Preliminary Draft

Measuring Market Power in Input and Output Markets: An Empirical Application to Banking

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January 31, 2000

Abstract

This paper develops and estimates a model of market conduct in the US banking industry during the 1990s. Competition in both output and factor markets is measured in a static Cournot model in the spirit of Bresnahan (1989), Shaffer (1991,1994a), Neven and Röller (1997), and others. Banks can exert market power in loans as well as in deposit markets. Previous studies on banking competition center on the structure conduct hypothesis, where reduced form models with market concentration measures are used to estimate the degree of competition. We consider a disaggregated structural model of bank loan markets, where bank's competitive behavior is measured in input and output markets. Our results indicate that the standard model which measures only output market behavior is potentially biased.

Key words: Banking Competition; Structural Models.

JEL Classification: G2 Financial Institutions, L1 Market Structure, C3 Simultaneous Equation Models.

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[*] The views expressed are those of the authors and do not necessarily reflect the position of the U.S. Department of Justice. We wish to thank Alex Raskovitch and the participants of the Economic Analysis Group seminar at the DOJ.

1 Introduction

Banking competition has been a topic of considerable interest, especially since the early 1980s, when deposit rates were deregulated and banks were able to pay interest on demand deposits. The Riegle-Neal Act of 1994 allowed banks to branch beyond state boundaries, opening the door to interstate branching. Banks continue to move into nontraditional markets while nonbanks are offering banking services as well as changing the notion of what services a bank provides. The banking industry clearly is going through substantial changes in structure and competition. Mergers, failures and entry have resulted in a net decline in the number of banks from some 14,500 in 1980 to around 9,000 in 1996. These changes in banking industry structure and competitive environment have fueled a large literature on banking competition and productivity.

Currently, two distinct methods of analysis in banking markets are applied by the Federal Reserve and the Department of Justice. On the one hand, the Federal Reserve uses a cluster market approach, where banking services are considered jointly as a cluster of products.[1] Under this methodology, all banking products are bundled together, since consumers tend to purchase several services such as retail services, loans, and deposits from a single bank. Banking markets defined with the cluster approach are generally large and include other financial institutions such as thrifts because of their provision of many bank services.[2]. On the other hand, the Department of Justice (DOJ) applies the smallest market principle detailed in the Merger Guidelines promulgated by the DOJ and Federal Trade Commission (FTC). In the smallest market principle, a product or geographic market is defined by the ability of a hypothetical monopolist to impose a "small but significant and non transitory" price increase.[3] The resulting analysis centers on separate loan and deposit markets with relatively small geographic markets and limited scope. Small business and middle market lending are typically markets of concern in DOJ analysis. Other financial institutions are included in the analysis only if they represent a significant competitor in the individual markets.

Our study of banking competition shows evidence that the smallest market principle might be the more relevant methodology in banking. We extend

[1]The Federal Reserve often cites the Supreme Court decision of United States versus Philadelphia National Bank from 1963, which defines geographic markets in banking.

[2]Thrifts are often included in market calculations at 50% of deposits

[3]See Merger Guidelines (1997) pg. 4.

the literature by developing a disaggregated structural model of banking competition where banks can exert market power not only in separate loan markets, but also in deposit markets (where they act as potential monopsonists). Results from models of banking competition that do not disaggregate loan markets or that do not allow for monopsony power in inputs are potentially biased. To illustrate the difference in results, we compare our model to a more traditional model of banking competition, which does not include monopsony power in input markets.

We consider three different loan categories as specified in the Federal Deposit Insurance Corporation (FDIC) call reports: commercial and industrial loans provided to businesses; installment loans provided to individuals; and real estate loans, which are loans secured by real estate. It is our contention that these different loan types represent different product markets because consumers are typically not able to substitute one loan type for another. Hence, relative price changes in one type of loan do not lead to substitution into another loan type. Also, banks are able to price differentiate between customers of each type of loan. Prices are changed according to the market conditions in a specific loan market.[4] The Merger Guidelines determine product markets along these lines.[5]

Quantifying market behavior and productivity in the banking industry is still an elusive topic primarily since the appropriate data are not available. In addition, difficulties exist in defining inputs and outputs and in measuring prices. Because of these difficulties, a substantial part of the bank competition research has centered on the structure-conduct-performance relationship and, until recently, the efficient-structure hypothesis.[6] The structure-conduct-performance hypothesis posits higher profits in more concentrated markets from the exercise of market power. Conversely, the efficient-structure hypothesis[7] gives a different explanation by attributing higher profits and market concentration to higher firm efficiency. Authors typically consider

[4]Of course, common cost elements exist between the markets such as cost of federal funds and discount funds, but it is the demand side and risk that differ dramatically in these markets.

