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Regulatory reform and the Portuguese banking labour market: two decades later*

Natália Pimenta Monteiro†

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Abstract

We examine the impact of regulatory reforms (liberalisation/deregulation and privatisation) on the Portuguese banking earnings using both micro level and company data during the period 1982-2000. Our main finding suggests that after the introduction of both reforms, as the sector became actually profitable, workers were able to sustain their sizable wage advantage enjoyed during the regulated period. However, analysis for 1985-1990 indicates that during the deregulation phase, the increased competition slowed down the rise in the wage premium despite the the arrival of high-paying firms in the market. Public employees, women, the most experienced and the least educated were among those who benefited the most from the regulatory reforms.

Keywords: privatisation, deregulation/liberalisation, wages structure, Portuguese banking industry

Jel classification: J31, J45, L33.

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1 Introduction

Regulatory reform of product markets is perhaps one of the most prominent policies being undertaken in the European Union. Boosted by the establishment of the single European market, numerous regulatory changes, which tend to liberalise the provision of goods/services and enhance product market competition, have been implemented over the last two decades. The process is less advanced and still ongoing in some national industries whilst in others it is already complete.[1] Yet the empirical assessment of the impact of product market reform, relating to either imposition or relaxation of constraints, on European labour market outcomes has so far received little scrutiny.[2] Despite this dearth of empirical focus, a growing body of theoretical research pinpoints the degree of product market regulation as a crucial factor in explaining the current European labour market performance.[3]

In contrast, the examination of similar policies' impacts upon the USA has a long tradition. Seminal work on regulation effects dates from mid 1970s, whereas the advent of deregulation policies taking place primarily in the 1980s brought a new flurry of studies covering most of the targeted industries and addressing different labour market issues.[4] In common, all these studies evaluate

[1] The OECD international regulation database provides detailed information about the progress on the implementation of deregulation policies in several industries/countries. A summary of this database is provided in OECD (1999), chapter 7. Notice, that this summary also includes other types of regulation than the *economic* regulation which is our unique focus of attention.

[2] One notable exception is Bertrand and Kramarz (2001) who examine the effects of enacting entry barriers in the French retail industry.

[3] For instance, Blanchard and Giavazzi (2001) present a general macroeconomic model of the effects of product market regulations on labour market outcomes while Gersbach (2000), among others, discusses the importance of product market competition in explaining Europe's employment crises.

[4] Hendricks (1977), Ehrenberg (1979) and Pergamit (1985) provide initial evidence on the regulation effects in several regulated sectors (transportation, communications public utilities) while Ansar *et. al* (1997) and Hisch and Schumacher (1998)], focus respectively on the *electricity* and *health care* sectors, respectively. The effects of deregulation on the labour outcomes have been extensively examined in different industries, encompassing *airlines* [Card (1986), Crémieux (1996), Hirsch (2001)], *trucking* [Rose (1987), Peoples (1993, 1996), Belman (2001), Beltzer (1995), Monaco (2001), Monaco and Belman (2001), Talley (2001)], *railroad* [MacDonald and Cavalluzzo (1996), Davis and Wilson (1999)], *electricity*, [Nwaeze (2000), McDermott (1999)], *cable television* [Crofton *et al.* (2000)] and *banking* industry [Black and Straham (2001)]. For analysis in *multiple* sectors, see Hendricks (1994) or more recently, Peoples (1998). Specific labour issues in the deregulation literature include *racial and gender* discrimination

how (de)regulation policies created or stressed (dissipated) distortions in the respective labour market outcomes. More specifically, most of the attention has been devoted to appraisals of labour earnings responses to regulatory reforms. Labour earnings are likely to be substantially greater in regulated periods/industries given the bargaining advantage of unions and firms' profitability in sheltered environments, a phenomenon well-known as *rent-sharing*. In respect of the employment level in (un)regulated periods/industries, rendering generalisations is difficult. The removal of price and entry barriers may enlarge the market by increasing industry employment but the eventual dissemination of labour saving technologies may offset it.[5]

The present paper contributes to fill the gap in the European regulatory reform literature by addressing the effects of the deregulatory reforms in the Portuguese banking sector. In line with the US literature, it also seeks to determine the effects of such reforms on the wage structure. More precisely, this study, close to Black and Strahan's (2001) and Hirsch and Macpherson's (2000) work, examines how banking compensation evolved over the transition between regulated and unregulated periods and whether reforms affected certain kind of workers differently. However, important distinctive features of the Portuguese banking industry and deregulatory experience, also labelled "*valuable for other countries*" since "*the main reform objectives were met*" without "*the concomitant financial instability experienced by many OECD countries*" (See OECD, 1999, page 64), combined with the variety and nature of data used, enables us to go considerably further than US work.

First, apart from the remarkable success of the aforementioned policy, the Portuguese banking

in banking and transportation industries [Ashenfelter and Hannan (1986), Peoples and Saunders (1993), Peoples and Talley (2001), Schwartz-Miller and Talley (2000)] and the effects on *specific occupations*, CEO, in banking, gas and electricity sectors [Hubbard and Palia (1995) and Palia (2000) and theirin references]. Another strand of the literature examines the effects of moving from central planned to market oriented economies. Brainerd (1998 and 2000) for instance, analyses respectively, the effects on wage inequality in Russia and gender wage differentials in several eastern countries and in the former Soviet Union.

[5] Debande (1999) discusses in detail the possible conflicting effects of these reforms on the labour market outcomes.

experience may be considered somewhat *more complex* and *challenging* than any experience formerly examined. In fact, in contrast with US cases, deregulatory reforms targeted a completely *public* (and not private) regulated sector. Therefore, the potential pattern for rents creation and dissipation is likely to differ from earlier evidence and the reforms' diversity is inevitably superior, comprising not only the common abolishment of both price and entry barriers but also a privatisation program.

The design of the deregulatory reforms is also in *itself* economically appealing, since both types of liberalisation - deregulation and privatisation - were introduced sequentially. As will be made clear below, the privatisation program took place only when most of the deregulation reforms were already accomplished. Hence, the cautious sequencing and pace of reforms implemented make the Portuguese experience potentially well suited for yielding some further insight into the separate effect of each form of liberalisation, which remains an important conundrum in the industrial economics literature (Park and Martin, 1995).

The present study also benefits from using expanded data. The prototypical American research on regulatory reforms examines firm and/or individual level data - firms annual accountancy reports and the Current Population Survey (CPS), respectively - sometimes coupled with the analysis of the respective industry collective contract agreement data.[6] In contrast, this study relies simultaneously on three parallel data-type-sources. Moreover, it also complements previous analysis of collective contract agreements by relating the wage bargaining outcome of the sector with that of the whole economy.

The nature of the Portuguese individual database, a *matched employer-employee* dataset known as *Quadros de Pessoal,* is also richer than the respective American CPS. Therefore, by accounting

[6] Two studies, Card (1996) and Hirch and Macpherson (2000), also look briefly at the effects on the displaced workers from the airlines industry.

simultaneously for both sides of the labour market, this study is able to overcome some drawbacks of earlier empirical research, whose model specifications' restrain *either* firms' *or* workers' attributes. Finally, the variety of variables available in the dataset also allows us to shed further light on rent-sharing. In particular, information about firms' ownership is essential for a thorough understanding of the dynamic process of rents' dissipation and appropriation in a mutable industry structure, as it will be shown later.

The remainder of this paper is structured as follows. Section 2.2 documents both the regulatory reform and the wage bargaining developments that have taken place in the Portuguese banking industry since the 1980s. It also includes a discussion of the (predicted) reform effects on different compensation outcomes. Empirical specifications and results based on both firm and individual data are addressed in Section 2.3. Section 2.4 offers some concluding remarks.

2 Regulatory reform, trade unions and the banking labour market

2.1 Overview of the regulatory reform

The Portuguese banking industry has successively undergone tremendous transformations during the last two decades. Prior to 1984, the industry was almost exclusively composed of a small number of firms which became public by the nationalisation wave imposed after the April revolution in 1975.[7] These public firms were overstaffed and highly inefficient (or artificially profitable), reflecting an activity severely limited by state direct control. Like in many other OECD countries, credit and interest rate ceilings (applied both to borrowing and depositing activities) and other capital controls governed and distorted daily banking operations. Furthermore, borrowing and investment on public debt/sector was *compulsory,* which created an additional source for credit misallocation

[7] Only foreign-owned banks and very small financial institutions escaped from this reform.

by preventing banks to channel resources to their most efficient use.[8] Finally, strong entry barriers, either to new or already installed banks through branch expansion, contributed to the lack of competition and development of the banking sector.

In 1984, associated with the wide project of joining initially, the European Community, and later on, the European Monetary Union, "*a project that transcended economic objectives and for which a wide national consensus existed*" (OECD, 1999), the reversal of the regulated financial system started. The first two legal pieces enacted (law 11/83 of 16th August, decree-law 406/83 of 19th November and decree-law 51/84 of 11th February) opened the financial intermediation to the private sector while at the same time most deposit rates were liberalised. In the end, the successful Portuguese reform involved a cautious sequencing of step-by-step measures lasting almost thirteen years (1985-97), but from which neither financial instability nor institution's failure resulted (OECD, 1999). This liberalisation process may be broadly broken down into two distinctive phases according to the nature of the reforms' incidence.

