

**The evolution of internal labour markets  
in the Portuguese banking industry:  
A preliminary analysis with linked employer-employee data**

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**Abstract**

The banking industry, highly regulated in past years and more recently exposed to intense institutional, technological and organisational change, looks particularly suited for appreciating the evolution of internal labour markets (ILMs). Based on Quadros de Pessoal linked employer-employee data (LEED), the paper assesses the existence and the evolution of ILMs in the Portuguese banking industry between 1989 and 2003. By merging job grades recorded by QP with information on grade hierarchy provided by collective labour agreements, the proposed analysis overcomes the traditional weakness of LEED compared to personnel files, i.e. the poor discrimination between jobs and job grades. The examined data show that the labour markets of large Portuguese banks reproduce some characteristics of standard ILMs, including preferred recruitment at ports of entry, substantial opportunities of internal vertical and horizontal careers, and lower bounds of wage ranges attached to job hierarchy. However, the observed companies are ready to turn to competitive mechanisms in order to access crucial human resources not available in their ILMs or to cut the cost of non firm-specific human capital.

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**1. Introduction**

Literature has long demonstrated interest in understanding how employers and employees' micro-decisions impact on labour market outcomes. The model of the internal labour market (ILM) has been proposed as a suitable reference to frame labour and industrial relationships at large organisations in stable markets (Doeringer and Piore, 1971). However, the shift to a knowledge-intensive economy, characterised by ICT-backed intense exchange of information and goods, velocity, and outsourcing has significantly reduced the appeal of the ILM model. The change in the business environment shifts the attention from internal norms and procedures to the impact of market uncertainty on employment conditions (Grimshaw *et al.*, 1999). The growing trend to reward workers on the basis of their productivity and the following de-regulation of labour markets increase the resort to temporary employment, push towards individualised wage policies, and increasingly erode the privileges of “insiders” against “outsiders” (Reynaud, 1995; Gautié, 2005). Within the outlined framework, the goal of this paper is to assess the diffusion and the evolution of ILMs in the banking industry, which recently went through significant institutional, organizational and technological change. The empirical analysis bases on Quadros de Pessôal (QP), a longitudinal archive of linked employer-employee data (LEED) on the Portuguese labour market, and compares job allocation processes and wage setting processes in 1989 and 2003. The observed time frame has been chosen in order to capture the characteristics of the Portuguese banking industry before the deregulation process which preceded the entry to the EU common market in 1994 and after the institutional and technological transformation which characterised the banking industry in the 1990s.

It is generally understood from previous research that firms in the financial industry are closer to the ILM model, due to the highly regulated nature of their business environment (Eriksson and Werwatz, 2005; Seltzer and Merrett, 2000). Nevertheless, it

is also recognized that this industry has faced considerable change in recent years, which possibly eroded the main pillars of ILMs (Frey and Croce, 2001). The larger diffusion of individualised employment relationships in the banking industry compared to other industries (Gelade and Ivery, 2003) and the processes of skill restructuring and diversification which followed the important technological and institutional changes over the last 30 years (Ingham and Thompson, 1993; Buzzacchi *et al.*, 1995; Sparrow, 1996) make banking firms an interesting case study to appreciate the existence of ILMs and their changing importance over time.

Empirical tests to assess the existence of ILMs generally resort to single firm personnel files, in line with the important contribution by Baker *et al* (1994b). However, analyses on single firms suffer from the limited extensibility of their results. Following some recent contributions (e.g., Eriksson and Werwatz, 2005), this paper resorts to LEED in order to overcome the above problem and provide industry-level evidence on the existence and the evolution of ILMs in the Portuguese banking industry. Contrary to other LEED-based studies, the detail of information on jobs, job transitions and grade transitions is comparable to that of personnel files thanks to the merge of QP data with information from national collective labour agreements in the examined industry.

The rest of the paper is organised as follows. Section 2 surveys the relevant literature on the empirical assessment of ILMs. Section 3 presents the QP archive and the sampled employers and employees from the Portuguese banking industry. Section 4 presents descriptive evidence on the existence of ILMs in the examined industry and their evolution between 1989 and 2003. Section 5 draws the preliminary conclusions of this study.

