"DEPOSIT RATE CEILINGS AND THE MARKET VALUE OF BANKS: THE CASE OF FRANCE 1971-1981"

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N° 89 / 35

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Director of Publication:

Charles WYPLOSZ, Associate Dean
for Research and Development

Printed at INSEAD,
Fontainebleau, France

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INSEAD, Fontainebleau

May 1989

* Careful data collection and computing assistance by Martine Langohr and Jay Wortmann are gratefully acknowledged as well as financial support from INSEAD (project 2040).

Abstract

The goal of the paper is to assess the relationship between the market value and the asset-liability structure of French banks listed on a Stock Exchange. A simple bank valuation model is developed and empirically tested. The paper attempts to evaluate the rent on deposits subject to interest rate ceilings and to analyse the determinants of the 1974 drop in banks' market values.

1. Introduction

There is a long tradition of deposit rate controls in France. Interest payments on demand deposits are prohibited and ceilings on savings and term deposit interest rates have been enforced for many years. This form of regulation could increase the profitability of banks and their market values. However, non-price competition means such as branching and free-checking or disintermediation could reduce the extent of regulatory rents in a competitive economy. The purpose of the paper is to assess the relation between the market value and the asset-liability structure of French banks listed on a stock exchange.

In an efficient market, the market value of a bank equity should reflect the risk-adjusted capitalised value of expected future dividends. Therefore, a high market value should be associated with high profitability. An analysis of the relationship between the market value and the asset-liability structure of banks should help trace the importance of rents on specific assets and liabilities.

This paper investigates the determinants of the market value of French banks. With its emphasis on market values, it contrasts sharply with traditional 'event' studies[1]. Whereas these studies evaluate the abnormal returns associated with a change in the economic environment, this paper analyses the bank specific sources of wealth. Moreover, it differs in method from the Pelzman (1968) and Kyle-Sachs (1984) papers which use mostly income variables to explain the market to book value ratio of American banks. The approach followed in this paper uses a simple bank valuation model which predicts the relationship between the asset-liability structure and the market value. It can be viewed as a Modigliani-Miller type of model applied to the case of a bank where the market value of equity is defined as the sum of the current value of assets net of the liabilities.

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1 Dann and James (1982), Flannery and James (1984a,b), Aharony,Saunders and Swary (1985), Cornell and Shapiro (1986), and Brunner and Simons (1987). An exception is Unal and Kane (1986) who attempt to measure the interest rate sensitivity of a firm's generalized balance sheet.

Three hypotheses pertaining to the effect of corporate taxation, the importance of rents and the sources of the 1974 drop in the market value of French banks are empirically tested. The findings can be summarized as follows. First, corporate taxation has a significant negative effect on the market value of assets and liabilities. Second, there is a statistically significant positive association between the size of demand deposits subject to a zero interest rate ceiling and the market value of equity. Third, the substantial drop in the market to book value ratio observed since 1974 is associated with a lower valuation of all banks' assets, including short-term Treasury Bills and interbank claims. This contrasts sharply with the conjecture of Maisel (1981) who explains the drop in the market to book value ratio of American banks by a lower valuation of loans and long-term fixed-rate securities.

The paper is organized as follows. The issues in profitability evaluation are discussed in section 2, followed by a description of the model and by the testable propositions. The French banking system and the sample are presented in section 3 and the empirical evidence is reported in section 4. The last section concludes the paper.

2. The Valuation Model

The purpose of the paper is to assess the extent of superior profits or rents on specific assets or liabilities. In the banking literature, Statistical Cost Accounting (Hester-Pierce, 1975) is a well known approach to study the determinants of profitability. A review of the shortcomings of this methodology is followed by a description of the valuation model and the testable propositions.

2.1 Issues in Profitability Analysis

Statistical cost accounting assumes that bank profit is a linear function of the banks' various assets and liabilities. The estimated parameters represent the costs and returns of the corresponding liabilities and assets. This approach suffers from four shortcomings. First, accounting numbers blur bank profit measures by the accounting conventions for interest accruals and valuation rules. Second, accounting measures of profitability

and its sources are not adjusted for risk (Ratti, 1980). Third, an observed intermediation margin can be purely transitory if the adjustment or transaction costs of reaching equilibrium are more than trivial. Finally, in a risk sharing perspective (Okun, 1981) where borrowers or lenders agree to fix specific margins for different states of the world, observed margins are equilibrium ones only in a particular state of the world. This would not represent a rent, however, as an 'average' measure of profits across all possible states of the world would be necessary. For all these reasons, the use of accounting return and cost estimates as evidence of positive or negative rents present serious shortcomings.

The analysis of the market value of equity offers an alternative approach to measuring the existence of rents. Lindenberg and Ross (1981) and Smirlock, Gilligan, Marshall (1984) applied the Tobin's approach i.e., the ratio of market value of an asset to its replacement cost to problems of industrial organisation. In an efficient market, stock prices account for the measurement problem and the disequilibrium, risk sharing or risk aversion parameters. High market values relative to replacement costs are then signals of risk and time path adjusted sources of wealth accruing to the firm. These sources could be regulatory rents, firm specific proprietary knowledge or expertise.

The methodology used in the paper differs from the existing literature. Pelzman (1968) analyzed the determinants of the q ratio with a Durand type valuation model focusing on income variables. Kyle and Sachs (1984) expanded the Pelzman approach by adding to the income variables an international loan variable. The approach followed here does not focus on income variables. Consistent with a valuation model of the banking firm, it concentrates exclusively on balance sheet variables. The main advantages of this approach are to bypass problems of correlation between income and asset variables and to search for rents on specific assets or liabilities[1].