In the first phase, which covers the second part of the 1980s, *most* of regulatory instruments that affect directly the industry structure size and the behaviour of firms (entry and price barriers, respectively) were dismantled, although the complete process was only accomplished in 1992 with the lifting of the remaining capital controls and barriers to branch expansion.[9] The labour market impacts of this kind of reform, commonly labelled as *deregulation,* have been so far extensively examined in diverse American industries.[10] In the second phase, which spans most of the 1990s,

[8] See Freire and Cruz (1995) for a detailed list of the financing sources of the public sector.

[9] For a detailed and chronological description of all reform measures, see page 68, OECD (1999).

[10] The concepts of deregulation, liberalisation and privatisation, although very related, are sometimes inappropriately used as alternatives. This study follows this particular American literature, by defining *deregulation* as the process of reducing the government control over the industry size and firms behaviour while *privatisation* refers solely to the sale of publicly owned assets. The term *liberalisation* is used here to refer to both types of reforms. For a thorough discussion on the meaning of these related concepts see, for instance, Starr (1988) or Kay and Thompson (1986).

the full ownership of ten out of twelve public banks was transferred to the private sector.[11] This privatisation program (law 84/88 from 20th July and decree-law 11/90 from 5th April), possible after two Constitutional Amendments, shared the common goals of the worldwide privatisation processes: independence and improvement of public banks' performance and further enhancement of the competition in the sector.

As a result of this successive abandonment of regulatory restrictions, the competition and efficiency of the banking sector increased significantly. The interest rates spreads and operational costs narrowed substantially, in particular throughout the 1990s, converging rapidly towards average OECD levels (OECD, 1999). Consequently, private credit, also boosted by the strong economic growth, experienced an incipient boom, only reversed in 1993 with the recession, and banking activity became gradually *actually* more profitable.

The conglomeration movement meanwhile started developing in the industry also contributed to a further reduction in the operational labour costs. The process of creation of companies' groups operating in the same or diverse sub-sector(s) of the financial sector, namely bank and insurance leading to *bancassurance*, culminated in 1998 with the full merger of three firms. The first merger process involved already some recently privatised firms but it is still ongoing in some other groups.

Finally, financial innovation and banking technology also changed dramatically throughout this privatisation period. Complementing the modernisation of financial instruments introduced in 1990-1991, with the evolution from a direct to an indirect monetary control system, banks themselves started expanding and diversifying the supply of financial products/services. An important

[11] More precisely, the privatisation program started in the end of 1989. Nevertheless, results do not alter by considering 1990 the first year of the privatisation period. This total number (ten) of firms privatised in the banking industry does not coincide with the eleven firms privatised reported in the OECD 1999 survey. This discrepancy is due to both the absence of one bank in the data; the exclusion of one bank, which privatisation implied the transfer of a minority participation (15%) to the private sector and the inclusion of the indirect privatisation of a public bank thorough the privatisation of the group to which it belongs (see page 22, Ministério das Finanças, 1999).

indicator of this financial products' proliferation relies on the continuous/persistent investment meanwhile carried out by banks for instructing their old workforce.[12] Training and updating programs, which started already with the diffusion of communication technology (mainly computer), soon became crucial tools for modernising banks' supply. On the other hand, significant progress on the electronic means of payments was registered. The widespread availability and use of automatic teller machines (ATMs) and electronic fund transfer at the point of sale (EFTPOS) firstly implemented in 1985, allowed a reduction in the cost and time associated with financial transactions permitting, a further rise on the efficiency and productivity of the sector.

Table 1 below, displays some annual average figures that summarize the main changes occurring in the commercial banking industry, in terms of size and performance, during the four periods described previously.[13] The period 1980-1984 corresponds to the regulated era, the period 1985-1989 to the deregulation phase, the period 1990-1997 to the privatisation program and finally, 1998-2000 to the recent development of corporate structures through merger processes.[14]

Four important results arise from this table for understanding the labour market impacts of regulatory reforms. First, figures relating both to the average number of firms and branches operating in the industry reveal that entry barriers *actually* inhibited the private sector from financial intermediation. Indeed, the annual average number of both firms and branches increased steadily throughout the period 1985-2000, even during the merger wave, with the latter clearly reflecting the lift of the branch network constraint in 1992.

Second, while reforms led to the proliferation of banking firms, the industry is still dominated

[12] For instance, in 1990 banks spent 10 002 644 Euros in trainning programs (APB - boletim Ano 4, no. 7, Junho 1991).

[13] This information undervalues the *actual* size of the sector as it excludes some saving banks included usually in the banking sector according to the definition adopted by the Portuguese central bank.

[14] The year 1984 is included in the regulated period as the entry of new firms actually occurred in 1985.

Table 1: Banking industry size and performance, 1980-2000

	1980-1984	1985-1989	1990-1997	1998-2000
Size and structure				
Average number of firms	17	27	36	43
Average number of branches	1,425[a)]	1,577	3,075	4,646
Concentration ratio [b)]	n.a.	n.a.	73.7[c)]	78.4
Average total employment (10^3)	58[a)]	59	61	56
Labour factor				
Real productivity (assets/employment)[d)]	1.231[a)]	1.360	2.367	4.164
Staff costs/assets	.014	.014	.012	.008
Profitability				
Average profit per firm (10^3 euros)	3.31	7.37	23.04	39.82
Average real profit per firm (10^3 euros)[d)]	16.33	14.64	27.22	38.73
Average ROA (profits/assets)	.004	.005	.007	.007
Technology				
ATMs	n.a.	519[e)]	3,184	29,147
EFTPOS	n.a.	809[e)]	8,544	75,783

Source: Own computations based on OECD, Bank Profitability - Portugal, 1980-2000.
Notes: *a)* data relative to the period 1982-1984; *b)* market share of the 5 largest groups in terms of total credit to customers, data from Bank of Portugal, Annual Repport (various issues); *c)* refers to 1992-1997; *d)* 1998 prices; *e)* refers to 1989; n.a. not available.

by relatively few larger groups as it is attested from the credit concentration ratio of the five largest groups. Consequently, despite the absence of data it seems that regulatory reforms seem not to have encouraged *actual* competition in the product market.

The total employment also grew, though at a much slower pace, being only sharply squeezed during the merger wave. However, this upward employment shift was accompanied by important declines in the incumbent's size which altogether implied a significant reduction in average banks' size: from an average of 3 311 employees per firm in 1980-1984 to 1 372 in 1998-2000. Despite this reduction, large discrepancies in firms' size still persist, in particular, after the merger process.

Finally, the profitability of the sector, either measured by the average profits per firm or by the rate of return on assets, increased markedly after its liberalisation, but in particular throughout the

privatisation period. The improvement of the sector's performance reflects the higher productivity and efficiency levels achieved by the use of a more educated workforce (as will be seen shortly) combined with the widespread use of new technology. Therefore, firms were able to reduce the staff costs weight (on total assets) but only from the period of privatisation onwards.

2.2 Trade unions and the banking labour market

How did trade unions, historically the largest and the most influential in the country, face all these profound changes? Despite the significant increase in union membership observed between the period 1974-1978 and 1991-1995, from 71% to 106% (Cerdeira, 1997), banking unions seem to have *accommodated* rather than contested the new market environment. Indeed, the resistance offered was limited, not co-ordinated, mostly being made through internal speeches and pamphlets which were rarely reported in the national press. Also, the total number of strikes was limited: five strikes occurred in 1986, 1988 and 1989, each involving less than half of the total workforce (source: Greves, MTSS - various issues, 1986-2000). More importantly, the annual negotiated wage increases in the banking sector have clearly deteriorated after the opening of the sector. Although the annual negotiated wage increases declined for the whole economy during the 1985-2000 period (accompanying the desinflation policy), the financial sector obtained always lower wage concessions over the same period (Table 2).[15] In particular, the weakest negotiation period coincided with the deregulation phase, where both nominal and real negotiated wages departed the most from the respective national wage figures.[16] Information collected for the banking sector specifically does not change the overall picture.

[15] The Ministry does not provide separate information for the banking sector for the period 1985-2000. Hence, the financial sector referred to in this table includes, banking, insurance and other related financial activities.

[16] The gap between nonimal and real figures for the total and financial sector differs given that the inflaction effect is corrected taking into account the *effective* date of negotiated wage increases.