## **2. Background literature**

Internal labour markets (ILMs) have long been regarded as organisational arrangements suited for developing firm-specific human capital and reinforcing organisational culture. ILMs, originally described by Doeringer and Piore (1971), are characterised by a limited number of ports of entry, which give access to internal career paths and encourage long-term employment relationships. Thanks to on-the-job training and the internalisation of organisational norms, employees in ILMs develop those firm-specific skills and culture that allow them to progress across subsequent job ladders and climb up internal

hierarchies. The firm-specific nature of required skills and the location of the ports of entry at the bottom of the organisation hierarchy advantage the career progression of internal employees against external candidates and provide the firm with the opportunity to test an employee's capabilities before assignment to a new job. Employment security and internal career paths partially shield ILM employees from the turbulence of external labour markets. This feature reflects in wages attached to jobs rather than individuals, as wages defined by administrative rules protect employees from the earnings variation of competitive labour markets, where the labour effort is rewarded at the value of its marginal product.

Not all researchers agree on the desirability of ILMs for employees. Radical economists consider the development of ILMs as an implementation of managerial control over the workforce, where the rules governing job hierarchies and career progression contribute to divide the workforce and to weaken concerted class action (see Ford *et al.*, 2007).

While theoretical contributions on ILMs abound in literature, empirical tests that assess the diffusion of ILMs are definitely more scarce (see e.g. Creedy and Whitfield, 1988; Eberth, 2003; Eriksson and Werwatz, 2005), mainly due to the lack or the difficult accessibility of appropriate data<sup>1</sup>. Most of the existing contributions are case studies based on qualitative research (Mace, 1979, Nowak and Crockett, 1983) or on the personnel files of single large companies, as in the case of Baker *et al.* (1994a), Trebe *et al.* (2001), Grund (2005), Lin (2005) and, more recently, Pfeifer (2008). Qualitative contributions generally examine whether the organizations under study display the standard features of an ILM (Creedy and Whitfield, 1988). Results usually support the basic stylized facts of ILMs<sup>2</sup>. Both Mace (1979) and Nowak and Crockett (1983), based on comparative case studies, find strong preference for internal promotions that provide career paths to newly hired employees. Moreover, the authors find evidence of the importance of job levels as determinants of the internal wage structure.

The empirical studies of ILMs based on personnel files provide less clear support to the theoretical predictions of ILMs. Baker *et al.* (1994b) find modest evidence of

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<sup>1</sup>Creedy and Keith (1988) report that on-purpose data collection is more common among sociologists and researchers in industrial relations, while economists usually resort to existing datasets.

<sup>2</sup> An exception is represented by Grund (2002), whose comparative study of a German and a US plant shows that wages at the German plant are explicitly attached to hierarchical levels, while the wage policy of the US plant ascribe larger importance to individual incentives.

the importance of specific human capital for both hiring and mobility patterns: i) considerable entry takes place in all jobs and all levels; ii) external hires are not significantly different from employees internally promoted to the same job; iii) the existence of promotion “fast tracks” weakens the relationship between tenure and career; iv) wages are tied to jobs but there is non-negligible within-level variance in wages. Nevertheless, administrative rules affect wage determination, as wage raises depend on the employees’ current wage relative to their colleagues. Within the same job, employees with higher wages receive smaller wage increases than those with lower wages, even controlling for performance. Rather than testing the overall model of the ILM, some contributions focus on specific aspects of the employment relationship. For example, van Herpen (2007) uses Danish LEED to study employee turn-over and ports of entry and exit. Ford *et al.* (2007) provide a qualitative case study on the process of internal recruitment. Hamilton and McKinnon (2001), based on personnel files from a railway company between 1921 and 1944, investigate whether internal careers conform to the rules of ILMs.

Instead of personnel files from a single firm, Eriksson and Werwatz (2005) use LEED to test the existence of ILMs in a sample of Danish firms in the private sector. Despite mainly descriptive in nature, the paper provides an attempt to use cross-firm and cross-industry data in the empirical analysis of ILMs. The proposed results provide partial support to the existence of ILMs in the observed sample. While careers path and promotions deviate from the ILM standards, wage setting is closer to theoretical predictions, as wages are attached to job levels and the latter explain the largest share of variation in earnings.