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1 See the related papers by James (1983) and Dann and James (1982). They use an event study approach to measure the effect of a regulatory change on bank stock prices.

2.2 The Valuation Model

The valuation model is a Modigliani-Miller type model adapted to the banking industry. An infinitively lived bank is assumed to fund a portfolio of perpetual loans (L) and bonds (B) which carry fixed interest rates, p and b, respectively. These assets are financed with perpetual deposits (D) and equity (E). Deposits offer a fixed deposit rate d. Loans, bonds, deposits and equity are recorded at their historical acquisition cost. The current one-year return on similar assets and liabilities are p*, b* and d* respectively, assumed constant over time. These rates are net of operating costs. The bond and equity markets are assumed perfectly elastic and the (certainty equivalent) cost of equity is the bond market return b*, the opportunity return available to shareholders. These assumptions are consistent with the neoclassical model of the banking firm[1]. The particular structure of the model calls for a comment. The return and cost p* and d* respectively are defined as net of the price for risk, and the existence of interest rate differentials is not ruled out. These are consistent with regulatory rents, imperfect competition or barriers to entry which could prevent the creation of perfect substitutes. The relevance of any of these possibilities is an open question which can be solved empirically. The balance sheet of a representative bank is described in Figure One:

Figure One : Balance Sheet

Loan L (p)	Deposits D (d)
Bonds B (b)	Equity E (b*)

Remarks: Assets and deposits are perpetuities
Book returns are denoted by p, b, d
Current rates are denoted by p*, b*, d*

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1 Microeconomic model originally presented in Klein (1971), Monti (1972) and further developed in Dermine (1986). The model assumes that the optimal volumes of loans and liabilities are determined by marginal return and cost considerations.

Assuming that the after tax profit is paid out as dividends, the market value of this perpetual bank denoted by MV is:

$$MV = \frac{(1-\tau)\ (pL + bB - dD)}{b^*}, \qquad (1)$$

or

$$MV = \frac{(1-\tau)p}{b^*} \times L + \frac{(1-\tau)b}{b^*} \times B - \frac{(1-\tau)d}{b^*} \times D, \qquad (2)$$

where τ is the corporate tax rate.

The market value of the equity is simply the sum of the net assets valued at the current market rate b*. The goal of the empirical analysis is to estimate and draw inferences about the coefficients $\frac{(1-\tau)p}{b^*}$, $\frac{(1-\tau)b}{b^*}$, and $\frac{(1-\tau)d}{b^*}$ associated with the loans, the bonds and the deposits, respectively. These coefficients are likely to differ from one because of the incidence of the corporate tax and/or the difference between the book return (p,b,d) and the market return (b*). The latter difference may be due to rents when the current rate (say p* or d*) differs from b*, or to accounting rules when the book return (p) differs from the current rate (p*), or both.

Conjectures about the value of some of these coefficients are possible. In particular, the coefficient of short term treasury bills or interbank assets should be equal to $(1-\tau)$ since these instruments are traded on perfectly competitive market. Similarly, the valuation coefficient of short term deposits should be lower than the one of treasury assets when the deposit rate d* is smaller than b*. Moreover, a higher tax penalty should not be precluded in period of inflation. Theory shows that banks, which are net holders of financial assets, are penalized since they are taxed on their nominal income (Dermine, 1985)[1]. This suggests the following three

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1 The inflation premium increases the nominal interest rate and the net interest margin, but, because of taxation, fails to compensate fully for the erosion of value.

testable propositions:

P1 : The valuation coefficient of short term treasury asset is smaller for taxable banks than for non-taxable institutions. This reflects a tax penalty.

P2 : The valuation coefficient of short term treasury assets falls in period of inflation. This reflects an inflation tax.

P3 : The valuation coefficient of the treasury asset is larger than the valuation coefficient of short term deposits. This reflects the rent effect on deposits.

3. The Sample

Some relevant characteristics of the French banking system are presented in this section, followed by a description of the sample.

3.1 The Structure of the French Banking System

According to the 1945 Banking Law, the registered banks ('banques inscrites') fall into three categories: the deposit banks ('banques de dépôts'), the merchant banks ('banques d'affaires') and the long and medium term credit banks ('banques de crédits à moyen et long terme'). The main activity of deposit banks is to carry credit operations and to receive demand and time deposits from the public. The activities of merchant banks are, besides granting loans, to take equity participations in existing concerns or in the process of being established. The role of medium and long term credit banks is to grant loans with a maturity of at least two years. Since the 1966 reform, the distinction is becoming less clear and many banks have evolved towards the universal type. However, the activities of the long and medium term credit banks are still quite specific. A large part of those included in the sample belong to a special category specialized in leasing. These institutions, named SICOMI, hardly pay any

corporate income taxes[1]. The recent 1984 Banking Law abolished these categories and created a superstructure ('établissement de crédit') which include all financial institutions (banks, savings banks and finance companies).

Deposit rates are regulated in France by the Conseil National du Crédit. Interest payments on demand deposits were abolished on 1 July 1967 and ceilings on savings and term deposits have been enforced systematically. To illustrate the importance of these ceilings, the interbank rate and the after reserve requirement interest margins on demand deposits, savings deposits and term deposits are reported in Table One. In some years (in particular 1974, 1980 and 1981) these margins are above 10 percent. Disintermediation was not very important since Money Market Funds ('Sicav de Trésorerie') were only created in the mid-80's.

Insert Table One

3.2 The Sample

The study covers the period 1971-1981. On December 30, 1981, 54 out of the were 397 registered banks in France were listed on a French Stock Exchange. The sample includes 51 banks in 1981. It excludes the three large government-owned national banks[2]. Due to availability, all data are end-of-year[3].

