ISSN 0871-2573

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Working Paper n° 294
May 21, 1997

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Abstract

With this paper we aim to explore the combined effect of privatisations and declining banking market concentration on the bargaining process between Portuguese banks and unions of bankers. Overall, although the change in ownership should be expected to generate a more shareholder revenue oriented management, and thus motivate a tougher negotiation stance by the banks, results indicate that it were the bankers and their unions who gained bargaining power during the deregulation period of 1991–94. In our view, such result is explained by the increased competitiveness that the changes in the banking market structure had on the market for skilled bankers. In other words, declining concentration not only increased the competitiveness in the market for banking products, but also in the market for this banking input.

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*We benefited from the financial support of JNICT, under the grant ECO619/93. The views expressed are those of the authors. The usual disclaimer applies.

1 Introduction

Bankers' unions have emerged from the revolutionary period (1974–75) in Portugal among the wealthiest, strongest and better organised in the country. They succeeded to substantially increase their members' social benefits, which already were among the best within the Portuguese working population. In particular, they negotiated above-average salaries and generous pension complements. But probably, they became particularly well-known for the quality of their private medical assistance, which was substantially funded by the banks. These factors made the banking profession a particularly attractive one and allow to qualify these unions as particularly powerful at the negotiations table. This conclusion becomes reinforced by the fact that, for more than a decade, the banking industry could be characterised as a cartel of nationalised banks.

During the subsequent period (1976-85) the Portuguese Association of Banks negotiated yearly with the unions a wage table for the bankers and everybody in this industry was paid according to it.

Deregulation and privatisation in the late 80s have considerably changed the scenery in the banking sector. Liberalisation has resulted in more competitive pressures and privatisation has changed ownership of banks. The number of banks and bank branches rose and market concentration sharply declined in this period. During this deregulation phase, bank competition has significantly increased and resulted in declining margins and profitability. This, combined with the existence of private shareholders demanding an adequate rate of return (something new for most institutions) leads to the conclusion that in this period banks should be expected to have been harder at the negotiations table than they were before. However, privatisations and the increase in the number of banks had a signifficant impact on the demand for labour, especially for skilled bankers. For the latter, the payment of above standard wages and other fringe benefits became a common practice by the banks. And thus, the tables negotiated between the banks and the unions were no longer applied to an increasing number of people, an indication that banks may have been losing market power in the labour market.

Thus, two contradicting forces were present in this period. Interestingly, both are a direct consequence of liberalisation and declining market concentration. The first leads to the expectation of increased bargaining power for banks, while the second leads to the opposite conclusion. With this paper we aim to evaluate which force has dominated during the deregulation phase of 1991-94: The need for earning shareholder revenue under declining industry profitability or the increased competition in the market for skilled workers. Our approach

to the wage-setting process for empirical purposes is to assume a particular solution for the bargaining problem, the Nash bargaining solution. Estimation of the structural form of the equilibrium condition allows us to assess the evolution of the bargaining process between banks and workers.

The paper is organized as follows. In Section 2, a brief overview of recent evolution of the Portuguese banking market is presented. Section 3 introduces a simple wage bargaining model. Next, Section 4 discusses the data and econometric procedures and reports estimates for its parameters. Section 5 concludes the paper.

2 Overview of the Portuguese banking sector

The Portuguese banking sector undergone significant transformations in the last thirty years. Before the 1974 Revolution, banking was highly regulated and predominantly hold by the private sector. In 1975 all banks and insurance companies were nationalised, with the exception of the foreign owned. In this period the independence of the Portuguese colonies in Africa, combined with the passing of strict labour laws severely restricting companies from firing people, made the banking system to absorb all its former colonial employees. This, combined with the consequences of the good results achieved by the unions at the negotiations, made the Portuguese banks suffer from exceptionally high labour and administrative costs.

The revolution had also an important impact on bank market structure and regulation. Strict international capital controls together with an absolute barrier to entry in the banking sector made it virtually protected against any external threat. All banks but three small foreign-owned institutions were owned by the Government which accounted for more than 95% of the market with just 11 individual banks.

Interest rate regulation persisted until the early 1990's, with the administrative imposition of a minimum rate on time deposits (to encourage savings) which was progressively reduced and later removed, a maximum rate on demand deposits (to protect the less efficient institutions) and a maximum rate on loans (to prevent "usury").