[5]Banking is not specifically mentioned in the Merger Guidelines, but product and geographic market definitions are detailed. One limitation of our results concerns geographic market definition. Because of data restrictions (banks report to FDIC only at the state level), we are not able to more narrowly define geographic markets. This overstatement of geographic markets means that our estimates are potentially downward biased. Hence, competitive concerns could be understated by our model.

[6]See Berger and Hannon (1989, 1995) and Berger (1995).

[7]See Demsetz (1973).

the effect of market concentration on prices and/or profitability. Market concentration in banking is typically measured in terms of total deposits.[8] Most studies use deposit interest rates as a measure of price or some measure of profitability such as return on assets or return on equity in their analysis. The relationship of market concentration–price analyses and Cournot models is well known.[9] Several studies of banking competition use the market concentration methodology. Gilbert (1984) surveys the previous literature on banking competition spanning two decades and finds a positive relationship between market share and profits. Others such as Berger (1995), Berger and Hannon (1989, 1991, 1997), and Hannon (1991, 1997) test both the market power and efficiency hypotheses in US banking. Berger and Hannon (1989) examine the relevance of concentration on deposit rates after deregulation in the 1980s. In a subsequent study (Berger and Hannon, 1991), they find asymmetric adjustment of deposit rates to Treasury Bill rates in concentrated markets, where banks in more concentrated markets decrease deposit rates in periods of declining overall rates more quickly than they increase them during periods of increasing interest rates. Hannon (1991, 1997) links local market concentration to higher rates on different classes of small commercial loans. This evidence might give rise to the notion that perfect competition equilibrium is not maintained in the US banking industry. On the other hand, Berger (1995) finds support for the efficient-structure hypothesis, where market concentration is associated with higher bank efficiency.

Market concentration studies lend themselves to competition analysis for several reasons. First, deposit data (by branch on a yearly basis) are readily available and can be used easily to determine market share for a relatively small sized geographic market. Second, Federal Reserve and DOJ antitrust merger analysis uses Herfindahl–Hirschman Index (HHI) market concentration measures[10] derived from deposit shares as an initial screen to determine the possible effects of a bank merger.[11] Threshold values of the

[8] The Federal Reserve and Department of Justice Antitrust Division use market concentration measured by deposits using FDIC data and recently by loans using CRA data.

[9] See Cowling and Waterson (1976) and Dansby and Willig (1979) as well as Farrell and Shapiro (1990) for a discussion of the HHI in Cournot equilibrium.

[10] The HHI is defined as the sum of squared market shares. Market shares are typically derived from deposits, because it is assumed that the level of a bank's deposits in a market is an indication of the level of its other banking services in that same market.

[11] There are some differences between the Federal Reserve and DOJ methods. First, DOJ does not include thrifts in its market share calculations, while the Fed typically includes them at 50%. Second, geographic market definitions differ. The Federal Reserve

HHI which warrant competitive concern include a HHI level of 1800 and a change in HHI of 200. Once these bounds are exceeded, the Fed and DOJ consider other factors such as entry and market growth to determine if action is necessary. Because the merger analysis relies on HHI measures of concentration, it is important to understand the relationship between prices or competition and concentration. Hence, studies that examine this relationship are directly relevant to competition policy. Furthermore, deposit shares are essentially used as a proxy for other types of banking services such as loans, cash management, underwriting, etc.. Since loan data are not as readily available as deposit data, both agencies rely on the latter for their competitive analysis.[12]

In his survey Gilbert (1984) notes that the analysis of banking competition has relied on reduced form models (such as the market concentration studies), and he advises that future work should concentrate on structural models for measuring market conduct. Other authors have followed this line of research and have introduced structural models of banking competition using the methods derived by Panzar and Rosse (1979), Panzar, Rosse, and Willig (1982) and Bresnahan (1982). Bresnahan (1982) develops a method of testing competitive behavior in industries, where demand equations are jointly estimated with marginal cost equations. These methods are also outlined in his Handbook of Industrial Organization chapter (Bresnahan, 1989) and have been applied to the banking industry by Shaffer (1989, 1993, 1994a,b), Hannan and Liang (1993), Suominen (1994), Molyneux et al. (1992) and Berg and Kim (1995). Most studies, particularly those using US data, have found little evidence of market power at the overall bank level. Suominen (1994) estimates the competitive behavior for two separate markets, aggregated loan and deposit markets. His study finds mixed results on the market behavior of Finnish banks. Berg and Kim (1995) use an index of loans to estimate a single parameter for market behavior for all outputs. Their model stresses the endogeneity of outputs and firm behavior in productivity measurement. These studies are all based on a static Cournot equilibrium. Most of these studies find no or little anticompetitive market behavior. However, almost all of them aggregate loan outputs into