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1 The Sociétés d'Investissement pour le Commerce et l'Industrie were created to stimulate industrial investment building. A main characteristic is the almost complete exemption from corporate taxes. A large part of their assets are leases ('crédit bail or location') with a maturity of 15 to 20 years.

2 The three large national banks (Banque Nationale de Paris, Credit Lyonnais and Société Générale) were nationalized in 1945 and only a small fraction of their shares is listed on the Stock Exchange. The sample is not constant through time as some institutions have been introduced after 1971 or delisted before 1981. The nationalization programme prevents the use of more recent data.

3 The balance sheet data are taken from the Annuaire Desfossés from 1971 up to 1978 and from the annual publication Bilans des Banques for the remaining years. The end of year market value data are taken from Année Boursière (Compagnie des Agents de Change).

A complete description of the balance sheet structure of the various groups of banks is given in Appendix One. Some characteristics of the sample are striking. The surprisingly high equity ratio for the total sample (16% in 1981) is caused by the financial structure of the long and medium term credit banks. It is interesting to observe that these banks which hardly pay any corporate income tax operate with an equity ratio of 31% in 1981. In France, as in other countries, a general downward trend in the equity to assets ratio for the various categories of banks is observed, as well as a substantial decrease in the ratio of market to book value in 1974. The ratio falls to 1.02 in 1974 from an average of 1.45 over the years 1971-1973. A similar reduction was observed in the United States (Maisel, 1981). Moreover, money market funding is increasing sharply over the period and demand deposit funding is important. The large volume of fixed assets is explained by the Sicomis, the long and medium term credit banks specialized in leasing, mostly financed on the money and capital markets.

4. Empirical Tests of the Model

4.1 Methodological Issues

For empirical testing purposes, the valuation model specified in equation (2) must be adapted for three reasons. First, an error term must be included to account for the variables not specified in the model, such as superior performances in terms of control of costs or revenues. Second, the specific tax treatment of dividend income must be explicitly modeled. Third, the variables on the left and right hand sides of equation (2) must be divided by a firm specific variable to control for heteroskedasticity. The last two issues are discussed in greater detail below.

The French income tax rebate implies that the before personal tax cash flow available to shareholders is equal to the dividend income grossed up by 50%[1]. The tax rebate, however, does not apply to the Sicomis which are not subject to corporate taxation. Accordingly, the tax factor $(1-\tau)$ in

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1 See Pène (1983). Personal taxes are assumed to be neutral with respect to the valuation model. This is not unrealistic as personal tax rules in France imply that only very large capital gains and dividend incomes are taxed.

equation (2) is replaced by a dummy variable taking on a value equal to 1.5 (1-τ) for non-Sicomi banks and to 1 for Sicomis.

Heteroskedasticity arising from size differential has received some attention in the cost accounting literature. A way to minimize the impact of heteroskedasticity on the standard errors estimates of the regression coefficients is to divide the left and right hand sides of equation (2) by a firm specific variable. A possible choice, consistent with Tobin's q ratio, is the book value of equity. This variable is inadequate, however. Standardizing the dependant and explanatory variables by the book value of equity introduces multicollinearity. This problem originates from the balance sheet equality[1]. A more appropriate variable is "total assets". The standard error estimates obtained with White's (1980) heteroskedastic consistent variance matrix estimator are extremely close to their OLS counterparts for all the regressions performed in the paper. The trivial difference between the two sets of estimates suggests that heteroskedasticity is well controlled for after standardizing all the variables by "total assets"[2]. Further, the multicollinearity diagnostic of Belsey, Kuh and Welsh (1980) based on the singular decomposition of the data matrix indicates that this standardization does not introduce any multicollinearity problem.

The three null hypothesis are empirically tested by relating in a cross-sectional regression the standardized market value of the bank at time t, as the dependant variable, to the (standardized) assets and (standardized) liabilities measured at end of year t, as the explanatory variables. The assets and liabilities are the fixed assets (FA), credit (CRE), net money market assets (TR), net long term investment and participation (PORT), demand deposits (DEDE), term deposits (TEDE) and savings deposits (SADE). Fixed assets are included for their abandonment or leasing values. The regression is,

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1 The sum of the assets divided by the book value of equity is equal to the sum of the liabilities divided by the equity plus one.

2 The OLS standard error estimates or t-statistics are, therefore, the only ones reported in the paper.

$$MV_{it} = \alpha_{0T}\, FA_{it} + \alpha^{s}_{it}\, FA^{s}_{it} + \alpha_{1t}\, CRE_{it} + \alpha^{s}_{1t}\, CRE^{s}_{it} + \alpha_{2t}\, TR_{it} + \alpha^{s}_{2t}\, TR^{s}_{it} + \alpha_{3t}\, PORT_{it} + \alpha^{s}_{3t}\, PORT^{s}_{it} + \alpha_{4t}\, DEDE_{it} + \alpha^{s}_{4t}\, DEDE^{s}_{it} + \alpha_{5t}\, TEDE_{it} + \alpha^{s}_{5t}\, TEDE^{s}_{it} + \alpha_{6t}\, SADE_{it} + \alpha^{s}_{it}\, SADE^{s}_{it} + \varepsilon_{it}, \quad \forall i \in [1, N_t],\ \forall t \in [1971, 1981], \tag{3}$$

where the superscript 's' designates Sicomi banks and N_t is the sample size at time t. As mentioned earlier, the dependant and explanatory variables are divided by "total assets".

