing interest and non-interest income will reduce the volatility of earnings. Several empirical studies have indicated substantial benefits from diversification into nonbank activities, e.g. Eisemann (1976), Brewer (1989) etc. An early study of foreign currency trading and investment activities by Grammatikos et.al. (1986) finds that US banks may reduce risk by carefully engaging in off-balance sheet activities that generate non-interest income. Canals (1993) concluded that the increased revenues obtained from new business units have significantly contributed to improving bank performance in recent years. Saunders and Walter (1994) found that the expansion of banks' activities reduces risk, with the main risk reduction gains arising from insurance rather than securities activities. More recently, Gallo, Apilado and Kolari (1996) found that a high proportion of mutual fund assets managed relative to total assets of bank holding companies over the period 1987-1994 was associated with substantially increased profitability for bank holding companies and also with risk reduction. Rogers and Sinkey (1999) observe that non-interest income has risen relative to income from traditional activities. Their study suggests that banks emphasizing new sources of income tend to be larger and exhibit less risk since they have more diverse sources of revenue and greater access to financial market. The ratio of non-interest income to total income should capture the changing nature of revenue streams from business activities that may affect the riskiness of financial institutions.

This conventional wisdom may however be rooted in the past behaviour of non-interest income. As fee-based activity of banks has increased, this conventional wisdom may no longer be justified. De Young and Roland (2001) suggest three reasons why non-interest income may increase the volatility of bank earnings. First, most bank loans are relationship-based and as a result have high switching costs, while most fee-based activities are not relationship based. Thus, despite credit risk and fluctuations in interest rates, interest income from loans may be less volatile than non-interest income from fee-based activities. Second, within the context of an ongoing lending relationship, the main input needed to produce more loans is variable (interest expense); in contrast, the main input needed to produce more fee-based products is typically fixed or quasifixed (labor expense). Thus, fee-based activities may require greater operating leverage than lending activities, which makes bank earnings more vulnerable to declines in bank revenues. Third, most fee-based activities require banks to hold little or no fixed assets, so unlike interest-based activities like portfolio lending, fee-based activities like trust services, mutual fund sales, and cash management require little or no regulatory capital. Thus, fee-based activities likely employ greater financial leverage than lending activities. Using

data from U.S. banks during the 1990s, the authors demonstrate that three traditional streams of income from intermediation activities – interest from loans, interest from securities, and service charges from deposits – were all less volatile than income from fee-based activities.

Loan-loss provisions to total loans

The level of loan-loss provisions is an indication of the banks' asset quality and may signal changes in the future performance of the institution (see also Thakor, 1987). It is extremely difficult to assess asset quality because limited information is available. Credit risk measures focus predominantly on loan experience because loans exhibit the highest default rates.

Analysts frequently cited the over-exposure to commercial real estate, construction and land development loans as probable candidates for explaining poor bank performance. Zimmerman (1996) found that the number of commercial real estate loans is closely driving the asset quality rather than the earnings performance of the banks. This may be related to the lags between the time a loan might become delinquent, when it might be classified as a problem loan, when expenses on loan provisions are taken, and when it might actually result in a charge against earnings. It also may reflect a bank's ability to charge higher rates on higher-risk loans over the business or real estate cycles. In any case mountaining loan losses have decreased the average profitability of banks while continued declines in loan-loss provisions are many times the primary catalysts for increases in profit margins (see also Miller and Noulas, 1997). Madura and Zarruk (1992) observe a contagion effect, with negative share price responses, when increases in loan-loss reserves are related to bad real estate loans. Wahlen (1994) examines the information content in non-performing loans, loan-loss provisions and loan charge-offs and finds that all three components are important for explaining returns and future cash flows. Musumcci and Sinkey (1990) and Strong and Meyer (1987) suggest that investors use information on loan-loss provisions to revise their expectations of a bank's future performance. Therefore, the ratio we construct regarding the asset quality is loan loss provisions to total loans.