A different line of research is addressed by the contributions of Medoff and Abraham (1980), Bishop (1987), Lazear (1998), Flabbi and Ichino (2001), Dohmen (2004) and Serneels (2008), which examine the relationship between individual performance and within-firm wage differentials. Focused on incentive contracts, those studies find small evidence in support of individual performance as a driver of earnings dispersion and growth and reject the hypothesis that higher individual productivity due to accumulated experience explains the effects of seniority on wages.

If the empirical tests of the ILM model are few compared to theoretical analysis, even smaller is the number of papers dealing with the evolution of ILM rules in time.

Existing studies, based on the analysis of the wage policy at a single firm, argue that wage policies do not basically change in time (Baker *et al.*, 1994a; Seltzer and Merett, 2000); Trebel *et al.*, 2001; Grund, 2005; Lin, 2005).

### **3. The data**

#### *3.1. Collective labour agreements in the Portuguese banking industry*

The institutional setting of the Portuguese banking industry is characterised by large diffusion of multi-employer collective labour agreements and high participation rate in trade union by employees. Only 19% of employment relationships were ruled by single employer agreements in 2004, while in the same year union membership among employees achieved a remarkable 74%, yet significantly lower than the 94% rate recorded in 2002 (Lima *et al.*, 2008).

Collective labour agreements identify detailed jobs and job grades (Almeida, 2001). In particular, collective labour agreements in the Portuguese banking industry have traditionally identified four large occupational groups. The first group includes those jobs more closely related with core financial activities. The second group includes non industry-specific qualified jobs. The third group consists of non qualified jobs in support of financial activities, while the fourth group includes all residual jobs. Reflecting the rules of ILMs, an 18-level wage hierarchy which specifies the lowest boundary of gross basic earnings is associated to the above occupational groups. The two bottom levels are intended for employees in residual jobs, while employees in the third occupational group access wage levels between 2 and 4. Employees in the second occupational group access wage levels between 3 and 5, while employees in core jobs for the banking industry are entitled to wage levels between 4 and 9. Wage levels between 10 and 18 are intended for managerial roles. Progression to the next wage level is driven by either automatic tenure-based promotions ruled by collective agreements or by merit-based promotions.

The high level of union membership and the traditionally high profitability of this industry have traditionally guaranteed banking employees important additional rewards besides basic wage, including tenure-based wage increases, private medical assis-

tance and social welfare, favourable access conditions to house mortgage loans, and automatic annual increase of basic wage.

### *3.2. LEED on the Portuguese banking industry*

The LEED used in the empirical assessment of ILMs in the case of large Portuguese banks come from Quadros de Pessoal (QP), a longitudinal dataset which covers the population of Portuguese firms in manufacturing and services private sectors with at least one wage earner and their employees (for details, see Cardoso and Portugal, 2005; Mamede, 2006). Data are collected annually by the Portuguese Ministry of Employment and available years currently span from 1988 to 2007. Each year, collected information on employers includes location, industry, number of employees, firm age, turnover, capital stock amount and composition, number of local units, and identification of labour collective agreement in force. Information on employees includes employer, age, gender, education, occupation based on the Portuguese national dictionary of occupational titles, job coded according to the labour agreement in force, recruitment date, basic wage, overtime pay, additional regular and irregular pay, type of job contract, regular working hours, and overtime. Thanks to unique employer and employee codes, QP allows matching employer and employee information and mapping employees' careers across different years and different employers.

This study overcomes the problem of the less accurate definition of jobs and job transitions usually allowed by LEED compared to personnel files<sup>3</sup> by merging detailed information on collective agreements in the Portuguese banking industry with QP information on job levels. In particular, our analysis focuses on 7 core jobs of the banking industry, namely Area managers, Branch managers, Assistant branch managers, Sales executives, Retail bankers, Bank tellers, and Specialised professionals. While the first six jobs reproduce the organisational hierarchy of bank branches, Specialised professionals include heterogeneous staff jobs in support of banking operations which have acquired increasing importance in recent years, such as IT professionals, economists, or market analysts.

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<sup>3</sup> E.g., Eriksson and Werwatz (2005) adopt a rough 6-job classification which discriminates between top managers, high-level managers, middle management and supervisors, non-managerial white-collar and blue-collar employees, unskilled blue-collar and other employees. Despite using QP data, also Lima and Pereira (2001) and Silva and van der Klaauw (2006) adopt an 8-job classification in their studies on promotion patterns and career paths.