Table 2: Collective bargaining contract data, 1980-2000

	1980-1984	1985-1989	1990-1997	1998-2000
Total economy				
nominal	n.a.	12.1[a)]	8.0	3.4
real	n.a.	.7[a)]	1.2	.7
Financial sector				
nominal	n.a.	11.1[a)]	7.6	3.1
real	n.a.	-.2[a)]	.7	.5
Banking sector				
nominal	19.1	13.0	6.6	3.2

Source: Own computations based on MSST, Relatórios e Análises. Regulamentação do trabalho (various issues) and on bargaining contract data supplied by Sindicato Bancário do Norte.
Notes: n.a. not available. *a)* refers to 1986-1989 period

The wage agreement rejection by the largest private group in 1996-1997, also contributed to the weakness of the union bargaining power.[17] One of their main objections relied on the inherent generous promotion policy (Lima *et al.*, 1999). Indeed, this collective agreement, the most detailed and extensive in Portugal, regulates both *automatic* and *compulsory merit* wage progressions for each of its 18 *levels* of the 4 groups defined. Automatic and compulsory merit promotions (imposed by a minimum contigent in each group) are obligatory for the lowest educational levels (between level 1 and 10), being optional for upward educational levels (clause 18 and 19, respectively of the agreement).

Table 3 illustrates employment and workforce attributes by firms' ownership throughout the period 1985-2000, following the previous time partition.[18]

Total employment and the number of firms enable us to understand size differences amongst the three ownership firm groups. Public firms are by far the largest in the banking sector. Yet, privatisation and conglomeration processes led to a rise in the domestic owned firms' size, despite

[17] This wage agreement, which covers all banking workforce (also labelled *vertical collective bargaining agreement*), used to be signed annually by all firms regardless of their ownership (despite some exemptions could be mentioned at the end of agreement).

[18] Although there is some published work that presents data from the *Quadros de Pessoal* for periods earlier than 1985, the data for this period is currently unavailable to the author.

remaining smaller than their counterpart public firms. On the other hand, figures on the number of workers declared unemployed from the financial sector (4 700 and 12 150 on average per year, over 1983-1985 and 1990-1997 periods, respectively) disclose the downsize strategy followed by privatised firms after their divestiture, as no firm entered on bankruptcy. Foreign firms, although being small, also increased sharply their importance in the market in particular over the 1990s. Indeed, their employment share rose sequentially from 2 per cent in 1985, to 3 percent, 11 percent and 27 percent in 1990, 1997 and 2000.

Information on gender composition reveals that the banking industry is still a male dominated sector. Nevertheless, the overall disproportion between men and women has been attenuated over time in 10 percentage points, as domestic firms, both public and national, hired more women. For national firms however, the fraction of men has been reduced via privatisation as new private firms, in particular the largest private bank/group, were extremely reluctant on hiring women for high occupations (the proportion of men in new domestic firms is 86, 85 and 66 percent in the 1985-1989, 1990-1997 and 1998-2000 periods, respectively). Foreign firms represent an exception since their relative fraction of men exhibited surprisingly an upward trend.

The banking wage trend is also evident: banking sector workers experienced a strong (real) wage rise throughout the 1985-2000 period, mainly reflecting the fast economic growth observed in the economy, after Portuguese membership of the European Community in 1986. Moreover, a *convergence* of wage level within the banking sector is observed, according to the decentralised wage bargaining system prevailing in the industry. Because unions represent *all* employees *regardless* of firms' ownership, uniform wage levels across firms should *a priori* be expected within the banking sector. Indeed, this is the case. The worst paid employees (public workers) in 1985-1989, suffered the sharpest wage increase in the industry by 1998-2000 (.48 log points) while the better paid ones

enjoyed a much more modest wage rise over the same period (.25 and .09 log points, for workers in national and foreign firms, respectively).

Education figures reflect different hiring policies among the three ownership groups. While public firms present the lowest schooling profile, foreign firms keep the highest educated workforce. Private national firms also depart from public profile as their starting-up employees are the most educated in 1985-1989 period. Nevertheless, over time educational levels (reflected on wages) rose from an average of 9 to 12 years of schooling and tend to be equal within the industry. Notice, in particular the catching-up strategy followed by public firms.

The remaining demographic attributes (age, tenure and potential experience) also converged over time. They show that Portuguese banking employees, like elsewhere, typically experience long careers working in the same firm or sector.[19] As Lazear (1979, 1995) and Malcomson (1984) suggest, the use of seniority-based wage scales (such as those implied by the wage agreement) creates *self-enforcing* contracts that promote incentives for workers to supply high efforts through-out their careers and remain in the job.

2.3 Discussion

How might the introduction of regulatory reforms affect banking employees? Notice that during the regulated period, banking firms were overstaffed and paid generous wages given the strong and active presence of unions in the sector. Indeed, in contrast to the traditional view of the labour rent-sharing theory, regulation in the banking sector, did not lead to high profits (which could be then appropriated by workers), despite raising the interest rates spreads. As Sousa and Cruz

[19] Seltzer and Merrett (2000) or Seltzer and Simons (2001) provided similar evidence on the long-lasting career of Australian banking employees. By the wage agreement, seniority is a transferrable asset among firms within the banking sector.

Table 3: Employment and mean attributes of banking employees by firm ownership, 1985-2000

	Total	Public	National	Foreign
1985-1989				
Total employment (average per year)	49,332	47,589	825	918
Total number of firms (average per year)	21	11	4	5
Male (%)	76.3	76.4	86.4	63.2
Average of log of real hourly wage	7.11	7.10	7.31	7.56
Schooling	9.1	9.1	11.1	10.3
Age	39.8	40.0	32.2	37.8
Tenure	13.3	13.5	4.6	11.4
Experience	24.7	24.9	15.2	21.5
1990-1997[a)]				
Total employment (average per year)	57,257	24,886	28,816	3,554
Total number of firms (average per year)	38	6	18	14
Male (%)	71.9	68.2	74.5	71.5
Average of log of real hourly wage	7.44	7.41	7.45	7.66
Schooling	10.3	10.0	10.4	12.2
Age	41.0	42.0	41.0	34.3
Tenure	14.2	15.4	14.3	5.6
Experience	24.7	26.0	24.7	16.2
1998-2000				
Total employment (average per year)	55,348	12,703	3,381	6,431
Total number of firms (average per year)	51	2	32	17
Male (%)	65.5	57.6	66.9	74.5
Average of log of real hourly wage	7.58	7.58	7.56	7.65
Schooling	11.6	11.1	11.6	12.5
Age	40.2	41.0	40.5	37.4
Tenure	13.4	14.9	13.8	8.0
Experience	22.6	23.9	22.8	18.6

Source: Own computations based on QP, MSST (1985-2000).
Notes: *a)* Demographic information relates to the period 1991-1997, given the abcense of data in 1990.

(1995) discuss, the solid financial performance of public banks apparent in their annual reports in the period 1976-1988, suffered a profound *cosmetic* distortion in order to avoid uncertainty and panic among the economic agents. Therefore, the transition to a competitive environment, by introducing market discipline is likely to affect both the level of and changes in workers earnings. Three related hypotheses are considered. The first hypothesis discusses the effects of reforms on the *level* of compensation, the second on the *relative* compensation (or wage premium) and the last one, on the wage dispersion.

Compared to the regulated era, changes in the real banking compensation *level* should thereafter sign *actual* productive gains. To the extent these real compensation changes were inflated during the regulated era, a compression in the annual real compensation is likely to occur. In particular, during the deregulation phase, such a compression is expected, given the fragility of union wage bargaining outcomes (an annual decline of 0.2 percent on average) and the modesty of productivity gains. During the privatisation and merger phases, predictions are less clear. The productive gains, fostered by banking technology diffusion, were pronounced (an annual average increase of 11.7 percent in 1990-2000 compared to 6.6 percent in 1985-1989) and complemented with an improvement on the annual negotiated wage increases.

In terms of banking wage differential, the overall picture is more complex. Predictions anticipated from information contained *solely* in the contract bargaining data for the whole economy and the financial sector are certain: deregulation and privatisation reforms exerted a clear downward pressure in the *relative* negotiated wages. Therefore, an erosion, though decreasing, in the relative banking wage premium is expected to occur for the entire period 1985-2000. To the extent, the entry of new high paying private firms in the sector might alter or postpone this expected decline in the banking wage premium, is unknown. Also, the acute increases in productivity, profitability

and concentration levels registered in the industry, in particular from the 1990s onwards, might also invert this expected downtrend. In fact, during this period of growth, financial sector is likely to have benefited more than the rest of the economy, as the differences in the level/growth of productivity between them reveal. For instance, labour productivity figures based on value added in the financial intermediation sector (whole economy) were .39 (.17), 1.07 (.49), 3.09 (.89) and 5.85 (2.01) in 1980, 1985, 1989 and 1999, respectively.[20] In addition, the elimination of earning rents by privatisation was *merely* transitory as four years after ownership transfer, relative wages rose in privatised firms in order to converge towards other firms' level (Monteiro, 2002 and 2003). Finally, the widened difference between *negotiated* and *effective* wages observed in the banking industry since the early nineties (Aperta *et al.*, 1994) weakens the advanced former hypothesis.