Book value of equity to total assets

A different leverage structure is one reason why financial institutions have been largely ignored in earlier studies of return behaviour. We include a leverage variable to determine if changes in leverage contain important information for bank-specific stock prices. The equity-to-assets ratio is included to measure the overall capital strength. The ratio is a measure of capital adequacy, and should capture the general average safety and soundness of the financial institutions. A deterioration of the equity-to-assets ratio indicates either an increase in debt financing of banks' total assets (while holding total assets constant), or a decline in banks' total assets (while holding total equity constant), or both over time and space. Irrespectively, this is an increase in banks' risk, and potentially, in banks' cost-to-capital. The theory of capital structure states that a higher use of debt (equity) financing within a certain range, called the target capital structure, might actually reduce (increase) firms' cost of capital. Thus a positive (negative) coefficient estimate for equity-to-assets indicates an efficient (inefficient) management of banks' capital structure. Leverage has been demonstrated to be important in explaining

the stock market performance of financial institutions. For example, in Brewer et.al. (1996a) and Brewer et.al. (1996b), financial leverage was found to be an important variable in explaining financial institutions' risk and return. More specifically, Cantor and Johnson (1992) find a strong positive relationship between improving capital ratios and stock market returns for bank holding companies. They also demonstrate that of the various methods used to increase capital ratios, increases in earnings were associated with the largest stock price increases.

Loans to total assets

Loans typically represent the major portion of a bank's investment portfolio; the ratio of loans to total assets is used as a proxy for measuring liquidity risk. Since loans are difficult to trade in a secondary market, they are the least liquid assets, after fixed assets, in a bank's balance sheet. Hence, a high ratio of loans to total assets indicate a bank that is relative illiquid, whereas a low ratio indicates a liquid bank with excess lending capacity. However, bank claims held by shareholders are unlikely to fully reflect information impounded in the bank's loan portfolio due to the confidentiality of the bank-borrower relationship and limited disclosure about lending agreements (O'Hara, 1993).

Off-balance sheet activities to total assets

One of the most striking trends for many financial institutions has been the growth of their off-balance sheet activities. An off-balance sheet activity, by definition, does not appear on a financial institution's current balance sheet since it does not involve holding a current primary claim (asset) or the issuance of a current secondary claim (liability). Banks are engaged in a number of off-balance sheet activities, like letters of credit, loan commitments by banks, and positions in forwards, futures, swaps, and other derivative securities. Off-balance-sheet activities, however, can involve risks that add to the overall insolvency exposure on a financial institution. Avery and Berger (1991) argue that loan commitments increase a bank's risk by obligating the bank to issue future loans under terms no longer be acceptable. Brewer and Koppenhaver (1992) observe that issuances of letters of credit affect the systematic and total risk of bank stock returns, though less significantly than traditional balance sheet lending.

Cost to income ratio

The efficiency of financial institutions has long been in the centre of academic research, and has received a substantial amount of attention. This is primarily due to the fact that efficiency is of particular interest for both managers, whose aim is to improve the performance of their financial firms by identifying "best practices" and "worst practices" associated with high and low measured efficiency respectively, and policy makers, whose task is to assess the effects of deregulation, mergers, or market structure on efficiency and to safeguard the stability of financial systems.

Nowadays, due to mild revenue growth, cost efficiency has emerged as a key strategic target for bank management. Banks have stepped up their cost-saving efforts introducing organizational changes (such as outsourcing) and reducing both their branch networks and the number of employees, scaling back plans/ambitions to a certain extent, particularly in terms of mergers and acquisitions, and by concentrating more on their core business. This study investigates operating efficiency by using the measure of the share

of the operating income reserved for covering the costs (cost to income ratio). Such an analysis might seem naive at first sight, but many studies (e.g. Peristiani, 1997) find that simple accounting ratios are important and highly correlated with econometric estimates of efficiency.

The data

We employ yearly consolidated accounting data from the financial statements presented in Bankscope database for the period 1996 - 2003. The advantage of using the Bankscope database is that, since the data are provided at the level of the individual institution, it is possible to filter this, so it covers a subset of comparable institutions allowing sensible comparisons to be made between European countries. The data were reviewed for reporting errors and other inconsistencies (e.g. negative values for equity, and positive values for operating expenses and loan loss provisions). In these cases observations were dropped from the sample. We form a sample of 193 firms that covers almost all credit institutions (i.e. commercial, cooperative and savings banks) that are publicly traded in the European stock markets.