In order to appreciate the evolution of ILMs in the Portuguese banking industry, we compared employment in the 7 core jobs in two distinct years, 1989 and 2003. Individual career paths are assessed by comparing the employment situation in 1989 and 2006 with that of 1992 and 2006, respectively<sup>4</sup>. Thanks to detailed information from collective labour agreements in observed years on jobs and job levels, we were able to identify ports of entry, job transitions and grade transitions within the same job for all the 7 examined jobs<sup>5</sup>.

As ILM analysis requires information on sizable companies that stay on the market for a significant time (Eriksson and Werwatz, 2004), the empirical sample was selected by identifying all Portuguese large banks with at least 1,000 employees in 2006, which already existed back in 1989. Consequently, our sample consists of 13 banks which employed 38,618 unique employees in the two observed years.

Table 1 provides some descriptive statistics for the examined sample. In 1989 the examined labour market was characterised by low female participation rate (a bank declared only 4 female employees out of 954!) and low educational attainments. Compulsory school certificate was by large the most diffused educational qualification also among Area and Branch managers, while university degrees prevailed only among Professional specialists (83.3% of graduate or post-graduate employees). By 2003, the general picture had dramatically changed: average firm employment, graduate employees and female participation rate explode, respectively, by 29%, 333%, and 51%. The comparison between 1989 and 2003 also reveals a redistribution of employment across the examined core jobs that penalises bank retailers in favour of both more complex jobs (Managers, Sales executives, and Specialised professionals) and less complex ones (Bank tellers). The increase in the employees' average age (from 37.6 to 38.7 years old) and the contemporary rise in the percentage of newly hired employees (from 6 to 7.2% of total employment) suggest a higher resort to the external labour market in order to fill vacant positions at higher levels than ports of entry.

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<sup>4</sup> An interval of three years has been considered sufficient for the development of significant employment dynamics.

<sup>5</sup> The 2006 collective labour agreement provides a less detailed specification of jobs and job grades compared to 1989, 1993, and 2003. However, for 2006 QP also records the date of the last promotion. This information, coupled with the comparison between jobs held in 2003 and 2006, allowed to identify job changes and grade changes also for the period 2003-2006.



**Table 1. The sample: Descriptive statistics**

	1989	2003
<i>Firms</i>		
Mean employees per firm	2,783	3,579
Total employment	30,610	46,527
Employees recorded in QP db	20,086	45,120
New recruitments per employee	0.060	0.072
<i>Employees in core jobs</i>		
Observations in core jobs	12,297	36,326
Mean observations in core jobs per firm	1,118	2,794
Area managers [%]	0.15	0.05
Branch managers [%]	4.02	10.38
Assistant branch managers [%]	3.00	7.33
Sales executives [%]	0.75	6.14
Retail bankers [%]	79.89	46.40
Bank tellers [%]	6.20	16.04
Specialised professionals [%]	5.98	13.66
Female employees [%]	28.14	42.41
Age = 15-29 [%]	18.24	20.63
Age = 30-44 [%]	59.72	48.04
Age = 45-65 [%]	22.04	31.33
Average tenure	11.60	11.34
Compulsory school certificate [%]	55.15	20.13
High school diploma [%]	35.43	48.53
Graduate and post-graduate [%]	9.42	31.34

#### 4. The empirical analysis

The evidence presented in support of the existence of ILMs among large Portuguese banking firms and their evolution between 1989 and 2003 focuses on the processes of job allocation and wage setting. Job allocation has been assessed by examining the degree of openness of bank internal labour markets<sup>6</sup> and by outlining within-firm and between-firm mobility patterns. In an ILM, mobility patterns are expected to take place within a specific job cluster (Dunlop, 1957; Bosworth *et al.*, 1996), i.e. a set of jobs sharing common characteristics (Creedy and Whitfield, 1988) and driving the internal wage structure of an administrative unit. The exam of the wage allocation process tests the existence of wage premiums for internal promotions against external hires and assesses the correspondence between wage hierarchy and job hierarchy.

<sup>6</sup> Doeringer (1967) opposes closed ILMs, where all vacancies are filled by internal promotions, to open ILMs, where vacancies are filled thanks to the external labour market. Doeringer (1967) underlines that most ILMs are neither closed nor open but lie somewhere between those two extreme types.