tends to use MSAs to determine geographic markets, and the DOJ defines markets much more narrowly. Third, the Fed considers a bundle of banking services, while the DOJ analyzes each market individually. Hence, the DOJ considers retail banking services and individual loan markets separately.

[12]The Community Reinvestment Act (CRA) data contains detailed loan information. One significant caveat of the data is its complete lack of price information.

a single index. Since loan markets are very different in nature, this aggregation could complicate any inference on competition in the banking industry. Furthermore, these studies only consider market behavior in output markets. We find that this results in an upward bias in the market behavior parameters.[13]

This paper is structured in the following manner. Section 2 discusses our model of banking competition. Section 3 describes the data and section 4 discusses the results. Section 5 concludes.

2 Model

We use a model of a static Cournot game to develop a structural model of oligopoly behavior. We use a standard model of profit maximization, where banks sell loans to consumers and demand loanable funds represented by deposits.[14] It is well known that deposits could also represent banking retail services (an output) to customers. However, our aim is to determine if banks are paying competitive rates for deposits. In order to measure market monopsony power, we model retail time and savings deposits as inputs and demand deposits as outputs to indicate the level of financial services.[15] Our model is not only able to determine market behavior in output markets, but also possible monopsonist behavior in input markets. Specifically, we ask whether banks are able to increase the price of a loan and decrease the interest paid on deposits.

We start our formulation of the model by specifying the demand equations for loan j:

$$r_j^l = P_j^l(L_j, Z) \tag{1}$$

where r_j^l is the price of loan j, L_j is the quantity of loan j, and Z represents exogenous demand determinants. Banks also demand loanable funds from customers:

$$r_i^d = P_i^d(D_i, Z) \tag{2}$$

[13]Shaffer (1994a) discusses the source of this bias.

[14]This specification is similar to that of Neven and Röller (1997)

[15]Note that this distinction could be considered arbitrary. Our results are robust to the input/output specification of demand deposits.

where r_i^d is the price of deposit i, D_i is the quantity of retail time and savings deposits, and Z represents exogenous demand determinants.[16] Given product demand, we consider a representative bank n that produces loans $j = 1, \cdots, J$ and demands deposits i to maximize profits:

$$\begin{aligned} \max_{d_i, l_j} \Pi &= \max_{d_i, l_j} \sum_{j=1}^{3} r_j^l l_j - \sum_{j=1}^{2} r_i^d d_i - C\left(\{l_j\}_{j=1}^3, \{d_i\}_{i=1}^2\right), \\ \text{s.t. } r_j^l &= P_j^l(L_j, Z), \; r^d = P_i^d(D_i, Z) \text{ and} \\ \sum_{j=1}^{3} l_j &\leq \sum_{i=1}^{2} d_i \end{aligned}$$

where r_j^l is the price for loan type j, l_j is the amount of loans for loan type j for bank b, d_i is the amount of deposits for deposit type i for bank b, r_i^d is the price of retail time and savings deposits, and C(.) is the cost function, where costs are a function of the loan and deposit quantities. Given demand and cost specifications, we can write the first order conditions for the Cournot solution, where banks are offering loans on the one hand and demanding deposits on the other and banks have possible market power in deposit market i, assuming competitive market behavior in other deposit markets. Substitute in $d_1 = \sum_{j=1}^{3} l_j - d_2$, we get the following first order conditions :

$$\begin{aligned} r_j^l - r_1^d + \frac{\partial r_j^l}{\partial l_j} l_j \theta_j - MC_{l_j} &= 0 \text{ for } j = 1, 2, 3 \\ -r_2^d + r_1^d - \frac{\partial r_2^d}{\partial d_2} d_2 \lambda - MC_{d_2} &= 0 \end{aligned}$$

where MC is marginal cost with respect to loan j, and θ_j and λ measure the degree of competition. These parameters represent the price effect that a firm takes into account when it chooses its level of outputs and inputs. In output markets at the firm level, if $\theta_j = 0$, price equals marginal cost and the industry is perfectly competitive, while $\theta_j = 1$ is consistent with Cournot Nash behavior. Collusive (or monopoly) behavior occurs when

[16] The exogenous variables are the same across all demand variables, since they are variables that indicate overall interest rate level such as federal fund or treasury bill rates or that indicate a shift such as population and income.