Wage dispersion within the banking sector is also likely to rise. The wage distribution prevailing in the sector is compressed given the tremendously compressed pay-wage scale defined by the wage agreement. For instance, a top-grade occupation worker earns at most six (two) times as much as the lowest-grade (middle) occupation worker (level 18 versus level 1(9) of the agreement contract, respectively).[21] On practice, these earning ratios differ and have augmented over time given the widened difference between negotiated and effective wages mentioned above. More importantly, inter-ownership groups dispersion is likely to increase as foreign firms pay, like elsewhere, more than the average of domestic firms, even if subscribing the same wage agreement contract. Payment in private domestic firms is also likely to diverge from the public pattern, given that its clear profit orientation leads to a performance-related payment.

[20] Source: Own computations based on OECD STAN database(on line www.oecd.org/sti/stan). for industrial analysis

[21] The same ratio reaches 5 in central planned economies and 20 in the USA (Brainerd, 2000).

3 Empirical specifications and evidence

We turn now to the empirical assessment of the regulatory reform effects on the Portuguese banking compensation. The first subsection compares banking compensation over time, before and after implementation of regulatory reforms, to that prevailing in the whole economy using firm level data. It explores directly the reform effects on banking compensation level, though additional conjectures about the creation/dissipation of rents are also inspected. In the following subsection, we use individual micro data to examine the remaining hypotheses previously discussed. In both analyses, the regulatory reforms are considered exogenous to the labour market conditions prevailing in the banking industry.[22] While disputable, recall that these reforms were claimed by the consensual national desire of joining European Community and not by the domestic circumstances *per se*.

3.1 Firm data evidence

We first consider the effects of the competitive shocks described in the previous section (deregulation, privatisation and consolidation) on labour earnings by focusing on the average annual compensation of *all* banking employees. This information is available from the banks' annual financial reports provided by the *APB-Associação Portuguesa de Bancos* (Portuguese Banking Association). The main advantage of this data (besides containing information relative to all employees as Black and Strahan (2001) stress) is that it includes all regulatory periods of interest once it covers the period spanning between 1982 and 2000.[23]

In the first set of tests, we examine if the increase in the competition level (introduced in the market via policy changes) induced any changes in the annual compensation trend of banking

[22] Duso and Roller (2003) discuss the impacts of not considerering this regulatory reforms' endogenous.

[23] The first *Boletim Informativo* published by Associação Portuguesa de Bancos (APB) in 1988 contains retrospective (historic) data since 1982.

employees. The dependent variable is equal to the logarithm of real average staff costs per employee in an unbalanced panel data constructed for each bank over the 1982 and 2000 period. In the basic specifications of Table 4 (columns (1), (3), (5) and (7)), the log of real average staff costs per employee in each bank/year is regressed on a time trend and on a variable *Unregulated*. The variable *Unregulated* is an indicator variable that equals 1 in the period after 1984, thus splitting the sample between the regulated and unregulated (competitive) environments. In the remaining specifications (columns (2), (4), (6) and (8)), the unregulated period is further broken down, following the previous time partition, in order to account for the effects of different deregulatory measures and the effects of the merger process occurring lately in the industry. Therefore, the variable *Deregulation* (referring to the deregulation period) takes the value 1 in the period between 1985 and 1989 whereas the variable *Privatisation* is equal to 1 in the period between 1990 and 1997. The variable *Consolidation* equals 1 during the years 1998, 1999 and 2000. In all regressions, each bank-specific component of compensation is controlled with a fixed effect. The variable annual unemployment is also included in order to account for the business-cycle effect.[24] Results are presented separately for the whole industry and for each of the three firms' ownership categories.

As Table 4 reports, the annual compensation trend in the banking industry between 1982 and 2000 is about 9.6 percent ($e^{.092} - 1$), a value clearly surpassing the respective compensation (real) growth rate prevailing in the economy for the same period (2.4 percent).[25] Nevertheless, during the competitive period this trend, as expected, flattens *slightly* in contrast with the economy-wide movement. Indeed, the reduction of 15.6 percent ($e^{-.170} - 1$) in the annual compensation during the years between 1985 and 2000 implies on average an annual compression of about 0.97 per cent

[24] Using the variable GDP growth we get similar results.

[25] Source: Banco de Portugal, in *A Situação Social em Portugal 1960-1999*, volume II , António Barreto. and Relatórios Anuais 1999 and 2000.

Table 4: Panel estimates of the effect of regulatory reforms on the log of real average compensation per employee

	Total		Public		National		Foreign	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year trend	.092*	.108*	.078*	.067*	.102*	.119*	.089*	.130*
	(.006)	(.012)	(.006)	(.010)	(.010)	(.020)	(.011)	(.022)
Unregulated	−.170**		−.148*		−.236		.142	
	(.083)		(.045)		(.309)		(.191)	
Deregulation		−.307*		−.103*		−.609*		−.114
		(.092)		(.054)		(.313)		(.201)
Privatisation		−.326***		−.051		−.391		−.308
		(.151)		(.102)		(.379)		(.303)
Consolidation		−.626**		.128		−.872		−.959**
		(.224)		(.177)		(.496)		(.431)
Unemployment	.004	−.028*	.025*	.029**	.026	−.041	−.051*	−.111*
	(.011)	(.014)	(.009)	(.010)	(.017)	(.029)	(.022)	(.027)
F (H_0: all reg. var. $= 0$)		7.57*		4.63*		7.81*		5.13*
R^2 (within)	.403	.422	.689	.670	.318	.380	.386	.428
N	654	654	145	145	286	286	223	223

Source: Own computations based on Boletim Informativo, APB (1988-2000).
Notes: Standard errors in parentheses. *, ** and *** denote statiscally significant at the 1, 5 or 10 percent level respectively

of the compensation when compared to the regulated era. On the other side, this compression is not evenly spread over the competitive time period. According to column (2), the *overall* intensity of adjustment when the length of each phase is taken into account is the greatest over the consolidation (and union disrupted) phase being followed respectively by the intensity felt throughout the deregulation and privatisation phases. Despite this ranking, in terms of firms ownership, the effect of consolidation, besides being important in terms of magnitude, is only significant for foreign firms, the least weighty group in the market. Similarly, the effect felt during the privatisaion period disappears when onwership groups are considered individually. Therefore, the evidence presented in Table 4 suggests deregulation as the *prime* factor producing the strongest variation on the compensation level of the overall industry and amongst either public or national firms when considered individually.

Turning to public firms first, the results shown here corroborate earlier research on this industry. In fact, the significant decline of 9.8 per cent in the compensation level in the public firms over the

strict deregulation phase reflects that changes to competition and market structure *actually* affect the determination of the compensation structure. On the other hand, the insignificant impact felt throughout the privatisation phase confirms that the process of adjustment for firms being privatised occurred mainly *after* and *not* before its divestiture as advanced before (Monteiro, 2002 and 2003).

The explanation of similar effects for private firms is apparently less straightforward. Indeed, during the phase of strict deregulation, private firms suffer the most important reduction in the compensation level when compared to the regulated era. Notice that in the regulated era this category consists of only one firm, a financial cooperative, without universal banking status and not necessarily covered by the same union. Also, between the years 1985 and 1989 inclusive, this firm category was increased only by *new* entries who were strongly performance oriented in the market. Therefore, the compensation structure of these new firms is likely to have differed from the previous institution. The remaining entries in this group, entry *de novo,* took place with the privatisation process over the subsequent time period. The important but statistically insignificant impact of privatisation on compensation hence reflects the increasing weight of newly arrived private firms in the market along with the out phasing and overlapping pattern of the privatisation wage adjustments' detected formerly for this industry. Finally, the findings regarding foreign firms reveal their relative independence and small significance (despite increasing lately) in the market.

Even recognising that the conventional rent-sharing logic (high profits leading to high wages) is inverted in our case (high wages led to low profits), we also explore the conventional relationship between compensation and profits throughout the (un) regulated period. According to the labour rent-sharing theory, the relationship between wages and profits should be stronger over the regulated period once profits reflect economic rents. However, as competition is introduced in the

market profits decline and the relationship between compensation and profits should flatten.[26] This hypothesis is tested here by regressing the log of the average staff costs per employee on the return on assets (ROA) interacted with the four indicators mentioned previously.[27] We also consider separately the effects for the whole industry and for each of the three firms' ownership categories.