#### *4.1. The job allocation process*

The exam of occupational inflows at ports of entries compared to higher hierarchical levels allows to characterise the degree of openness of the observed internal labour markets. With 98.6% of new recruitments in 1989 and 86.7% in 2003, Bank tellers, Retail bankers, and Professional specialists play the role of entry jobs to the banking sector. The lowest grades of those jobs constitute privileged ports of entry (Table 2). Among 1989 new hires, 77.2% of Bank tellers, 66.3% of Retail bankers, and 52.0% of Professional specialists start their internal career at the bottom grades of their jobs. Figures are on average lower, but still important, in 2003, when 68.0% of newly recruited Bank tellers, 47.7% of Retail bankers, and 56.5% of Professional specialists enter a bank at the lowest job grades.

Following the predictions of the ILM theory, new hires at ports of entry are younger than new entrants at higher job grades (on average, 26.6 years old against 28.2 for all new entrants in 1989, and 27.7 against 29.2 in 2003), and no entry takes place at the bottom grades of higher hierarchical jobs neither in 1989 nor in 2003. The lower educational attainments of new employees at ports of entry compared to new entrants at higher grades provides evidence in support of ILMs, confirming that firms regard internal on-the-job training and experience as substitute for education in building up the required firm-specific human capital.

Table 3 compares the incidence of internal promotions on total employment in the two observed periods. Internal promotions include either job changes or grade changes within the same job. The overall figure for internal job changes shows an increased resort to internal promotions between 2003 and 2006, compared with 1989-1992, balanced by reduced likeliness of grade advancement within the same job. Nevertheless, the analysis by job reveals that the overall increase in job change rate is entirely due to greater mobility at the higher levels of internal hierarchies. On the contrary, operative jobs such as Retail bankers and Bank tellers strengthen their vocation to be ports of entry rather than intermediate career steps. A higher mobility of the internal labour market is signalled by the lowering tenure at promotion experienced in time by both job changers and grade changers. The only exception is represented by Bank tellers, whose permanence in the job for long years after entering the bank signals skills that do not meet their employer's requirements.

**Table 2. New entrants, 1989 and 2003**

	1989	1993	1989	1993
Total new entries	778	2,614		
Entries at port of entry	563	1,404		
	<i>% New entries on Employment, by job</i>		<i>% Ports of entry on New entries, by job</i>	
Total	5.99	7.20	72.37	53.71
Area/Branch managers	1.72	3.22	0.00	0.00
Assistant branch managers	0.51	1.20	0.00	0.00
Sales executives	0.00	8.65		0.00
Retail bankers	5.75	8.75	77.22	68.00
Bank tellers	11.79	9.10	66.32	47.74
Specialised professionals	9.65	5.28	52.00	56.49
	<i>Average entry age at ports of entry, by job</i>		<i>Average entry age at higher levels, by job</i>	
Total	24.89	26.23	28.49	30.01
Area/Branch managers	--	--	38.67	36.67
Assistant branch managers	--	--	40.00	34.47
Sales executives	--	--	--	30.51
Retail bankers	24.77	26.01	27.78	27.71
Bank tellers	24.73	26.29	26.28	29.62
Specialised professionals	26.56	27.67	29.94	31.20
	<i>% Graduate and postgraduate entrants at ports of entry, by job</i>		<i>% Graduate and postgraduate entrants at higher levels, by job</i>	
Total	7.54	49.32	39.33	58.99
Area/Branch managers	--	--	22.22	28.33
Assistant branch managers	--	--	0.00	31.26
Sales executives	--	--	--	57.51
Retail bankers	1.37	47.75	35.61	67.51
Bank tellers	1.59	37.30	3.13	51.27
Specialised professionals	87.12	80.41	91.77	85.08

Table 4 summarises the percentage of vacancies filled by internal promotions in the two observed periods. While between 1989 and 1992 less than one in six new positions was filled by an internal promotion, this proportion rises to two in three between 2003 and 2006. If the overall figure points to a decreasing openness of the observed internal labour markets, a closer look at data by job shows that the aggregate evidence results from the opposition between a more intense resort to the internal labour market for high-skilled jobs (Managers, Sales executives, and Specialised professionals) and a recruitment policy for Retail bankers and Bank tellers almost exclusively based on external hires.