$\theta_j = N$. In factor markets, when $\lambda = 0$, factor price equals marginal revenue product (less marginal costs) and the factor market is perfectly competitive. When $\lambda = 1$, we observe Cournot Nash behavior. Collusive (or monopsony) behavior is observed when $\lambda = N$, indicating that factor prices are less than marginal revenue product.

In order to estimate this system of equations, we make functional form assumptions for marginal costs and the demand and supply functions. We derive marginal costs from a translog cost function. The marginal costs are then imbedded in the first order conditions. We also assume semilog functional form of loan and deposit demand:

$$\begin{aligned} \ln r_j^l &= d_{j0} + d_{j1}\, l_j + d_{j2}\, Pop + d_{j3} Tbill + d_{j4} Disc \\ &+ d_{j5} Income + \epsilon_{1j} \text{ for } j = 1, 2, 3 \end{aligned} \tag{3}$$

$$\ln r_2^d = s_0 + s_1\, d_2 + s_2\, Pop + s_3 Tbill + s_4 Disc + s_5 Income + \epsilon_2 \tag{4}$$

where Pop is the population, Tbill is 3 month Treasury Bill rate, Disc is the discount rate, and Income in each specific state where a bank is located. Using these functional form assumptions and including error terms, we get the following behavioral equations:

$$r_j^l - r_1^d + d_{j1} l_j r_j^l \theta_j - \frac{c_j}{l_j} - \sum_{s=1}^{3} c_{sj} \frac{\ln(l_s)}{l_j} + \epsilon_{3j} \text{for } j = 1, 2, 3 \tag{5}$$

$$-r_2^d + r_1^d - s_1 d_2 r_2^d \lambda - \frac{cd_0}{l_j} - \sum_{s=1}^{3} cd_s \frac{\ln(l_s)}{d_2} + \epsilon_4 \tag{6}$$

These four behavioral equations are estimated jointly with loan demand equations and the deposit demand equations.

3 Data

We use a panel data set of around 70 U.S. commercial banks in California followed quarterly for the 7–year period from 1990 through 1997. The data are taken from the Report of Condition and Income (Call Report) and FDIC Summary of Deposits. In order to capture a single banking market, we consider banks in California only. The banking markets are more than likely smaller than the entire state. However, the data are collected at the bank level. Before Riegle-Neal Act, all banks were confined to states' borders. Data on smaller geographic markets are typically inputed in some manner from the state level data. We do not parse the data into smaller geographic markets.

Prices are imputed from loan and deposit revenues, where interest and fee income from loans in each category are divided by total loans[17] in each loan type. While this measure of loan prices is not optimal, we are essentially measuring revenue for each dollar loaned. These imputed prices represent an average for each bank. Deposit loan prices represent average amount paid per dollar of deposit received. All dollar figures are in thousands of 1982-84 dollars. We have deleted any observations with zero values to avoid measurement problems and boundary problems associated with logarithmic values. The resulting data set contains 1983 observations with 154 banks in California.

The variables in our data include: P^{re} preln = Price of Real Estate Loans, P^{ci} pciln = Price of Commercial and Industrial Loans, P^{in} pinln = Price of Installment Loans, Y = reln (real estate loans), ciln (commercial and industrial loans), inln (installment loans), dd = Demand Deposits; X = L (labor), C (capital), Purf (purchased funds),[18] CD (retail time and savings deposits); $r^l_j = P^{ci}, P^{re}, P^{in}$.

4 Results

We estimated equations 3 − 6 using iterated nonlinear three stage least squares. Tables (1), (2) and (3) show the results for the demand and supply equations and the first order equations (See demand equations 3 and 4 and the behavioral equations 5 and 6).

We first turn to the demand estimation results. the own price coefficients for all loan types are negative as expected. Demand elasticities measured at the mean of the data range for -10.62, -2.09, to -1.29 for real estate, commercial and industrial, and installment loans respectively. Average elasticity results in somewhat different levels ranging from -11.60, -1.89, to -1.10. Loan

[17]Net of allowance and reserves.