As equation (3) indicates, the number of parameters to be estimated is rather large relative to sample size. Constraints can be imposed on the model to decrease the number of parameters and hence increase the number of degrees of freedom. Two approaches are suggested to achieve that goal. In the first approach, a constraint is imposed on the tax penalty differential between Sicomi and non-Sicomi banks. More specifically, the regression coefficients associated with a specific explanatory variable are assumed identical up to a proportional factor,

$$\alpha_{ijt} = \phi\, \alpha^{s}_{ijt}, \ \forall j, \tag{4}$$

where j denotes a particular explanatory variable. For a tax rate of 48%, the proportional factor ϕ is equal to 1.28. In the second approach, a constraint is imposed on the stationarity over time of the regression coefficients thereby justifying the pooling of several years of data.

The cross-sectional regressions are run with and without imposing the constraints. These are referred to as the constrained and unconstrained regressions, respectively. The results obtained with the latter are first discussed.

4.2 The unconstrained regressions

The cross-sectional regression, specified in equation (3), is run eleven times, one for each year of the 1971-1981 time period. The regression coefficients are unconstrained except for those of DEDE, SADE and TEDE for which a proportional tax factor of 1.28 is imposed[1]. To assess the importance of the tax penalty, the inflation and the rent effects, the null hypotheses,

$$H_0^1 : \alpha_{2t} = \alpha_{2t}^s, \ \forall t \in [1971, 1981],$$

$$H_0^2 : \alpha_{2(74-81)} = \alpha_{2(71-73)},$$

$$H_0^3 : {}^{\circ}\alpha_4 t^{\circ} = \alpha_{2t}, \ \forall t \in [1971, 1981],$$

are tested, with conventional F statistics.

The results are reported in Table 2.

Insert Table 2

Table 2 indicates that the regression coefficients have the correct signs. The coefficients associated with assets (liabilities) variables are positive (negative). One exception is the coefficient of CRE^S which is not statistically significant. The null hypothesis H_0^1 (taxation) testing the equality of the regression coefficients of the treasury assets for banks that do and do not (Sicomis) pay corporate taxes is rejected by the data. The estimates obtained for Sicomis are higher than their non-Sicomi counterparts in 10 out of the 11 years in the total sample period. The

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1 This constraint is innocuous since Sicomi banks only use these sources of funds marginally.

F test indicates that the difference is statistically significant in only eight cases. Similarly, the null hypothesis H_0^2 (inflation) testing the equality of the regression coefficients and of the treasury assets in the 1971-1973 and 1979-1981 subperiods is also rejected[1]. A statistically significant drop in the estimate is observed after 1973 when inflation started[2]. The third hypothesis H_0^3 (regulation) testing the equality of the regression coefficients obtained for the demand deposits and the treasury assets is not rejected, however. The difference is never statistically significant.

These results are robust to alternative specifications of equation (3) like, for example, the inclusion of an intercept. The results are not reported for sake of space limitation.

4.3 The constrained regressions

As explained earlier, two sets of constrained regressions are performed. The regression coefficients of Sicomi assets are first assumed to be equal to their non-Sicomi counterparts up to a proportional factor. This constraint is imposed on all the coefficients excepted the fixed assets[3]. To account for a potentially higher effective tax factor in periods of inflation, all Sicomi variables are multiplied by a scalar ranging from 1.28 to 3. The lower bound is suggested by corporate taxation and the proportional factor discussed above while the upper bound range is consistent with the unconstrained estimates (see Table 2). For each year in the 1971-1981 period, the cross-sectional regression

$$MV_{it} = \alpha_{0t}\, FA_{it} + \alpha_{0t}^{s}\, FA_{it}^{s} + \alpha_{1t}\, CRE_{it} + \alpha_{2t}\, TR_{it} + \alpha_{3t}\, PORT_{it} + \alpha_{4t}\, DEDE_{it} + \alpha_{5t}\, TEDE_{it} + \alpha_{6t}\, SADE_{it} + \varepsilon_{it}, \quad (5)$$

$$\forall i \in [1, N_t],\ \forall t \in [1971, 1981],$$

---

1 This hypothesis is tested by pooling the 11 years of data and by adding dummy variables for all the variables in the 1974-1981 subperiod.

2 This coefficient increases in 1978, the only year inflation and long-term rates decreased.

3 The leasing activity of Sicomis may justify a different valuation factor.

is run. The results obtained with the two extreme values of the scalar, 1.28 and 3, are reported in Tables 3a and 3b respectively.

Insert Tables 3a, 3b

The first hypothesis is not testable because of the constraints imposed upon the regression coefficients. Only the last two hypotheses can be tested. The empirical evidence in Tables 3a and 3b support the previous findings. Namely, a significant drop in the coefficient of the treasury assets is observed after 1974. Also, the regression coefficient of the demand deposits is smaller than its treasury assets counterpart, although the difference is not statistically significant. These inferences are robust to the choice of any intermediary value of the scalar between 1.28 and 3. An increase in the tax scalar produces a decrease in the coefficients estimates of non Sicomi banks. This result is consistent with the unconstrained regressions (See Table 2).

Constraints on the time stationarity of the coefficients are then imposed. Instead of running one cross-sectional regression per year, several years of data are pooled. Two time series cross sectional regressions are performed, one for each of the two 1971-1973 and 1974-1981 sub-periods[1]. This, however, is likely to introduce a new econometric problem. The assumption of serially uncorrelated residuals is not tenable, since a bank performing well in one year is likely to do well in another year. To correct the standard error estimates for the regression parameters for serially correlated residuals, the seemingly unrelated regression (SUR) approach of Zellner (1962) is used and equality constraints are imposed on the regression parameters, ie,

$$\alpha_{ijt} = \alpha_{ijt+1}, \qquad \begin{array}{c} \forall t \in [1971 - 1973] \\ \text{or} \\ \forall t \in [1974 - 1980]. \end{array}$$

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1 The partitioning of the data into these two particular sub periods is rather arbitrary. A less ad hoc procedure would have been to use the switching regression of Quandt (1972). However, the small sample size i.e., 11 years of data, prevented us from using this methodology.