We use monthly stock return data collected from Datastream for the period 31/07/1997 – 30/06/2004. The sample contains companies with different accounting years-end. Therefore, because we were matching accounting data for all accounting year-ends in calendar year t-1 with returns for July of year t through June of year t+1, some variation exists in the gap between returns and the matching accounting data. We used a company's accounting variables at the fiscal year-end that fell in year t-1 and formed portfolios at the end of June in year t (for each year). Thus, because companies report their balance sheet data after their fiscal years-end, we did not use information that was not actually available to the investor at the time of portfolio formation. By matching accounting data for companies with a fiscal year-end that fell in year t-1 with the return period starting in July of year t, we assured that accounting data would be publicly available prior to the return period for the companies in our sample. In this way, we avoided a possible look-ahead bias (Banz and Breen, 1986).

Fama and French (1992) found that the ratio of book value of equity to market value of equity and the market value of equity as a proxy of the company size suffice to explain cross-sectional variation in stock returns. This is why we include these two measures. Specifically, we form the book-to-market ratio of equity by dividing the book value of a bank's equity each year t-1 from the consolidated financial statements by the market value at time t-1. The book-to-market ratio is then lined up with monthly returns in the same manner as described above for the other fundamental variables. Market capitalization, when used as an independent variable (i.e. not in the construction of book-to-market variable), is simply the lagged one-month value of market value of equity.

Table 1 presents summary statistics of the 193 banks' stock returns and the firm specific information variables. This sample comprises a very large portion of credit institutions both in terms of the number of listed credit institutions operating in the EU countries, and in importance based on their balance sheet aggregates.

(Insert Table 1 about here)

Most of the listed banks included in the sample are traded in Denmark, Italy, France, Germany and the UK. The average monthly return over the examined period is 1.27% (while the median stands at 1.22%). The average firm capitalization is about €5 billion. From constructing the firm-specific variables in the period 1996-2003, we observe that the average earnings (after the elimination of trading income and extraordinary items) per share is €2.94. The equity to assets ratio stands at 9%, while loans consists the major assets' component, representing 57% of the balance sheet aggregates. Regarding the quality of the credit portfolio, the loan loss provisions to total loans stands, on average, at 0.75%. Off-balance-sheet penetration in Europe is not as important as it is in the U.S.A., since the ratio of this kind of activities to total assets is 34%. Non-interest income represents, on average, 36% of total operating income, while the operating cost (staff expenses plus other administrative costs) to income ratio is 64%.

III. Empirical results

We rely on two methodologies in our empirical analysis of the relationship between company-specific variables and stock returns: portfolio grouping and cross-sectional regression.

Portfolio grouping

A standard practice in the empirical study of return premiums is to compare the returns of portfolios formed by sorting stocks on observable company-specific variables. Similar to Fama and French (1992) and Lakonishok et.al. (1994) we calculated the average values of returns and other company-specific variables for decile portfolios. For the end of June of year t, we sorted all stocks into ten portfolios on the basis of their company-specific variables. We assigned the bottom 10 percent to the first portfolio, the next 10 percent to the second portfolio, and so on, up to the 10^{th} portfolio, which consisted of the 10 percent of stocks with the largest values of the particular company-specific variable. Each portfolio had an average value for each variable. We then recorded the return of each portfolio for the following year (July through June), and then we repeated this grouping procedure for every year. Table 2 gives properties of portfolios formed on one-dimensional sorts for all firm-specific factors.

(Insert Table 2 about here)

Consistent with the literature on earnings for non-financial institutions, we observe a pattern of increasing portfolio returns as we move from low earnings per share in decile 1 to large earnings per share in decile 10. For example, the portfolio formed from the smallest decile of EPS averages return of 0.866% per month, and increases to 1.264% per month in the largest decile portfolio. Thus, investors appear to view favorably large increases in earnings (see also Cooper et.al., 2003).