[18]Purchased funds include federal funds purchased and securities sold under agreements to repurchase and demand notes issued to the U.S. Treasury and other borrowed money, as well as other borrowed money and deposits which are not demand deposits and retail time and savings deposits.

demand seems to be negatively correlated with 3 month Treasury Bill rates and positively correlated with discount rates and income. These results are consistent across all loan types.[19] However, the own price coefficients are different enough to warrant disaggregating loan markets. Marginal costs for all outputs are correctly positive.

The results on the loan and deposit market behavioral parameters are located in Table (2). The market parameter for all loan types are all significantly different from 0 and are greater than 1. Interesting enough, we find that the values of θ for commercial and industrial loans and real estate loans are high in magnitude, with values of 22.16 and 61.99. The installment market parameter estimate lies at 7.21, somewhat smaller in magnitude and is also significantly different from 1 at the 1% level. We also test noncooperative Nash behavior and find that the values of θ are significantly different from 1 at the 1% level. These estimates indicate that market behavior in these loan markets is not very competitive. The higher parameter estimate in real estate markets is particularly interesting because of the existence of other competitors such as mortgage lending companies. Such financial institutions are not prevalent in commercial and industrial loan markets, where banks are the primary providers of such credit.

Estimation of the model using data from other states exhibits similar results with slight variations in the magnitudes, but the same overall trends. However, results using data from all states or from groups of states differ dramatically than those for individual states. Market behavior coefficients are much lower in magnitude and seem to indicate a fairly competitive market. However, since the market behavior parameters increase significantly as the geographic markets become more localized, we find that the data support at the most a state level geographic market and most likely a more confining geographic market.[20]

Commercial and industrial loans, especially small business (loans up to $1,000,000) and middle market loans (loans up to$10,000,000), are of considerable interest in the antitrust analysis of DOJ. This is because small businesses typically do not want travel very far to obtain credit. They rely on the banks with branches close to them, because of their close proximity and also because these banks are able to obtain more information about the small business. This additional information allows the banks to better judge

[19]Except for installment loans, where the discount rate shows an insignificant negative coefficient

[20]Since the data are collected at the state level, it is difficult to obtain data for more local markets without using some form of imputation.

the risk of the local small business. Hence, the propensity for market power is larger, because competition in small business markets is localized.[21] Unfortunately, we are unable to separate out the data for these loan markets and for smaller geographic areas. However, our results indicate that these antitrust concerns are warranted, since the parameter estimates point to a noncompetitive equilibrium.

Interestingly enough, the deposit market coefficient seems to exhibit a value of 22.13. This coefficient is significantly different from 0 (at the 1% level) and significantly different from Nash behavior. This result is surprising since a wide variety of financial institutions offer a variety of similar products with varying levels of return and liquidity that compete directly with savings deposits. More importantly, many types of financial institutions such as savings and loans associations and credit unions exist that offer the same product as commercial banks. While these financial institutions are not included in our data, they don't seem to exert competitive restraints on banks to lower deposit rates below competitive levels. These restraints do not apply in commercial and industrial lending, since these financial institutions tend not to lend in those markets.

The estimated mark-ups for the loan markets were , 0.84, 1.52, and 0.81 percentage points respectively for real estate loans, commercial and industrial loans, and installment loans. These mark-ups represent a relative mark-up to the mean price for each loan of 15%, 24%, and 11% respectively. Estimated mark-down in retail time and savings markets is 0.73 percentage points or 22%.

Finally, to check the robustness of our results and to illustrate the possible bias of simpler models, which do not account for monopsony power, we estimated another model, where no monopsony power is measured ($\lambda = 0$). The results are located in table (3). This model resulted in significantly different measures of market behavior. Estimated market behavior parameters are 126.22, 26.53, and 15.89 for real estate loans, commercial and industrial loans, and installment loans respectively. Notice that all estimated behavioral parameters are significantly larger in magnitude.[22] The simple model indicates that markups above marginal costs are significantly greater than in the more complex model.

Shaffer (1994a) shows that a model, which does not account for monop-

[21] See Rhoades (1996) for a discussion of small business loans in antitrust analysis.

[22] While the market behavior parameter for real estate loans is significantly larger than in the more complex model, it is also insignificant.

sony power, will result in an upward bias in the market behavior parameters. A model which does not account for monopsony power in input markets will attribute all market power to the output markets. Our results reveal this apparent bias in simple models of competition (i.e. models which do not account for monopsony power).