In each of the two subperiods, the following time-series cross-sectional regression is run,

$$MV_{it} = \alpha_{0t} FA_{it} + \alpha^{s}_{0t} FA^{s}_{it} + \alpha_{1t} CRE_{it} + \alpha_{2t} TR_{it} + \alpha_{3t} PORT_{it} + \alpha_{4t} DEDE_{it} + \alpha_{5t} TEDE_{it} + \alpha_{6t} SADE_{it} + \varepsilon_{it}, \quad (6)$$

$$\forall i \in [1, N_t], \text{ and } \forall t \in [1971\text{-}1973] \text{ or } [1974\text{-}1981].$$

The tax scalar is set equal to 1.28 in the first sub-period 1971-1973 and to 3 in the higher inflation subperiod 1974-1981. The results are reported in Table 4.

Insert Table 4

Though not reported, the residuals are found to be highly serially correlated in both subperiods. Also, as expected, the statistical significance of the SUR estimates is substantially higher than that of the OLS estimates. The most important result concerns the test of the third hypothesis (regulation). Unlike the results obtained in the previous regressions, the demand deposit coefficient is lower than the treasury asset one in the 1974-1981 subperiod, and most importantly the difference is found statistically significant[1]. This result is consistent with the stock market attributing a rent to the demand deposits on which a zero interest rate regulation applies.

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1 This result would not hold if a tax scalar of 1.28 was used during the subperiod 1974-1981. Since the market value of Sicomi banks is relatively higher than the one on non-sicomis in periods of inflation, a too small tax scalar induces high parameter estimates for assets (liabilities) specific to sicomis and low estimates for assets (liabilities) specific to non-sicomis, such as demand deposits. The scalar of 3 is preferred in the inflation period to avoid a bias against the demand deposit coefficient estimate.

5. Conclusions

An asset-liability analysis of the market value of the equity of banks is a promising method to infer market valuation factor of various assets and liabilities and also to assess the importance of rents. The model is empirically tested on a sample that contains the French banks listed on a Stock Exchange. Three hypotheses pertaining to the negative effect of corporate taxation and inflation and to the positive effect of regulation on demand deposit rates are examined. The empirical evidence indicates that all assets and liabilities subject to taxation are priced at a lower value from 1974 on and that demand deposits benefited from rents.

The simple model developed in this paper can be improved from several standpoints. Future research could, for instance, attempt to incorporate the value of the implicit put option granted by the French deposit insurance system.

References:

Aharony Joseph, Anthony Saunders and Itzhak Swary: "The Effects of the International Banking Act on Domestic Bank Profitability and Risk", Journal of Money, Credit and Banking, 17 (November 1985), 493-506.

Belsley, D.A., E. Kuh and R.E. Welsch: "Regression Diagnostics: Identifying Influential Data and Sources of Collinearity", Wiley Series in Probability and Mathematical Statistics, John Wiley and Sons, New York, (1980).

Bruner Robert F. and John M. Simms: " The International Debt Crisis and Bank Security Returns in 1982", Journal of Money, Credit and Banking, 19 (February 1985), 46-55.

Cornell Bradford and Alan C. Shapiro: "The Reaction of Bank Stock Prices to the International Debt Crisis", Journal of Banking and Finance, 10, (1986), 55-73.

Dann Larry Y. and Christopher M. James: "An Analysis of the Impact of Deposit Rate Ceilings on the Market Value of Thrift Institutions", Journal of Finance, 37 (December 1982), 1259-1275.

Dermine Jean: "Inflation, Taxes and Banks' Market Values", Journal of Business, Finance and Accounting, 12 (Spring 1985), 65-73.

Dermine Jean: "Deposit Rate, Credit Rate and Bank Capital, the Klein-Monti Model Revisited", Journal of Banking and Finance, 10 (1986), 99-114.

Ernst and Whinney: International Bank Accounting, Euromoney Publications, London, 1985.

Flannery Mark J. and Christopher M. James: "The Effect of Interest Rate Changes in the Common Stock of Financial Institutions", Journal of Finance, 39 (September 1984), 1141-1153.

Flannery Mark J. and Christopher M. James: "Market Evidence on the Effective Maturities of Bank Assets and Liabilities", Journal of Money, Credit and Banking, (November 1984), 435-445.

Hester Donald D.: "Income and Interest Rates at Weekly Reporting Banks, an Exercise in Disequilibrium Analysis", Working Paper 7920, Social Research Unit, University of Wisconsin, July 1979.

James Christopher: "An Analysis of Intra Industry Difference in the Effect of Regulations, the Case of Deposit Rate Ceilings", Journal of Monetary Economics, 12, 1983, 417-432.

Klein Michael A.: "A Theory of the Banking Firm, Journal of Money, Credit and Banking 3, (May 1971), 205-218.

Kyle Steven C. and Jeffrey D. Sachs: "Developing Country Debt and the Market Value of Large Commercial Banks", NBER Working Paper 1470, 1984, 1-14.

Lindenberg Eric B. and Stephan A. Ross: "Tobin's q and Industrial Organization", Journal of Business, 54 (January 1981), 1-32.

Maisel Sherman J.: Risk and Capital Adequacy in Commercial Banks, The University of Chicago Press, 1981.

Monti Mario: "Deposits, Credit and Interest Rate Determination under Alternative Bank Objective Functions" in Mathematical Methods in Investment and Finance, Shell-Szego (eds.), North Holland, 1972, 431-454.

Okun Arthur M.: Prices and Quantities, a Macroeconomic Analysis, the Brookings Institutions, 1981.