Table 5: Panel estimates of the impact of regulatory reforms on the relation between the log of average compensation per banking employee and return on assets

	Total		Public		National		Foreign	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ROA	−.626*	−.700*	−1.84*	−1.78*	−10.7*	−11.0*	−.414**	−.444*
	(.106)	(.106)	(.252)	(.244)	(2.71)	(2.59)	(.110)	(.111)
Unregulated*ROA	.484*		1.692*		10.4*		.298*	
	(.109)		(.238)		(2.714)		(.114)	
Deregulation*ROA		.371*		1.44*		10.5*		.250
		(.109)		(.249)		(2.58)		(.115)
Privatisation*ROA		.647*		1.80*		10.8*		.393*
		(.111)		(.239)		(2.58)		(.121)
Consolidation*ROA		.634*		2.85*		11.0*		.193
		(.128)		(.453)		(2.59)		(.156)
Unemployment	−.158*	−.143*	−.146*	−.116*	−.078*	−.049***	−.206*	−.202*
	(.017)	(.017)	(.024)	(.025)	(.023)	(.023)	(.029)	(.030)
F (H_0: all reg. var. = 0)		15.41*		23.33*		14.53*		4.69*
R^2 (within)	.196	.230	.458	.515	.185	.267	.288	.314
N	654	654	145	145	286	286	223	223

Source: Own computations based on Boletim Informativo, APB (1988-2000)
Notes: Standard errors in parentheses. *, ** and *** denote statiscally significant at the 1, 5 or 10 percent level respectively

Contrasting with the theoretical predictions and parallel empirical work (Black and Strahan, 2001), the introduction of competition in the market not surprisingly *establishes* and *not flattens* a *positive* relationship between compensation and measured profits (Table 5, column 1).[28] As described earlier, public firms were not autonomous, being subject to endless state financial needs and to market regulation. Therefore, compensation does not reflect firms' profit performance. National firms also mimic this pattern given the peculiar nature of the private banking existent in

[26] For a survey on rent-sharing theories and respective empirical evidence see, for instance, Christofides and Oswald (1992), Blanchflower *et. al* (1996), Oswald (1997) and Hildreth and Oswald (1997).

[27] Following Black and Strahan (2001) work, the analysis is simplified by not addressing the endogeneity of profits. ROA is equal to net profits divided by total assets. In the regressions, ROA is trimmed at the first and last percentiles once it contains both large positive and negative outliers, following the same work.

[28] Using alternative profit measures for instance, logarithm profit per employee, the quality of results remains unchanged.

the regulated era. Foreign firms again exhibit the same puzzling relationship resulting from the general firms' erratic and short stay in the market.

More importantly, the establishment of this relationship, when looking at the whole industry or at each of three firms' ownership categories, appears to intensify gradually over time. The continuous reinforcement of this link, in particular for public firms, may *at least* imply some deferring of the expected dissipation of rents in this industry.

3.2 Individual-level evidence

3.2.1 Overall workforce

The main weakness of the previous analysis is that it does not account for changes in the employees skills and employment status. As shown in Section 2.2, over the last two decades there has been an upward trend in the human capital level by general education and by banking specific training. Therefore, these results may underestimate the true effect of changes in the regulation policy. In order to disentangle the two effects (skill changes and rent sharing) we estimate the competition impact by using micro individual data from *Quadros de Pessoal*. This is an extensive matched employer-employee data set collected annually by the Ministry of Employment. It provides detailed information about each unit, employee or employer, observed. For instance, for each employee it gives information on earnings, education, gender, seniority, occupation, among others, whereas for the firm it informs about its size, economic activity and ownership status. The major drawback of this data set, as seen already in Section 2.2, is its unavailability for the regulated period, hence making the present analysis confined to the period 1985-2000. On the other hand, note that the quality of the data during the first years it was collected (first experiences took place in the late 70s) was clearly inferior (both in terms of firms' coverture and *actual* variables' availability) to data

collected afterwards, in particular from middle 90s on.[29]

In terms of empirical strategy, we follow the "change in the wage differential" approach, which has been the *state of art* in long term analysis in this and related literature.[30] Given the reasons stated above and because the estimation of the Portuguese banking wage premium in 1982 is available (*vide* Vieira *et al.*, 1997) we look at changes in this premium over time. Changes in relative wages are attributed to reforms and other industry-specific factors. An annual measure of adjusted/conditional "relative wage differential" (similar to that estimated by Vieira *et al.*) is obtained by running a cross-section ordinary least squares regression for each year from 1985 to 2000. This regresses the logarithm of real hourly wage on a binary variable for banking employment and on a vector of both workers' and firms' characteristics (gender, potential experience and its square, seniority, level of education stratified in seven categories, six occupation categories, six regional indicator variables and four wage bargaining system indicators, employment size and three ownership categories). The analysis is based on a 10 percent random sample (drawn after dropping the observations without complete demographic information) and contains exclusively full time employees aged between 18 and 65 years according to the definition of the vertical collective agreement prevailing in the industry.[31]

Figure 1 plots the coefficients computed for the whole industry.[32] Figures relative to the GDP

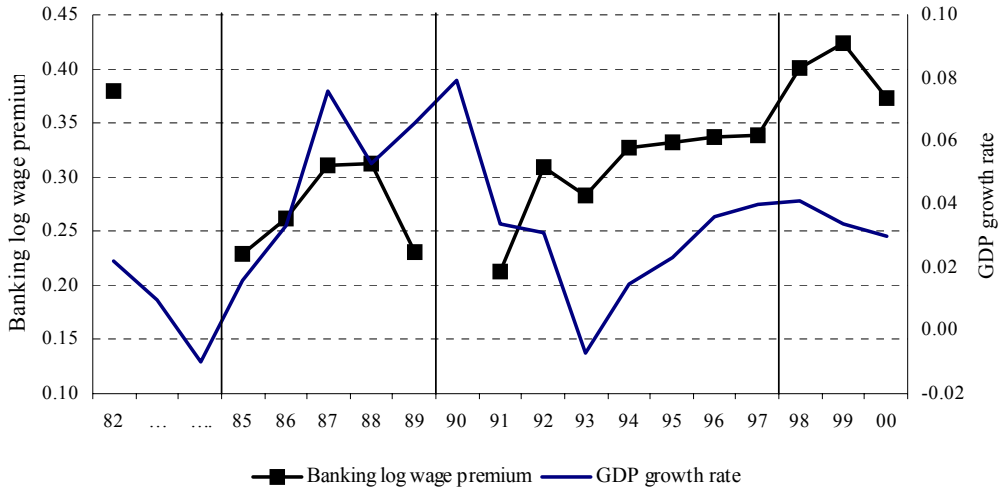
[29] This was already evident in Section 2, with the absence of data relating to the year 1990 and the omission of the major banking firm in 6 out 15 years of data available. Also, the variable worker identification is missing for this same bank in 3 out of 9 years. The important not randomly absence of this variable prevented a more thorough use of dataset potential capacities, namely the construction of a panel data, which enables the control for the effects of unmeasured differences among individuals.

[30] This is the most frequent strategy followed in the work mentioned in footnote 4. It is also popular in the analysis of public/private wage differentials. See for instance, Disney and Gosling (1998) or Breinerd (2002).

[31] Following Vieira *et al.(1997),* employees from the agricultural and fishing sectors were excluded from the original data set in order to make the comparison closer. Also, following their definition, the outcome variable was constructed as the logarithm of the sum of monthly base wage, plus the regular and irregular components of the wage, payment indexed to tenure and overtime divided by normal and extra hours worked, after being converted to real terms (1998 prices) by using the Consumer Price Index (IPC).

[32] In the Appendix, Table 1 includes all information used to construct this and the following graphs.

Figure 1: Banking log wage premium, 1982-2000



growth rate are also superimposed in order to circumvent the regulatory policy changes to the economic context. Additional vertical lines in the figure distinguish the four periods described earlier. Some striking features emerge from this graph.

First, a downward trend on the sizable wage premium is not uncovered, similar to that experienced in the US railroad industry, but which contrasts markedly with the evidence provided from the majority of US industries (Peoples, 1998). In fact, prior to liberalisation, banking employees were enjoying a wage premium of .379 log points which remained unchanged by 2000. Despite the similarity of the banking premium size in these two years, two opposite patterns seem to appear throughout the entire period of analysis. The first pattern arises from the period of strict deregulation, where the wage premium *albeit wavy* and partially *pro-cyclical*, appears to be somewhat *downward* driven. In fact, during mid-1980s the wage differential, already lower when compared to the regulated benchmark, rises initially, accompanying the economy business cycle. In 1989, it

falls abruptly, running counter-cyclically, to its initial level.[33]

During the privatisation and consolidation phases, a second pattern emerges with the detection of an upward trend on the wage premium, clearly mirroring the economy-wide movement. Indeed, the average wage premium reaches .31 and .40 log points over the privatisation and consolidation phases', respectively, compared to its average level of .27 log points observed during the strict deregulation phase. The same conclusion is obtained when the upward trend is measured alternatively in terms of a difference-in-differences estimate of the change on the wage premium occurring between the beginning and end of the each phase.[34]