5 Conclusion

This paper introduces a structural model of banking competition that measures the Nash behavior of banks in output (loans) and input (deposits) markets. Our results parallel those in other studies which use the structure–conduct–performance and the efficient–structure–hypothesis (Berger, 1995) methodologies as well as the "new empirical industrial organization" models of Shaffer (1989, 1993,1994a,b) and others. We find that Nash and possibly collusive behavior arises in the four markets we considered. These include commercial and industrial loans, real estate loan markets, installment loan markets, and retail time and savings markets. Our results differ markedly from a model that does not allow for monopsony power in retail time and savings markets.

Our results differ from those with aggregated loan markets, where the competitive behavior in separate and independent loan markets are possibly blurred by the aggregation of the markets. Aggregated models implicitly assume marginal costs and demand elasticities across all loan markets are equal. In an industry where marginal costs (i.e. loan processing and management) could differ by loan type and where, more importantly, demand elasticities could differ, it is sensible to estimate a structural model that differentiates between product types, since the competitive behavior in each market will differ according to the possibly differing demand elasticities. Our results show that aggregation of product markets could blurred and any inference misleading. Hence, inference obtained by using cluster markets could possibly be misleading. An analysis which uses disaggregated market data seems to reveal more insight into the competitive nature of individual markets, which can differ dramatically as is evident by our results.

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Table 1: Demand and Supply Equation Estimates

Demand Equations					
Variable	Parameter	Estimate	Approx. Std Err	'T' Ratio	Approx. Prob $\|T\|$
Real Estate Loans					
Constant	d_{10}	-7.35	0.94	7.85	0.0001
Price	d_{11}	-8.90E-10	3.11E-10	-2.86	0.0043
Population	d_{12}	-0.00011	0.000017	-6.83	0.0001
Tbill Rate	d_{13}	-22.12	3.12	-7.09	0.0001
Discount Rate	d_{14}	12.08	3.42	3.52	0.0001
State Income	d_{15}	0.81	0.50	16.37	0.0001
Commercial and Industrial Loans					
Constant	d_{20}	-8.83	0.93	9.44	0.0001
Price	d_{21}	-7.99E-9	5.16E-10	-15.47	0.0001
Population	d_{22}	-0.00011	0.000017	-6.43	0.0001
Tbill Rate	d_{23}	-23.77	3.12	-7.63	0.0001
Discount Rate	d_{24}	18.37	3.45	5.34	0.0001
State Income	d_{25}	0.89	0.049	18.03	0.0001
Installment loans					
Constant	d_{30}	7.61	0.99	7.67	0.0001
Price	d_{31}	-3.33E-8	1.29E-9	-25.88	0.0001
Population	d_{32}	-0.00045	0.000019	-23.88	0.0001
Tbill Rate	d_{33}	-15.05	3.25	-4.63	0.0001
Discount Rate	d_{34}	-5.54	3.55	1.56	0.1192
State Income	d_{35}	0.63	0.051	12.34	0.0001
Bank Demand for Savings Deposit Accounts					
Constant	s_1	-5.52	0.90	-6.16	0.0001
Price	s_2	-1.05E-08	1.44	-7.31	0.0001
Population	s_3	-0.00032	0.000018	-18.06	0.0001
Tbill Rate	s_4	-41.52	3.05	-13.61	0.0001
Discount Rate	s_5	35.06	3.44	10.20	0.0001
State Income	d_{35}	1.07	0.047	22.85	0.0001

Table 2: Market Conduct Measures - Model 1

Market Parameter	Parameter	Approx. Estimate	'T' Std Err	Approx. Ratio	Prob > $\|T\|$
Real Estate Loans	θ_1	61.99	22.00	2.82	0.0049
Commercial and Industrial Loans	θ_2	22.16	2.86	7.76	0.0001
Installment Loans	θ_3	7.21	0.74	9.69	0.0001
Deposits	λ	22.13	3.29	6.72	0.0001

Table 3: Market Conduct Measures - Simple Model

Market Parameter	Parameter	Approx. Estimate	'T' Std Err	Approx. Ratio	Prob > $\|T\|$
Real Estate Loans	θ_1	126.22	105.72	1.19	0.2327
Commercial and Industrial Loans	θ_2	26.53	4.83	5.49	0.0001
Installment Loans	θ_3	15.89	1.73	9.18	0.0001