Pelzman Sam: "Bank Stock Prices and the Effect of Regulation on the Banking Structure", The Journal of Business, 41 (October 1968), 413-430.

Penaud Raymond: Les Institutions Financières Françaises, Banque ed., Paris, 1985.

Pène Didier: "Va-t-on vers l'apparition d'un effet de levier des fonds propres ?", Revue Banque, May 1983, 571-480.

Quandt, R: "A New Approach to Estimating Switching Regressions", Journal of the American Statistical Association, 1972, 67, 306-310.

Smirloch Michael, Thomas Gilligan and William Marshall: "Tobin's q and the Structure Performance Relationship", American Economic Review, 74 (December 1984), 1051-1060.

Ratti Ronald A.: "Bank Attitude Towards Risk, Implicit Rates of Interest and the Behavior of an Index of Risk Aversion for Commercial Banks", Quarterly Journal of Economics, September 1980, 309-331.

Tobin James: "A General Equilibrium Approach to Monetary Theory", Journal of Money, Credit and Banking, 1969, 15-29

Unal Haluk and Edward J. Kane: "Two Approaches to Assessing the Interest Rate Sensitivity of Deposit - Institutions' Equity Returns", WPS 86-125, College of Business, Ohio State University, 1986.

White, H.: "A Heteroskedasticity Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity", Econometrica, 48, 1980, 817-838.

Zellner, A.: "An Efficient Method of Estimating Seemingly Unrelated Regressions and Tests for Aggregation Bias", Journal of the American Statistical Association, 57, (June 1962), 348-368.

Table One: Interest Margins on Demand, Term and Savings Deposits (in %)

End of year	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Interbank rate	6.29	5.51	9.13	13.02	7.84	8.69	9.22	8.16	9.48	12.2	15.26
Margin on demand deposit	5.66	4.96	7.85	10.8	7.68	8.52	9.03	7.83	9.1	11.4	14.6
Margin on one month-term deposit[a]	4.0	3.23	6.7	9.5	4.84	5.69	6.7	5.66	6.98	8.6	11.7
Margin on savings deposits	3.5	2.7	6.2	9.5	4.6	5.44	5.97	4.91	6.23	8.9	11.9

Source: Interbank market rate (International Financial Statistics, line 60 bs); margin on deposits net of reserve requirements (Bulletin Trimestriel de la Banque de France, Tables 31 A and 34)

a) In the period 1969-1975, interest rates on term deposits are free when one of the two conditions are met: more than one year maturity, or more than a month maturity and deposits larger than FF 100,000. These restrictions are respectively 2 years and FF 200,000 in the period 1975-1979 and one year and FF 100,000 in the period 1979-1981.

Table Two: Estimates and Statistical Significance (t-statistics) of the parameters of the unconstrained cross-sectional regression (equation 3)

	N	R^2	FA	FA^s	CRE	CRE^s	PORT	$PORT^s$	TR	TR^s	DEDE	TEDE	SADE	F-TEST(H_0^1) p-val(1)	F-TEST(H_0^3) p-val(2)
1971	**47**	**.90**	**.28**	**.99**	**.76**	**-.61**	**.71**	**.68**	**.87**	**.92**	**-.86**	**-.68**	**-.65**	**.04**	**.002**
			.3	13.1	5.7	-.7	5.1	3.5	5.8	4.6	-4.5	-3.3	-1.7	.84	.96
1972	**47**	**.86**	**.38**	**1.12**	**.80**	**-.22**	**.81**	**1.12**	**.76**	**1.11**	**-.77**	**-.68**	**-.94**	**1.3**	**.006**
			.3	8.5	4.8	-.2	3.5	3.5	3.8	4.6	-3.3	-2.2	-1.9	.26	.94
1973	**52**	**.95**	**.31**	**1.15**	**.85**	**.99**	**.76**	**1.07**	**.78**	**1.18**	**-.85**	**-.94**	**-.76**	**5.07**	**.052**
			.7	13.7	7.7	2.3	6.1	6.1	5.5	8.7	-5.1	-5.4	-2.8	.03	.47
1974	**50**	**.94**	**.47**	**.86**	**.47**	**.80**	**.44**	**.77**	**.43**	**.90**	**-.42**	**-.55**	**-.44**	**.14**	**.000**
			1.6	14.8	3.6	2.8	2.3	6.8	2.5	6.6	-2.1	-2.9	-1.3	.03	.99
1975	**50**	**.93**	**.33**	**.88**	**.27**	**.41**	**.07**	**.77**	**.24**	**.78**	**-.15**	**-.26**	**-.62**	**6.9**	**.045**
			1.2	12.2	2.0	1.1	.4	5.1	1.5	5.9	-.6	-1.4	-1.8	.01	.50
1976	**52**	**.95**	**.87**	**.91**	**.27**	**-.02**	**.18**	**.78**	**.25**	**.82**	**-.24**	**-.28**	**-.37**	**9.1**	**.01**
			3.0	11.0	2.4	-.07	1.1	5.5	1.8	5.8	-1.3	-1.9	-1.5	.004	.90
1977	**52**	**.95**	**.65**	**.96**	**.22**	**-.45**	**.15**	**.92**	**.22**	**.91**	**-.19**	**-.17**	**-.4**	**15.2**	**.16**
			2.1	11.7	2.3	-.7	1.1	6.4	1.9	6.9	-1.1	-1.2	-1.8	.004	.69
1978	**51**	**.93**	**.25**	**1.37**	**.88**	**-1.9**	**.55**	**1.4**	**.91**	**.9**	**-.9**	**-1.01**	**-.63**	**.002**	**.01**
			.26	12.1	3.8	-1.4	1.4	7.2	3.4	4	-3	-3.9	-1.1	.97	.90
1979	**53**	**.96**	**1.17**	**1.61**	**.29**	**-6**	**.25**	**2**	**.28**	**1.3**	**-.18**	**-.25**	**-.56**	**12.9**	**.05**
			1.6	16.0	1.3	-3.2	.8	11.1	1.16	7.3	-.65	-.79	-1.3	.001	.48
1980	**52**	**.97**	**1.1**	**1.4**	**.22**	**-7.0**	**.15**	**1.87**	**.21**	**.97**	**-.10**	**-.18**	**-.56**	**9.07**	**1.16**
			2.4	16.1	1.1	-3.6	.6	12.7	.97	5.8	-.4	-.70	-1.9	.004	.29
1981	**51**	**.96**	**.84**	**1.09**	**.26**	**-1.2**	**.21**	**1.29**	**.26**	**1.05**	**-.17**	**-.28**	**-.48**	**13.5**	**2.2**
			2.1	16	1.6	-1.0	1.1	11.7	1.4	7.9	-.8	-1.3	-2.2	.001	.15