On the other hand, as the proportion of non-interest income to total operating income increases, the average monthly returns follow the opposite direction; the average return for decile 1 is 1.279% per month, and for the decile 10 is 0.994%. thus, investors view

the large participation of non-interest income to total operating income less favorably, since the most volatile earnings' component (i.e. gains and losses from trading portfolio) is included in the income source category. These findings provide some support for Rogers and Sinkey (1999) who suggest that relative increases in non-interest income stems from more diverse sources of revenue, which reduces risk.

For the loan loss provisions to total loans, the smallest decile averages 0.594% per month and increases to 1.336% for decile 10. As this ratio increases, this is a hint of conservative prudential credit risk policy from the management of the banking firm, and investors appear to view it favorable.

For loans to assets, equity to assets, off-balance sheet items to total assets, and operating expenses to total income ratios, as judged by a lack of monotonicity across the sort deciles, there does not seem to be any significant relation with the cross-section of expected returns.

We also examine the book-to-market and firm capitalization of equity to see what, if any effect, these two variables have on the expected returns on the sample. Table 2 shows that the average monthly returns were found to be positively related to book-to-market value, and, to some extent, negatively related to the size. Specifically, the smallest BM portfolio presents negative returns (-0.235% per month), whereas the largest BM portfolio earned 1.278% per month, generating a return difference of 1.513% between these two extreme portfolios. Regarding the size variavle, the smallest MVE portfolio earned 1.593% per month, whereas the largest MVE portfolio earned 0.676% per month, generating a return difference of 0.917% between these two extreme portfolios.

Cross-sectional regression

We used the Fama and MacBeth (1973) cross-sectional regression methodology to measure the return premiums associated with the firm-specific variables. For each month of the sample period (July 1997 to June 2004), we ran a cross-sectional regression of individual stock returns on company-specific variables.

The error terms from each individual cross-sectional regression are likely to be cross-sectionally correlated and also heteroscedastic. As a result, the t-statistic in the individual (ordinary least squares) cross-sectional regression tends to overstate the precision of the actual significance of the estimated parameters. Recognizing this problem, Fama and MacBeth ran cross-sectional regressions each month, generating time series of parameter estimates. Under the assumption of independently and identically distributed time-series monthly coefficients, we used the time-series monthly averages from each series of parameter estimates to represent the coefficients of the variables and used the t-test technique to assess the statistical significance of the independent variables. Table 3 presents the results of regressions of monthly returns on combinations of the bank-fundamental variables, as well as book-to-market and firm capitalization.

(Insert Table 3 about here)

The results from the univariate regressions (models 1 through 9) are presented first in Table 3. We observe that the book to market value is highly significant and positive, while the loan-loss provisions to total loans is also positive and, to a lesser extent, significant. All other variables are not significant.

IV. Conclusions

This paper documents predictability in the cross-section of bank stock returns in Europe using variables that have been shown in previous banking studies to be related to risk and shareholder value. The implications of this type of study for the practice of investment analysis, both domestically and internationally, are important.

We rely on two methodologies in our empirical analysis of the relationship between company-specific variables and stock returns: portfolio grouping and cross-sectional regression. The evidence of this paper for the European banking sector in the period July 1997 to June 2004 suggest that the documented dispersion in expected returns from sorting on deciles the bank size, the market to book value, the income structure and the loan quality is an expected phenomenon. Also, the results indicate that the book to market value and the loan quality explain the cross-section of average stock returns.