Entry in this market was banned until the approval of the Constitutional Amendment of 1984. Nevertheless, several barriers to entry persisted after that and the new banks took some time to be approved. Branch expansion continued under strict controls and interest rate regulation persisted. In 1985 one finance institution was changed to bank status and in 1986 only three new Portuguese private banks were authorised. New foreign banks were progressively authorised but remained small. By mid 1989, the Government was still the

owner of banks representing 90% of the market. In 1989 the (slow) privatisation process was initiated which combined with the growing agressivity of some private banks led the Government's market share to fall to about 45% in 1993. Market concentration significantly declined and the market became increasingly competitive.

All the remaining restrictions were abolished in December 1992. On that date, a new banking law implementing the Second Banking Directive of the European Union was passed and all banks had to comply with the 8% risk-asset solvency ratio. In a few words, these banks who lived under a highly regulated framework which allowed the existence of a virtual cartel where inefficiency was not punished, found themselves operating under the same rules of all other European banks.

The period 1995-96 witnessed the reversion of the fall in concentration trend. Some private and privatised banks were sucessfull in their bids for banks under privatisation programmes and a concentration movement has begun. At the end of 1996, the market was completely dominated by five banking groups, accounting for more than 80% of the market. This groups are today under restructuring, consolidating activities and eliminating duplicated departments. Consequently, new admissions in the banking sector are now severely restrained while early retirement and even firing of surplus staff are now in today's agenda for most of this groups. Total value added generated by the banking sector increased significantly during the interest rate deregulation period (1985-91), which, together with an increase in profitability in the late 80's, seems to indicate that binding interest rate ceilings (and floors) were preventing banks from maximising profits. In our sample period, in the early 90's, total value added in the banking sector experienced negative real growth rates, as a direct consequence of increased competitiveness. However, labour costs continued to rise during that period, despite a slight reduction in the total number of bankers. Thus, the share of labour costs in total banking value added increased in this period. The restructuring currently taking place in this industry is a clear indication that banks are not happy with the situation, therefore making particularly interesting the bargaining process in this sector.

3 The bargaining model

To describe the wage negotiation process, the Nash solution concept to bargaining is adopted. The setup considers a bargaining process between bank managers (acting as perfect agents for shareholders) and bankers. Bank managers are assumed to have the simple aim of profit maximization. On the other hand, bankers try to maximize the average wage inside a bank.

Banks act as Nash competitors in the product market. Moreover, when deciding wage schedules they take other banks' pricing policies as given.[1] In a more rigorous way, a possible timing of the game is as follows: banks decide on the wage structure. This decision is not observed by other banks. Banks then choose interest rates, given the wage structure determined in the previous stage.

The bargaining process with workers is on the (average) wage level.[2] We assume the bargaining to take place only over the wage, leaving bank managers free to set employment levels. This approach is known in the literature as the 'right-to-manage' model (Farber, 1986).

The assumption means that banks have full discretion on employment policies to follow (only limited by national law provisions, which are in any case restrictive on the ability to fire people). This has some implications for our analysis. Banks with more qualified workers will tend to pay higher wages. Although this is certainly true, our main interest lies in variation over time, common to all banks, and not on wage variation across banks, at a given point in time. Under such perspective, the problem is less serious than it would be otherwise, namely in a cross-section variation analysis.

As stated above, we start by assuming that wages in the banking sector are endogenously determined by a Nash bargaining negotiation process. The strong implication of the Nash solution is that the only feasible solution that satisfies a set of reasonable axioms maximizes the product of the incremental utilities of players.[3] The Nash bargaining solution is defined as the solution to the following problem:

$$\mathcal{N} = \max_{w_i} (\Pi_i - \Pi_0)^{\delta} (w_i - w_0)^{1-\delta} \tag{1}$$

such that

$$\Pi_i \geq \Pi_0, w_i \geq w_0$$

where δ and $1 - \delta$ are, respectively, measures of the bargaining power of banks and workers. The values Π_0 and w_0 are a bank's profit and average wage, respectively, in case of disagreement in the negotiation process. These values are assumed to be the same for all banks. The values Π_i and w_i are the profit and average wage prevailing in equilibrium.

One criticism of the Nash bargaining solution to model wage negotiation processes is that it does not admit the possibility of strikes, a real world phenomenon. In the case of our

[1] This means banks do not see own wage policy as a direct instrument to influence rivals' pricing strategies, which seems a fairly reasonable assumption.

[2] This is in line with real life evidence, where typically unions negotiate wage increases.

[3] See Osborne and Rubinstein (1994, chapter 15), and Manning (1994, pp. 438) for a similar formulation in a wage bargaining context.

application, the absence of strikes lends some confidence on the use of the model, although we cannot say that threats of strikes have been absent from the actual negotiations.