Notation: FA=Fixed Assets, CRE=Loan, PORT=Long Term Investment, TR=Net Treasury Assets, DEDE=Demand Deposit, TEDE=Term Deposit, SADE=Sav Deposit

Remarks: (1) The F statistic tests the null hypothesis $H_0^1: \alpha_{2t} = \alpha_{2t}^s \quad \forall\, t \in (1971,1981]$ (Taxation hypothesis)

(2) The F statistic tests the null hypothesis $H_0^3: |\alpha_{4t}| = \alpha_{2t} \quad \forall\, t \in (1971,1981]$ (Regulation hypothesis).

Table 3a: Estimates and Statistical Significance (t-statistics) of the constrained cross-sectional regression (equation 5) : Tax scalar of 1.28

	N	R^2	FA	FA^s	CRE	PORT	TR	DEDE	TEDE	SADE	F-TEST(H_0^3) p-val[1]
1971	47	.90	.76	.95	.64	.57	.75	-.72	-.54	-.68	.07
			.8	17.6	6.1	5.8	7.2	-4.5	-3.2	-1.7	.79
1972	47	.87	.42	1.04	.79	.78	.77	-.76	-.70	-.96	.001
			.4	12.9	6.1	4.9	6.1	-4.2	-2.7	-2.0	.98
1973	52	.95	.13	1.13	.90	.81	.87	-.95	-.92	-.78	.69
			.35	22.5	12.5	10.4	10.3	-8.0	-6.5	-2.9	.41
1974	50	.94	.32	.85	.61	.60	.62	-.62	-.71	-.49	.001
			1.2	18.2	10	7.9	8	-5.2	-5.3	-1.6	.97
1975	50	.93	.17	.79	.50	.45	.53	-.53	-.51	-.47	.002
			.6	13	6.8	4.6	6.2	-3.2	-3.5	-1.3	.96
1976	52	.95	.90	.78	.42	.43	.46	-.49	-.46	-.35	.07
			3	14.3	6.5	5.4	5.9	-3.7	-3.8	-1.4	.79
1977	52	.94	.74	.78	.43	.48	.50	-.52	-.44	-.37	.06
			2.3	13.4	6.0	5.7	5.9	-3.8	-3.6	-1.5	.81
1978	51	.93	.77	1.31	.77	1.06	.76	-.79	-.90	-.05	.05
			.8	12.3	4.8	6.9	4.5	-3.5	-4.1	-.12	.83
1979	53	.94	1.46	1.32	.72	1.19	.71	-.61	-.75	-.56	.37
			1.7	13.2	5	7.8	4.9	-2.7	-2.8	-1.2	.55
1980	52	.95	1.28	1.17	.61	1.12	.59	-.49	-.61	-.44	.63
			2.1	12.5	4.5	8.5	4	-2.6	-2.9	-1.2	.43
1981	51	.95	.86	1.0	.70	.88	.72	-.66	-.75	-.54	.67
			1.9	13.5	6.9	9.3	6.5	-4.8	-4.4	-2.3	.42

Notation: FA=Fixed Assets, CRE=Loan, PORT=Long Term Investment, TR=Net Treasury Assets, DEDE=Demand Deposit, TEDE=Term Deposit, SADE=Sav Deposit

Remarks: (1) The F statistic tests the null hypothesis H_0^3: $|\alpha_{4t}| = \alpha_{2t}$ $\forall$ t ε [1971,1981] (Regulation hypothesis).

- The F statistic testing the null hypothesis H_0^1: $\alpha_{2t} = \alpha_{2t}^s$ $\forall$ [1971,1981] cannot be computed because of the constraint imposed on the parameters. (Taxation hypothesis).
- The F statistic testing the null hypotheses H_0^2: $\alpha_2(74\text{-}81) = \alpha_2(71\text{-}73)$ is equal to 7.99 and has p-value of .005 (inflation hypothesis).