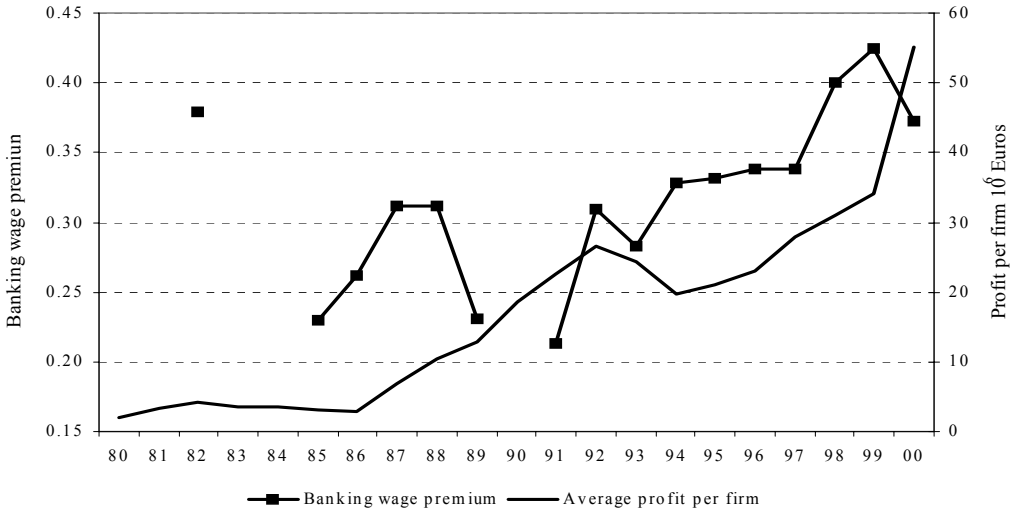
What forces drove these two distinctive premium patterns'? While the *specific* shape of each premium pattern was not discussed, differences between the wage premium movement, before and after 1990, could be anticipated from Section 2.3. In the deregulation phase, the final wage premium remained apparently constant, instead of depressing according to our's expectations and estimates from Table 4. This result reflects directly changes in the market ownership structure, as will be clarified below, brought about by the arrival of new high-paying firms, either national or foreign. Nevertheless, the downward pressure effect from increased competition was felt, as the wage premium fell later in 1989 (otherwise it would have increased).

The upper trend in the wage premium occurring thereafter, mirrors mainly the financial health prevailing in the industry and is consistent with former estimates of the change in overall compensation from annual firm reports. Indeed, the upward trend and peaks in the premium wage do coincide with significant jumps in the average profits per firm registered in the industry (Figure 2). As suggested in Table 5, the stronger relation between wages and profits throughout this period,

[33] The same initial pattern is found in american airlines industry.

[34] The strategy of looking *only* at two points in time and calculating the change in the wage differential has also been widely applied in this literature. See, for instance, Card (1996). The first and last years of the first, second and last phase correspond respectively to, 1985 and 1989, 1989 and 1997 and 1997 and 2000.

Figure 2: The wage premium and profits in the banking industry, 1980-2000



may imply that the increased concentration in the banking sector is probably *replacing* the former sources of rent extraction (entry and price barriers). Also notice, that during the consolidation phase the overall premium rose what favours this hypothesis (the subsequent decline is likely to have resulted directly from the merger process). Finally, data features, in particular the absence of the largest bank in 6 out of 15 years of analysis, also helped exacerbating the shape of these waves.[35]

The last point worth noting concerns the magnitude of the wage premium prevailing in the industry. Why do banking workers still remain so highly paid compared to workers with similar measured characteristics? There are at least three other concurrent explanations. The first explanation relies on the eventual misreport of the total number of hours worked in the banking sector. If banking employees have been working more hours than those reported, then the wage premium is *actually* overvalued. In fact, this seems to be the case. The *total* duration of work has remained

[35] Computing the wage premium for 1985-2000, excluding employees from the largest bank, allows us to evaluate the relevance of this data problem. The coefficients obtained do change slightly although in an unpredictable direction.

nearly constant over time and it coincides with the (relative) short *normal* duration established in the collective agreement. Therefore overtime work is likely to be understated. Recent press news also document this reality: the banking sector has been under close scrutiny (inclusive paying fines in more than 1120 cases) by *Inspecção Geral do Trabalho* for at least the last three years for not reporting and not paying overtime work.[36]

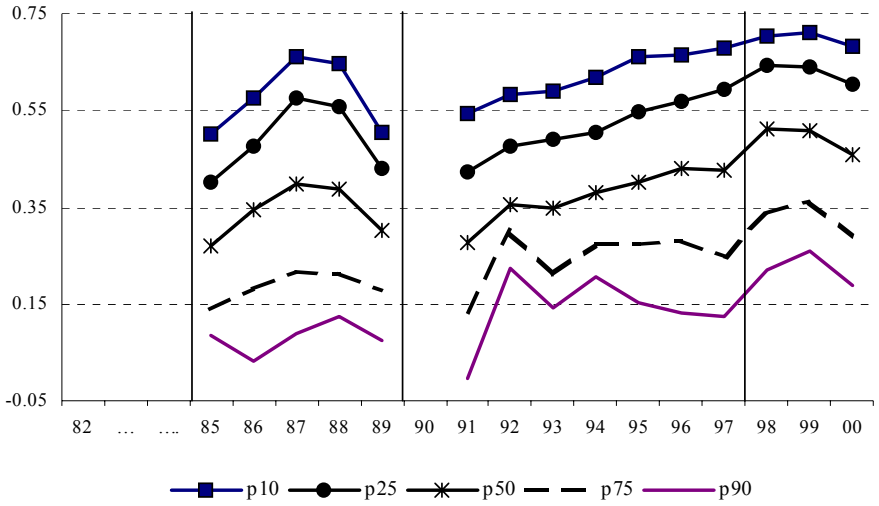
Another shortcoming of this analysis might refer to the *effective* control of the banks size effect on wages. Although we do control directly for the size of each firm (through the logarithm of employment of each firm), the actual size effect is likely to be undervalued. As mentioned in Section 2.1, banking firms started aggregating and creating financial groups with other firms within and outside the banking sector. Therefore, the firm size effect, which is associated economy-wide with high wages, is not fully controlled.

The last potential explanation is related to the human capital investment. As seen in the previous section, banks and *not* employees incurred substantial expenses in training and updating an old workforce. As a result, firms might *still* prefer to pay higher wages in order to reduce turnover and thus benefit from the investment made according to the efficiency theories. This is particularly plausible in an industry characterised by seniority-based wage scales and where the general skills are likely to be easily transferred to other sectors.

Figure 3 shows alternatively the wage differential over five selected percentiles of the wage distribution. As it becomes obvious, the wage premium at all percentiles of the wage distribution broadly replicates the two patterns previously identified (mean wage differential) over the three time periods. Furthermore, the wage premium, despite being pervasive, is an *inverse* and monotone function of the percentiles of the wage distribution. Indeed, less-skilled workers have been enjoying

[36] See *Público*, 12^{th} of November of 2003, and *Expresso*, main daily and weekly Portuguese press.

Figure 3: Banking wage premium over five percentiles, 1985-2000

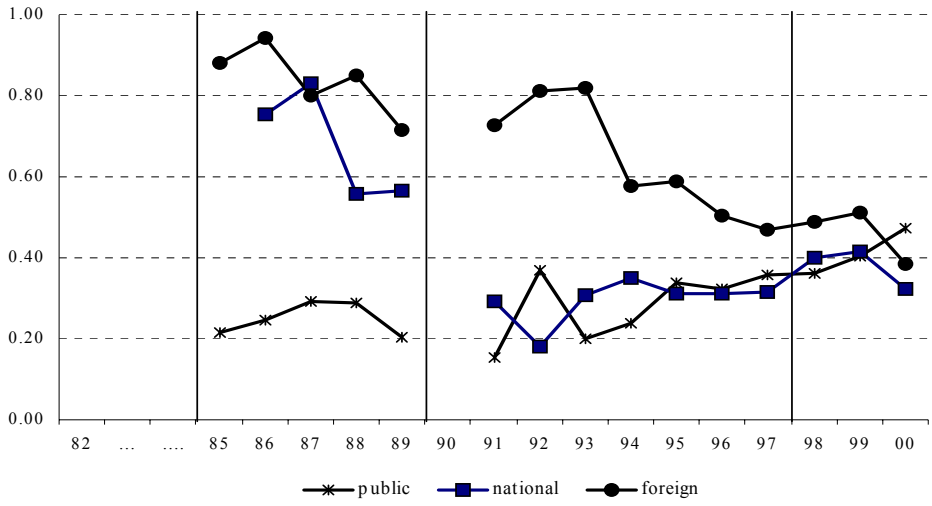


substantial higher gains while highly-skilled workers have been benefiting from much more modest gains. Moreover, this left skewed premium distribution typical from public labour markets appears unchanged/preserved over time, even after the tremendous ownership changes which occurred in the industry. The shape of the wage premium distribution hence reflects the strong role played by unions in the process of wage determination, as already noticed by Machado and Mata (2001). In particular, it mirrors the generous wage-promotion policy implicit in wage agreement contract as described in Section 2.3.

3.2.2 A closer look at specific groups

Having established the major characteristics of the banking wage premium movements', we next explore some of its sources of variation. Figure 4 plots the coefficients of the wage premium by each firms' ownership category. The coefficients are obtained from the previous model where the binary banking employment is now interacted with two ownership dummies.

Figure 4: Banking log wage premium by firm ownership, 1985-2000



As it clearly appears, the ownership breakdown does help us to understand the general movement of the banking wage premium. As seen previously (Figure 1) immediately following the opening of the market, the total wage premium rose. This corresponded to the entry of new firms, both national and foreign, in the market which in order to attract workers to a promising but uncertain new business had to reward them accordingly. At the same time incumbent firms also reacted (increased their relative pay) in an attempt to avoid losing their likely best workforce. Nevertheless, the continuous price competition imposed, placed a downward pressure and the wage premium fell remarkably for all firms' categories. Indeed, in 1989 the premium compared to its initial level in 1985, has decreased by .011, .190 and .169 log points for public, national and foreign firms, respectively. Therefore, these results, unlike those from Figure 1, while not conclusive, appear to be consistent with the estimates of the overall compensation shown in Table 4.