One can think that workers also place an important weight on employment considerations, leading the analysis to an alternative model known as the 'efficient bargain' model. Although the choice of the bargaining model to be estimated is essentially arbitrary in nature, it should be mentioned that the empirical results of Card (1991) give some support to the 'right-to-manage' model but not to an alternative simple model of efficient bargain. Although one may argue that opposite evidence can be found elsewhere, the point we make is that at least empirical evidence on the predominant bargaining mode is not uniform. On the grounds of informal knowledge on the banks-union negotiation process, we consider the 'right-to-manage' model to be superior.

Consider that Π_i has a reduced form of the type

$$\Pi_i = \Pi_i(X_i) \tag{2}$$

where X_i is a vector of exogenous variables.

Assuming an interior solution for the problem, the first-order condition is

$$\frac{1-\delta}{\delta} + \frac{\partial \Pi_i}{\partial w_i} \frac{w_i - w_0}{\Pi_i - \Pi_0} = 0 \tag{3}$$

From the profit maximization problem of the bank and by the envelope theorem, we have

$$\frac{\partial \Pi_i}{\partial w_i} = -N_i \tag{4}$$

where N_i is the number of workers bank i has.

We consider that managers and shareholders care about the rate of return on equity, not absolute profits. Taking the rate of return on equity as the relevant target variable, $\Pi_0 = r_0 S_i$, where S_i denotes equity of bank i.[4]

Substituting into the first-order condition, we get the following solution for the equilibrium wage rate in bank i:

$$w_i = w_0 + \frac{1-\delta}{\delta} \frac{1}{N_i} (\Pi_i - r_0 S_i) \tag{5}$$

Additionally, we assume a linear reduced form for the profit function:

$$\Pi_i = b_0 + b_1 r_i^A + b_2 CE_i \tag{6}$$

The variable CE_i is a measure of spatial concentration of bank i operations, as previous work (Barros and Leite, 1994; Barros, 1996) has found that local markets are an important source

[4]The rate of return on equity is defined as Π_i / S_i.

of banks' market power and hence of banks' profitability. The variable r_i^A is an opportunity cost of funds to banks.

4 Econometric Results

4.1 The data and estimation procedures

The model is estimated with data from a sample of 21 banks operating in the Portuguese market, including the main institutions, over a four-year period (1991-1994). The sample covers 96% of the deposits market and 93% of the loans market. The data source were the banks accounts at the individual bank level, i.e., not at the consolidated level. Data on the money market interest rate was obtained from the Bank of Portugal. The index CE_i is computed as the weighted sum of bank i's market share defined by branches in each local market, where the weights are given by the importance of each local market for the bank, measured by the share of own branches that bank i has in that local market.[5]

The average wage rate was computed for each bank by dividing total labour costs by the yearly average number of employees. These costs include gross salaries plus the bank's contributions for pension funds and the union's private social security scheme. Thus, although eventually failing to capture some fringe benefits, this measure captures the essential of labour costs.

In this paper, we assume that banks and bankers bargain over the total value added of the bank. Consistent with this empirical approach the profit measure used is the shareholders' earned surplus, defined as the part of value added which reverts to the equity holders.

In relation to r_i^A, the opportunity cost of deposits to banks, is defined as a linear combination of the money market interest rate and the actual rate of return on reserves held by the bank.[6] One could alternatively use the money market interest rate. Qualitative results are insensitive to the definition, and econometric precision was slightly better under the maintained definition. Note that the money market rate is equal for all banks, while the opportunity cost of deposits includes some decisions of the bank (namely, on reserves), which are beneficial in our reduced form characterization of the bank's profit.

In the estimation process we allow the parameters δ, Π_0 and w_0 to vary over time, reflecting possible changes in negotiation process. This is done by introduction of the adequate time dummy variables. Estimated parameters will have a double index, x_{0j}, where the second index respects to time (1 stands for 1991, 2 for 1992, and so on). The parameter for 1991 is the base

[5] For a more detailed discussion of the index, see Barros and Leite (1994).

[6] This return is determined by existing legal provisions.

parameter, and the remaining parameters are deviations to it. The notion that threat points in a wage bargaining model can be time-variant is seldom explored, especially in applied work.[7] This gives special interest to time changes in parameter δ. Additive error terms were included in both equations, allowing for contemporaneous correlation across equations, but not serial correlation. In principle, joint estimation of the profit reduced form and of the first-order condition of the bargaining problem is necessary as, under our specification, both Π_i and w_i are endogenous variables to the system. Estimation of the wage equation alone would incur in an estimation bias. Therefore, taking advantage of the recursive structure of the model, we first estimate the profit reduced form as a function of exogenous variables alone, and then use the predicted value as an instrument in the wage equation.