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Table 1: Descriptive statistics

Country	Number of Firms	Variables	Mean	Standard Deviation	Median
Austria	7	Monthly Returns	1.27%	0.98	1.22
Belgium	6	MVE	4.99 (B€)	12.73	0.48
Denmark	40	BM	0.93	0.95	0.81
Finland	2	EPS	2.94	12.82	0.63
France	26	EA	0.09	0.06	0.07
Germany	22	LA	0.57	0.17	0.60
Greece	11	OBSA	0.34	0.45	0.23
Ireland	5	LLPL	0.0075	0.0055	0.0065
Italy	29	NIITI	0.36	0.14	0.36
Luxembourg	3	OETI	0.64	0.13	0.64
Netherlands	5				
Portugal	6				
Spain	13				
Sweden	5				
UK	15				
Total	193				

Notes: The table provides the mean, median and variance for the 193 bank firms' monthly returns and industry-specific variables. The variables are the firm capitalization of equity (MVE), the book-to-market ratio (BM), and seven bank-specific variables. The bank-specific variables, constructed as yearly values, are: earnings per share (EPS), operating expenses to operating income (OETI), non-interest income to total operating income (NIITI), loan-loss provisions to total loans (LLPL), book value of equity to total assets (EA), off-balance-sheet activities to total assets (OBSA), and loans to total assets (LA).

Table 2: Average monthly returns for portfolios formed on one-way sorts

	MVE	BM	EPS	EA	LA	OBSA	LLPL	NIITI	OETI
1 (Small)	1.593	-0.235	0.866	1.136	1.288	1.046	0.594	1.279	1.577
2	1.578	0.852	1.268	1.046	0.889	1.528	1.282	1.438	0.791
3	1.295	0.760	0.967	0.909	1.174	1.036	1.229	1.511	1.024
4	1.369	1.272	1.019	1.192	1.506	0.706	1.270	1.365	0.804
5	1.046	1.385	1.039	0.891	0.446	1.158	1.199	1.023	1.167
6	1.224	1.151	0.583	1.252	1.129	1.091	1.110	1.312	1.201
7	0.745	1.440	1.387	1.038	1.301	1.101	1.108	0.851	1.117
8	0.952	1.866	1.504	1.367	1.128	1.093	1.251	0.845	1.279
9	0.730	1.671	1.437	1.012	1.179	1.499	1.123	0.924	0.948
10 (Large)	0.676	1.278	1.264	1.261	1.164	1.010	1.336	0.994	1.148
Abs differ. (S-L)	**0.917**	**1.513**	**0.398**	**0.125**	**0.124**	**0.036**	**0.742**	**0.285**	**0.429**

Notes: Average monthly percentage returns for portfolios formed on decile ranks of bank specific variables. All variables are shorted monthly in deciles and equally weighted portfolios are formed and returns are calculated for the following month. The lagged variables are the firm capitalization of equity (MVE), the book-to-market ratio (BM), and seven bank-specific variables. The bank-specific variables, constructed as yearly values, are: earnings per share (EPS), operating expenses to operating income (OETI), non-interest income to total operating income (NIITI), loan-loss provisions to total loans (LLPL), book value of equity to total assets (EA), off-balance-sheet activities to total assets (OBSA), and loans to total assets (LA).

Table 3: Monthly cross-sectional regressions

Model	lnME	lnBM	lnEPS	lnOETI	lnNIITI	lnLLPL	lnEA	lnOBSA	lnLA
1	-0.098 (-0.96)								
2		**0.327 (1.86)**							
3			0.027 (0.21)						
4				0.036 (0.07)					
5					-0.129 (-0.35)				
6						**0.214 (1.65)**			
7							0.083 (0.33)		
8								0.122 (0.947)	
9									0.095 (0.25)

Notes: This table provides the mean and t-values (in parentheses) of estimated coefficients from monthly cross-sectional regressions of monthly returns regressed on the fundamental variables from July 1997 to June 2004. In the regressions, each explanatory variable is expressed in logarithmic form. The reported point estimates are the means of the time series of coefficients from monthly cross-sectional regressions. All point estimates are expressed in percentage terms. The lagged variables are the firm capitalization of equity (MVE), the book-to-market ratio (BM), and seven bank-specific variables. The bank-specific variables, constructed as yearly values, are: earnings per share (EPS), operating expenses to operating income (OETI), non-interest income to total operating income (NIITI), loan-loss provisions to total loans (LLPL), book value of equity to total assets (EA), off-balance-sheet activities to total assets (OBSA), and loans to total assets (LA).