During the subsequent time periods, the expected downward trend in the wage premium is discernible *solely* for foreign firms. Despite remaining clearly above other firms' average premium,

the foreign wage premium fell .24 and .09 log points between 1989-1997 and 1997-2000, respectively. The national wage premium declined as well but only between 1989-1997, 0.25 log points. Note interestingly how this premium's movement clearly reflects the privatisation reform and the following wage adjustments, as the two largest firm privatisations' occurred in 1989 and 1994 and two banks were privatised in 1991.[37] The public wage premium, in contrast, rose continuously over time, competing directly with the remaining domestic firms. As a result the gap between the national and public premiums' was completely eliminated in 1999, as predicted in the previous section. Finally, notice that taking difference-in-differences estimates for each ownership category and adjusting them for the length of each period provides further support for ranking deregulation as the prime factor in the dissipation of rents, and hence consistent with those estimates shown in Table 4.

Turning now to the examination of the wage differentials among other individual characteristics. In particular, we look at the *average* premium estimates across years over the three time periods formerly defined by five categories: gender, tenure, education, occupation and regions.[38] Odd columns from Table.6 below present the *within* wage differential computed as the wage premium of each banking group compared to a similar group outside the industry. In the remaining columns, the wage differential is obtained in a similar way to the one just described for the ownership breakdowns. That is, it computes the wage advantage of a narrow group over the wage of *all* non banking workers, which here is termed as *between* wage differential.[39]

Starting with gender, regulatory reforms seem to have benefited women in particular. Indeed,

[37] The fall in the national wage premium is likely to be overvalued given the omission of the largest bank in the dataset in the year 1991.

[38] Evidence on age subgroups (not shown) replicates findings on tenure breakdowns.

[39] For each period the average of the between wage differentials for each category tends to be greater than the average of the wage differential over the same time period, presented in Figure 4-1, as the variables interacted with banking employment are not included separately in the equation.

female employees, already enjoying a sizable wage advantage when compared to their counterparts outside the industry, were able to reinforce over time relatively more their position than men. On the other hand, despite of earning always a lower wage premium than men ("between" columns), a significant reduction on the gender wage premium gap is observed (from .11 to .06 log points between the first and last periods), once the wage premium rose the most for this demographic group (.14 versus .09 log points) during the entire period. Therefore, Gary Becker's prediction about the impact of increased product market competition on gender discrimination appears to be confirmed: as discrimination becomes more costly to sustain in more competitive markets, the gender wage gap tends to be gradually eliminated.[40]

In terms of tenure breakdowns, comparison to similar seniority (outside industry) groups shows that the wage gains tend to be proportionally shared amongst the four tenure subgroups. However, a dissimilar result is drawn when comparing the wage advantage of the four tenure subgroups over all non-banking employees. In this case, the most experienced employees enjoyed not only the highest wage premium but also the largest wage gain (.15 log points) over time. The only exception refers to the privatisation period where privatisation, as seen previously (chapter 3), led to wage cuts more pronounced over a long time period of time for this particular seniority group.

Figures on wage premium by educational breakdowns reveal two apparently contradictory findings. Within wage differentials indicate that the wage differential defined within narrow educational groups is an *inverse* function of the level of instruction, as already discussed/illustrated in Figure 2. Hence, the most (lowest) educated workforce enjoyed the lowest (greatest) wage gains.[41] In

[40] Note that these results do not necessarily contradict previous findings from chapter 2 and 3, as the target population of analysis differs. Whereas in the previous chapters the focus relied on those employees who remained within the firm (either in part or full time), this chapter looks at all full time employees in the banking industry.

[41] An interesting finding not shown relates to the returns to education level in the banking sector, which despite being an increase function of the level of education, are always inferior when compared to those prevailing in the economy.

Table 6: Average of the log banking wage premium by categories and time period

Categories	Deregulation		Privatisation		Consolidation	
	Within	Between	Within	Between	Within	Between
Gender						
Male	.237	.377	.259	.372	.339	.470
Female	.345	.267	.388	.300	.475	.407
Tenure						
[0 -5[	.259	.221	.344	.322	.386	.361
[5 -10[	.243	.244	.337	.341	.418	.432
[10 -20[	.276	.283	.277	.294	.404	.416
[20 - [	.300	.314	.306	.338	.403	.461
Education						
No schooling	.457	.317	.529	.437	.667	.583
Primary	.420	.359	.457	.447	.584	.557
Preparatory	.359	.364	.426	.445	.596	.606
Secondary	.252	.364	.318	.440	.463	.567
Intermediate	.210	.385	.282	.472	.395	.558
Baccalaurate	.198	.508	.169	.552	.240	.613
University	.215	.512	.189	.603	.171	.640
Occupation						
Unskilled	.340	.230	.357	.213	.479	.333
Skilled personnel	.268	.206	.314	.216	.410	.317
Hight skilled personnel	.253	.336	.274	.364	.346	.378
Foremen/supervisors	.199	.302	.165	.291	.289	.432
Other managers	.210	.444	.266	.524	.332	.604
Top managers	.314	.550	.351	.606	.412	.706
Regions						
North	.272	.298	.470	.374	.515	.427
Lisbon Tagus Valley	.170	.256	.185	.280	.305	.391
Madeira and Isles	.409	.197	.485	.202	.546	.281

Source: Own computations based on QP, MSST (1985-2000).

contrast, when computing the wage differential for each educational group against all non banking workforce (between wage differential), the wage premium tends to be uniformly shared despite favouring the highest educational groups. Thus, seniority and experience, as implied by the wage agreement but unlike the economy-wide trend (Cardoso, 1997), seem to be an important asset in this particular labour market.

Inspection of occupational analog wage differentials disclose a slightly different picture. Within wage differentials favour the most both the lowest and highest occupations within the bank whereas the between wage differentials indicate that the highest occupations (managers and top managers) benefit the most from the liberalisation of the industry. In fact, managerial positions, already in a preferred advantage during the first period, suffered the sharpest increase in the *between* wage differential (.16 log points). This finding of higher compensation is then consistent with the managerial talent hypothesis. In more competitive environments, a higher level of pay is required to attract more talented managers (Hubbard and Palia, 1995).

Information on wage differentials by regions mainly reflect the regional asymmetry of pay prevailing in the country and the location of banking head offices. Therefore, the *within* wage differentials are greater in regions outside Lisbon and Tagus Valley, as the pay level is the highest in the capital of the country. The location of banking head offices (the largest new private domestic group is located in the North) explain the high levels in the *between* wage differentials found for the North and Lisbon regions.

3.2.3 Wage dispersion across ownership groups

We now focus on whether these banking regulatory reforms contributed or not to increased wage inequality. As it is documented (Cardoso, 1997 and 1998), wage inequality in Portugal has in-

creased dramatically throughout the 80s and 90s. Did the regulatory reform, either deregulation or privatisation, exacerbate the increase in the wage inequality? Table 4.7 below, presents averages of various measures of wage dispersion across banking ownership groups over the previous sequential time partition. Given the differences apparent in Table 4.6, we examine inequality measures for both the unconditional and conditional log of hourly wage, with the later being defined as the residuals of similar former regressions estimated separately per year and sector.[42]

Table 7: Wage dispersion in banking and non-banking industries

	Banking								Others	
	Unconditional				Conditional				Unc.	Cond.
	All	Pub.	Nat.	For.	All	Pub.	Nat.	For.	All	All
Deregulation										
90-10	.832	.800	1.203	1.360	.514	.536	.747	.916	1.207	.704
90-50	.513	.483	.696	.524	.321	.327	.388	.377	.804	.480
50-10	.319	.316	.507	.836	.193	.209	.359	.540	.403	.224
variance	.113	.104	.193	.273	.051	.057	.093	.159	.253	.096
Privatisation										
90-10	.949	.818	.938	1.344	.616	.652	.587	.833	1.348	.799
90-50	.603	.493	.600	.752	.353	.301	.338	.447	.888	.466
50-10	.346	.325	.338	.592	.263	.350	.249	.385	.460	.333
variance	.155	.125	.151	.285	.071	.061	.063	.158	.305	.126
Consolidation										
90-10	.930	.795	.977	.919	.529	.477	.536	.570	1.317	.826
90-50	.550	.490	.599	.511	.278	.236	.302	.229	.882	.481
50-10	.380	.305	.378	.408	.251	.241	.234	.341	.435	.345
variance	.151	.117	.164	.143	.058	.048	.060	.068	.295	.126

Source: Own computations based on QP, MSST (1985-2000).