4.2 The results

Several variants of the basic model were considered, where variant means that some restrictions were imposed on the parameters. Table 1 reports the main results for equation (5) in three variants. We omit the estimates associated with the profit function, which are presented in the appendix. Since the estimation of the profit function is instrumental, we do not interpret the results here.[8]

Performing likelihood ratio tests of joint statistical significance of estimates leads to maintenance of the variant 2 as the null hypothesis.

The disagreement point for banks, expressed in terms of a required rate of return on equity, has remained fairly stable over the period. Its value is negative, meaning that banks are willing to accept a negative return on equity, in the short run. This may reflect the existence of significant fixed costs in banking activities, in part associated with the restricting firing laws.

On the time evolution of δ, there is no clear trend. Only in one year, 1993, it is possible to reject the hypothesis of no change in δ relative to 1991. The change occurred in 1993 indicates a loss in banks' bargaining power, which was recovered in 1994. Besides the time evolution, the values estimated reveal that the bargaining power of banks exceeds to a very considerable extent that of workers. According to this evidence, over the period, banks bargaining power, as described by δ, remained fairly constant.

[7] On theoretical grounds, Cramton and Tracy (1994) have explored the economic fundamentals of time-varying threats, although in the distinct context of sequential moves bargaining.

[8] As a simple misspecification check, we estimated the profit equation with the wage rate of the bank and the market average wage as additional regressors. Both variables were non-significant, either in single-equation or simultaneous equation estimates.

Table 1: Econometric Results

	Unrestricted model	Variant 1	Variant 2
w_{0_1} (1991)	3.97	4.06	4.01
	(10.88)	(12.25)	(18.88)
w_{0_2} (1992)	-0.21	-0.29	
	(-0.46)	(-0.68)	
w_{0_3} (1993)	0.38	0.16	
	(0.71)	(0.34)	
w_{0_4} (1994)	0.88	0.92	1.03
	(1.06)	(1.22)	(2.96)
Π_{0_1}	-0.98	-0.58	-0.58
	(-1.15)	(-3.33)	(-3.31)
Π_{0_2}	0.35		
	(0.38)		
Π_{0_3}	0.59		
	(0.68)		
Π_{0_4}	0.28		
	(0.29)		
δ_1	0.97	0.96	0.95
	(46.85)	(72.53)	(99.45)
δ_2	-0.03	-0.02	
	(-0.99)	(-1.20)	
δ_3	-0.06	-0.03	-0.03
	(-1.99)	(-1.73)	(-2.67)
δ_4	-0.02	-0.01	
	(-0.50)	(-0.34)	
Observations	83	83	83
Log Likelihood	-126.161	-127.173	-128.094
Adjusted R^2	0.414	0.428	0.441

Note: t-statistics based on White robust standard errors.

Table 2: Average cost effects of complete bank bargaining power

	Real wage[a]	Reservation wage[b]	Direct cost effect[c]
1991	4.650	86.3%	10.2%
1992	5.104	78.6%	15.5%
1993	6.446	62.2%	25.0%
1994	6.605	76.4%	11.4%

(a) values in 1000 *contos* of 1994

(b) values expressed as % of real wage.

(c) values expressed as % of labour costs.

The evolution of the real wage value associated with the disagreement point for unions complements our view. The fallback real wage has remained stable, with a significant increase only in 1994. This can be taken as a sign of higher bargaining power of workers. In case of disagreement and of breaking up of wage negotiations, workers are able to secure a higher real wage than the one in the previous year.

Taking together both results, the analysis empirically endorses the view that, at the end of the period under review, banks lost some bargaining power to the bankers. This may be a direct result of the decrease in market concentration, which seems to have fueled competition, not only in the market for banking products, but also in the market for the labour input. Thus, although banks should be expected to take a tougher stance in order to provide an adequate shareholder revenue, the need to fight for the best professionals may have resulted in an overall opposite result.

As evidence of increased bargaining power of bankers was presented, one should also refer to the absolute value of estimates and its economic significance. In fact, overall, banks get a greater share of the surplus generated, as the bargaining power, in the narrow sense of δ, is distributed in a very asymmetric way.

In a world of increased competition in banking markets, one may ask how important is the rent sharing of banks with workers. That is, if banks were able to exert more pressure over workers on wage negotiations, what would be the profit increase if wages were set at the reservation level. Also of interest, is the effect of no-time changes in parameters.