Table 3b: Estimates and statistical significance (t-statistics) of the constrained cross-sectional regression (equation 5) Tax scalar of 3.0

	N	R^2	FA	FA^s	CRE	PORT	TR	DEDE	TEDE	SADE	F-TEST(H_0^3) p-val[1]
1971	47	.86	1.9	.94	.33	.25	.37	-.29	-.15	-.70	.26
			1.9	13.5	3.4	3.7	5.4	-1.9	-9.6	-1.5	.61
1972	47	.84	1.3	1.09	.52	.38	.38	-.38	-.37	-1.03	.000
			1.09	10.1	4.7	4.06	5.22	-2.4	-1.6	-2.1	.995
1973	52	.94	.91	1.14	.51	.36	.39	-.47	-.39	-.63	.53
			2.3	17.4	9.7	7.7	8.4	-4.4	-4.1	-2.2	.47
1974	50	.94	.54	.86	.35	.26	.30	-.26	-.39	-.50	.14
			2.1	17.2	8.9	7.3	7.3	-2.7	-3.4	-1.6	.71
1975	50	.93	.34	.82	.29	.22	.25	-.15	-.30	-.59	.75
			1.3	12.6	6.1	4.7	6.6	-1.2	-2.3	-1.7	.39
1976	52	.95	1	.8	.23	.20	.23	-.18	-.24	-.37	.26
			3.6	13.4	5.5	5.4	5.7	-1.9	-2.4	-1.6	.61
1977	52	.95	.77	.87	.26	.26	.28	-.24	-.25	-.39	.21
			2.8	14.2	5.8	6.9	7	-2.6	-2.8	-1.8	.65
1978	51	.94	.65	1.49	.45	.56	.42	-.44	-.60	-.002	.03
			.8	13.3	5.6	8.3	5.6	-3.1	-5.4	-.006	.86
1979	53	.95	1.46	1.45	.35	.57	.34	-.25	-.27	-.48	.36
			1.9	14	4.7	8.9	5.4	-1.6	-1.4	-1.2	.55
1980	52	.96	1.26	1.22	.28	.53	.26	-.17	-.21	-.42	.71
			2.3	12.8	4.2	9.8	4	-1.4	-1.3	-1.4	.40
1981	51	.96	.88	1.1	.36	.43	.36	-.28	-.35	-.46	1.54
			2.2	14.8	7.3	11	7.6	-3.6	-2.9	-2.3	.22

Notation: FA=Fixed Assets, CRE=Loan, PORT=Long Term Investment, TR=Net Treasury Assets, DEDE=Demand Deposit, TEDE=Term Deposit, SADE=Savings Deposit

Remarks: (1) The F statistic tests the null hypothesis H_0^3: $|\alpha_{4t}| = \alpha_{2t}$ $\forall$ t ε [1971,1981] (Regulation hypothesis).

- The F statistic testing the null hypothesis H_0^1 $\alpha_{2t} = \alpha_{2t}^s$ $\forall$ [1971,1981] cannot be computed because of the constraint imposed on the parameters (Taxation hypothesis).
- The F statistic testing the null hypotheses H_0^2: $\alpha_2(74-81) = \alpha_2(71-73)$ is equal to 4.81 and has p-value of .003 (inflation hypothesis).

Table 4: SUR estimates and statistical significance (t-statistics) of the constrained cross-sectional regression (equation 6)

	N	R^2	FA	FA^s	CRE	PORT	TR	DEDE	TEDE	SADE
1971	47	.89	.89	.97	.68	.66	.69	-.72	-.66	-.57
			1.2	18.5	9.9	10.3	9.8	-6.7	-5.7	-2.4
1972	47		1.3	.96						
			1.7	16						
1973	47		.89	1						
			1.6	19.6						
1974	50	.87	1.16	.85	.26	.27	.27	-.20	-.23	-.47
			2.7	28.7	15.8	16.2	19.2	-7.0	-6.0	-5.0
1975	50		1.5	.87						
			4.1	28.2						
1976	50		.81	.89						
			3.9	30.0						
1977	50		.42	.88						
			2.3	30.5						
1978	50		.81	1.1						
			1.8	30.3						
1979	50		1.04	1.1						
			2.6	32.8						
1980	50		1.12	1.06						
			3.8	35.7						
1981	50		.88	.90						
			3.8	33.9						

Notation: FA=Fixed Assets, CRE=Loan, PORT=Long Term Investment, TR=Net Treasury Assets, DEDE=Demand Deposit, TEDE=Term Deposit, SADE=Savings Deposit

Remarks: The F statistic testing the null hypothesis H_0^3: $|\alpha_{4t}| = \alpha_{2t}$ is equal to .15 and has a p-value of .70 in the 1971-1973 subperiod. The F statistic and the p-value are equal to 6.09 and .014 in the 1974-1981 subperiod.

Appendix one: Balance sheet structure of total sample (% of total assets)

	Assets				Liabilities								
	Fixed Assets	Loans	Money Market	Long term Investment	Money Market	Demand Deposit	Term Deposit	Savings Deposits	Long Term Bond	Equity	Market Value	Tobin's q	Number of banks
	FA	**CRE**	**TRA**	**LTI**	**TRL**	**DEDE**	**TEDE**	**SADE**	**LTB**	**E**	**MV**	**Q**	**N**
71	.15	.48	.32	.04	.19	.27	.18	.05	.12	.19	.22	1.45	47
72	.2	.44	.32	.03	.22	.27	.15	.05	.11	.19	.22	1.42	47
73	.22	.44	.31	.03	.25	.23	.13	.04	.15	.18	.2	1.48	52
74	.25	.41	.3	.03	.26	.21	.15	.04	.16	.17	.17	1.02	50
75	.27	.4	.3	.02	.24	.21	.15	.04	.18	.16	.17	1.11	50
76	.3	.4	.29	.02	.25	.19	.14	.04	.2	.16	.17	1	52
77	.33	.37	.28	.02	.24	.18	.15	.04	.21	.17	.17	.9	52
78	.36	.41	.22	.02	.37	.16	.08	.04	.16	.17	.21	1.02	51
79	.34	.39	.25	.01	.39	.17	.08	.04	.16	.16	.19	1	53
80	.33	.39	.25	.01	.41	.16	.09	.04	.14	.16	.19	1.02	52
81	.35	.39	.25	.01	.41	.17	.09	.04	.13	.16	.16	.9	51

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