Both (un)conditional measures indicate that the *pattern* of wage dispersion prevailing in the banking sector (as expected from the wage scale defined in the collective agreement) is similar to that found in the economy over the entire period of analysis. Therefore, wage inequality is particularly pronounced at the top of the wage distribution while at the bottom (of the wage

[42] The determination of (un)conditional inequality measures is popular in this literature. For example, Disney and Gosgling (1998) and Hisrch and Macpherson (2000), among others, applied it.

distribution) is relatively compressed. However, the *level* of wage dispersion (by either of the four measures) is substantial lower in the banking sector than the rest of the economy in each of the three periods. In particular, public firms, as opposed to private owned firms (both national and foreign), present the most egalitarian pay policy.

In terms of evolution, the wage dispersion in the banking sector accompanied the economy-wide trend. For instance, banking industry (average) variances in wages increased from .11 in 1985-1989 to .16 in 1991-1997 to .15 in 1998-2000, while economy-wide variances grew at the same pace, from .25 to .31 to .30. Within each of these three periods, the overall picture (not shown) changes only slightly. Between 1985-1989, the variance in wages declined .01 in both groups whereas between 1989-1997, it grew slower in the banking sector than in whole economy (.02 versus .05). Finally, between 1997-2000 the variance increased .02 in the banking sector while it remained constant in the economy. As a result, both the level and trend of the wage dispersion in the banking sector suggest that regulatory reforms, in themselves, contributed little to rising wage inequality in Portugal, which dismisses the former hypothesis advanced by Cardoso (1997).

How to conciliate the elevated wage premium of public firms, in particular over the last period, with the extremely compressed wage distribution? Is the profitable public sector unable to attract and retain high-skill workers, given its relative compressed wage distribution, as suggested by Borjas (2002)? We explore this hypothesis by looking at wage differentials between the public and private employees defined for fifteen narrow occupations, selected according to their importance in the industry, over the followed time partition.[43] Each occupation, defined in the wage bargaining contract, appears classified into three main categorical groups: (1) managerial, (2) operational

[43] Given the small size of each occupation per sector/year the raw differentials refer to the average difference within each time period. Note that the quality of the results remains unchanged when tenure within each occupational category is added as a variable control.

and (3) administrative and others. The correspondent *level* indicates the specific wage progression grade, with the level 18 (1) denoting the highest (lowest) grade within each occupation.

Table 8: Public wage differentials by ocuppation in the banking industry, 1985-2000

Occupations	level	Deregulation	Privatisation	Consolidation
Managerial				
director	18	-.305	.009[a)]	.282
manager	12	-.406	-.033	-.027
establishment manager	10	-.345	-.153	-
sector manager	10	-.436	.021	.170
inspector	11	-.809	-.000[a)]	.215
Operational				
computer analyst	14	-.099	-.071	-.027[a)]
computer programming	6	-.537	.038[a)]	-
financial advisor	7	-.416	-.020	.116
branch marketing	9	-.294	-.056	-.118
clerk	7	-.343	.069	.171
Administrative and others				
secretary	10	.013[a)]	-.024	.093
telephonist	5	-.153	-.002[a)]	.134
driver	5	-.259	-.049[a)]	.230
security	5	-.401	.042	.114
cleaner	1	-.426	-.170	-

Source: Own computations based on QP, MSST (1985-2000).
Note: all coefficients are statistically significant at the 10 percent level or less, except those marked with a).

The results shown here appear to reject this hypothesis. Immediately after the opening of the market, the higher payment in the private sector is pervasive to all occupations within the firm, irrespective of their nature (the secretaries being the only exception). Indeed, most occupations within both managerial, operational and administrative groups, enjoyed sizable wage premiums (above 30 percent). Meanwhile, the increased competition brought about by the privatisation process exerted a downward pressure on wages and the premium of private owned firms fell. This drop on the wage premium is again widespread among almost all occupations. Only two occupations remain highly paid - the cleaners and establishment managers. Finally, during the last period of

analysis, the wage premium is inverted in favour of public workers. In particular, workers in managerial positions and (their) drivers and some of those involved directly in typical banking activities - financial advisor and clerk- seem to have benefited the most.

4 Concluding remarks

Despite the worldwide implementation of regulatory reforms in product markets, the examination of the impacts on European labour outcomes has been relatively scarce. This study helps to narrow the gap in the European regulatory reform literature by addressing the effects of such reforms in the wage structure of the Portuguese banking sector. The Portuguese banking experience provides a particularly notable case study as, unlike former US evidence, it targeted a completely *public* regulated sector. Therefore, the reforms' diversity is inevitably superior comprising not only the common abolishment of price and entry barriers but also a privatisation program. Moreover, since both forms of liberalisation -deregulation and privatisation- were introduced sequentially, the Portuguese experience is potentially well-suited for yielding some further insight into the separate effects of each type of reform. The variety and richness of the data used in this singular regulatory context (in particular, the Portuguese matched employer-employee dataset) also allows us, not only to overcome some shortcoming of previous research, but also extend rent-sharing evidence in two new directions - examining the process of rents creation/dissipation across three ownership firm groups and over different regulatory reforms.

The main finding of this study is that after the complete regulatory reform, as the banking sector became *actually* profitable, workers were able to sustain the compensation advantage enjoyed during the regulated period. Therefore, regulatory reforms had the merit of transferring the weight of labour rents from the public budget (through unions) to banking firms. However, this

overall result does not imply that reforms did not affect labour earnings structure. Instead, the empirical evidence gathered here suggests that increased competition brought about by regulatory reforms and the consolidation process did depress the annual compensation trend of the industry throughout the unregulated period (on average an annual compression of 0.97 per cent). Moreover, this depression in the compensation trend was particularly more pronounced among public and private domestic firms over the deregulation period. During the subsequent periods, the privatisation and consolidation processes' were accompanied by strong productivity gains which, despite the weakening of the wage bargaining outcomes, prevented a statistically significant decline in the compensation trend for each of the three ownership firm groups.

Results obtained using individual level data, *Quadros de Pessoal*, tend to broadly confirm and enrich these overall findings (data for the regulated period is unavailable). During the deregulation phase, the increased competition in the market preclude the banking wage premium from rising continuously with the arrival of new high-paying private (both national and foreign) firms in the market. Therefore, the wage premium, either on average or at selected percentiles, appears to be the same magnitude at the beginning and at the end of the deregulation period, despite being clearly lower than our regulated premium benchmark. In the remaining periods, the wage premium *rose* steadily reflecting the trends both in the profitability, productivity and concentration levels of the industry. The only exceptions are workers in foreign firms, who saw their wage premium decline during the privatisation and consolidation periods, and workers in domestic private firms during the privatisation period. Despite being probably overvalued, this wage premium suggests that the increased concentration and profitability in the market are *replacing* prior sources of rent extraction (strong unions and entry and price barriers in the public banking sector). As further support for this hypothesis, we find that the relationship between compensation and profits

strengthened significantly, in particular for public firms, during the privatisation and consolidation periods.

The evidence provided here also shows that some specific groups benefited relatively more than others from this trend in the wage premium. Public employees, women (consistent with Gary Becker's theory), the most experienced and the least educated workforce, top managers (in particular, the public ones) and those living in the North and Lisbon areas enjoyed the most from the regulatory reforms. However, this unequal share of the wage premium did not contribute to the rise in wage inequality in Portugal, as advanced formerly (Cardoso, 1997).

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Appendix

Table 9: Banking adjusted wage premium, 1985-2000

		Percentil					Ownership			Within differentials	
Year	Mean	10	25	50	75	90	Pub.	Nat.	For.	Nat./Pub.	For./Pub.
1982	.379										
...											
1985	.229	.501	.402	.269	.140	.084	.216	-	.882	-	.666
1986	.262	.575	.475	.345	.181	.033	.246	.755	.944	.510	.698
1987	.311	.661	.577	.398	.216	.087	.293	.831	.798	.538	.506
1988	.312	.647	.558	.386	.213	.125	.288	.558	.850	.270	.562
1989	.231	.504	.429	.303	.177	.073	.205	.565	.714	.360	.508
1990	...	...	...	...	...	...	...	...	...		
1991	.213	.545	.424	.276	.135	-.002[a)]	.155	.292	.727	.137	.572
1992	.309	.583	.477	.357	.299	.222	.370	.180	.811	-.190	.442
1993	.283	.590	.492	.349	.214	.141	.201	.309	.819	.108	.618
1994	.328	.618	.505	.381	.273	.206	.237	.351	.575	.115	.339
1995	.332	.660	.549	.403	.275	.151	.339	.312	.590	-.027	.251
1996	.338	.666	.570	.430	.279	.131	.322	.311	.504	-.011	.183
1997	.338	.679	.592	.426	.247	.125	.359	.314	.471	-.045	.111
1998	.401	.705	.643	.512	.338	.220	.360	.402	.487	.042	.127
1999	.424	.711	.639	.508	.361	.260	.405	.417	.513	.011	.108
2000	.373	.684	.604	.459	.292	.189	.473	.324	.384	-.149	-.089

Source: Own computations based on Portugal, MSST (1985-2000).
Note: all coefficients are statistically significant at the 10 percent level or less, except those marked with a).

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