The simplest way to assess the issue is to evaluate the cost effect holding interest rates (and production) constant. That is, the effect is measured by the change in wage times the number of workers, which we term direct cost effect. This computation ignores the adjustment in banks' decisions that would follow from a different wage structure. The change in decision variables can only be characterized in the context of a full structural model. Our exercise can be seen, at best, as a rough approximation.

The values in Table 2 reveal that the real wage has increased over time, although the reservation wage as a percentage of actual average real wage has decreased. The last column shows that banks could have had lower labour costs under a stronger bargaining position. For the estimated values, the cost savings associated with paying the reservation wage would be more than 10% of total labour costs, with a maximum value of 25% in 1993.

In two of the years, 1993 and 1994,there were important changes. In 1993, banks have lost bargaining power in the negotiation process (a decrease in δ). If banks had maintained the same δ as in the other years, wages would have been, on average, about 10% lower.[9] With respect to 1994, if there were no increase in the reservation wage, that is, if banks kept the reservation wage at the same level of previous years *and* paid the reservation wage, it would save 29.5% of wage costs.

Thus, these figures show that some significant rent-sharing exists between banks and workers. Despite the asymmetric distribution of bargaining power, some cost savings could have been achieved by a stronger bargaining position. The evolution in 1994 suggests that bankers were able to maintain (slightly increase) rent-sharing by means of an increase in the reservation wage.

5 Final remarks

With this paper we aimed to explore the combined effect of privatisations and declining banking market concentration on the bargaining process between Portuguese banks and unions of bankers. Overall, although the change in ownership should be expected to generate a more shareholder revenue oriented management, and thus motivate a tougher negotiation stance by the banks, results indicate that it were the bankers and their unions who gained bargaining power during the deregulation period of 1991 94. In our view, such result is explained by the increased competitiveness that the changes in the banking market structure had on the market for skilled bankers. In other words, declining concentration not only increased the competitiveness in the market for banking products, but also in the market for this banking input.

It should be stressed that our results tell little about what would be called a 'fair' distribution of surplus between workers and bank owners. Any counterfactual intended to establish the wage that would prevail if bargaining power of workers had remained unchanged neglects the fact that a different wage would set a different profit level. Our analysis does not provide

[9] More precisely, 9.7%. The real wage would have been 5.225, and the reservation wage 90% of the real wage.

all the information needed to fully characterize the would be equilibrium under a different wage vector. Changing the wage of one firm is sufficient to change the market equilibrium and, consequently, profits of a bank are a function of all banks' wages. We have here adopted a more parsimonious approach, specifying a reduced form for profits, which has limitations, but the advantage of simplicity.

The results stress that bankers were able to maintain some rent-sharing. Despite the general feeling that unions in Portugal are losing power in general, and in the banking sector, our analysis suggests that bank workers have been able to maintain and even slightly increase their share of the surplus generated by the banking system. Or, putting it in another way, since increased competition has decreased the economic rents accruing to banks, bargaining power of workers was enough to pass on to shareholders a greater share of such decrease.

It is, however, possible that unions are, in fact, losing some influence. Our results are based on the average wage, which results not only from the tables negotiated between the unions and the Portuguese Association of Banks but also from a large number of agreements between individual bankers and their employers. There is some informal evidence of an increasing number of people under individual contracts versus the number of bankers still governed by the tables and/or influenced by the salary percentual changes negotiated by the unions. There is no available data on this important issue. Our results are thus a reflex of the combined efforts of unions and individual bankers, in one side, and banks, in the other. Consequently, it is impossible to evaluate the specific impact or bargaining power of bankers alone.

A suggestion for future research is the investigation of the impact of today's banking restructuring on the bargaining power of bankers. Since such movement towards concentration is fueled by the need to improve efficiency in order to generate higher profits, banks should be expected to be more aggressive. The resulting surplus staff, together with the reduction of the number of employers should have on the workers' bargaining power the opposite effect of the previous fall in concentration. The authors will anxiously wait for the release of the upcoming figures.

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Appendix

Descriptive Statistics:

	mean	min	max
ROE	0.331	-0.037	1.272
Profit (Π_i)	24.557	-375.175	162 263.05
Real average wage (w_i)	5.553	1.612	9.627
Spatial concentration (CE)	0.047	0.000	0.204
Opportunity cost of deposits (r^A)	0.153	0.104	0.239

Profit equation estimates:

$$\begin{array}{rrrrl} \Pi_i = & -56766.5 & +140352 & CE_i + 729698 & r_i^A \\ & (-7.10) & (3.05) & (13.65) & R^2 = 0.850, Obs = 83. \end{array} \tag{7}$$