**Table 3. Internal promotions, 1989-1992 and 2003-2006**

	1989-1993	2003-2006	1989-1993	2003-2006
	Internal job changes on Employment [%]		Job changers' average tenure [years]	
Total	4.42	14.19	9.83	7.68
Area/Branch managers	10.87	13.06	16.96	9.35
Assistant branch managers	25.38	9.65	15.40	9.41
Sales executives	1.02	61.74	11.50	6.94
Retail bankers	0.56	0.00	9.49	5.97
Bank tellers	4.09	0.05	7.82	8.90
Specialised professionals	7.85	4.84	8.00	8.02
	Internal grade changes on Employment [%]		Grade changers' average tenure [years]	
Total	19.06	12.72	12.18	9.13
Area/Branch managers	20.99	11.90	22.18	9.14
Assistant branch managers	5.13	6.24	18.80	8.54
Sales executives	--	19.09	11.73	11.28
Retail bankers	20.69	8.75	11.48	4.28
Bank tellers	9.31	21.39	3.71	8.81
Specialised professionals	15.44	17.31	10.40	8.39

*1989-1992: 575 internal job changers, 2,477 grade changers  
2003-2006: 5,153 internal job changers, 4,622 grade changers*

**Table 4. Internal promotions on total vacancies, 1989-1992 and 2003-2006**

	[%]	1989-1993	2003-2006
Total		14.55	66.66
Area/Branch managers		24.05	71.43
Assistant branch managers		59.49	80.06
Sales executives		9.52	84.38
Retail bankers		14.17	0.00
Bank tellers		11.94	0.31
Specialised professionals		12.00	29.56

In order to analyse the evolution of mobility patterns, Tables 5 to 8 report job flows in the two examined periods. In particular, Tables 5 and 6 report within-firm and between-firm flows in 1989-1992 and 2003-2006, respectively. Tables 7 and 8 focus on within-firm flows in the two observed periods. In all tables, most of the observed transitions follow predictable patterns and confirm the existence of both vertical and horizontal job clusters. While the majority of employees continue in the same job, most of job changers take one step upwards in the organisational hierarchy. However, Tables 5 to 8 also show some less trivial evidence. First, demotions can be observed alongside with promotions. Second, some employees behave as “fast trackers” by climbing more than one ladder in the organisational chart during the examined 3-year interval. Third, verti-

cal career is not the only option for core employees of large Portuguese banking firms. Significant and increasing numbers of employees move to the staff area of Professional specialists and to other non-core jobs within the same bank. Moreover, data on job flows also show that managerial careers are not precluded to professional specialists.

The comparison of job flows in Tables 5 and 6 and Tables 7 and 8 confirms the higher internal and external mobility of labour in the second examined period. All the phenomena outlined for job flows in 1989-1993 look emphasised in 2003-2006, including fast trackers, horizontal technical or non-core careers for Retail bankers and Bank tellers, and vertical commercial and managerial careers for Professional specialists. Moreover, while virtually all people holding the same job in 1989 and 1993 stayed with the same employer, a significant share of people in the same job in 2003 and 2006 moved to a different employer in search for better working conditions or career perspectives.

**Table 5. Total job flows, 1989-1993**

		Job in 1993							
		Area/Branch managers (0)	Assistant branch managers (2)	Sales executives (3)	Retail bankers (4)	Bank tellers (5)	Specialised professionals (6)	Other job	Total (7)
Job in 1989	(1)	234	1	0	1	0	0	17	253
	(2)	44	70	0	1	0	0	2	117
	(3)	1	0	1	0	0	0	1	3
	(4)	11	100	1	2,771	33	62	170	3,148
	(5)	0	2	0	57	101	0	43	203
	(6)	2	0	0	3	0	374	38	417
	(7)	292	173	2	2,833	134	436	271	4,142

**Table 6. Total job flows, 2003-2006**

		Job in 1993							
		Area/Branch managers (0)	Assistant branch managers (2)	Sales executives (3)	Retail bankers (4)	Bank tellers (5)	Specialised professionals (6)	Other job	Total (7)
Job in 1989	(1)	2,101	7	2	0	0	8	545	2,663
	(2)	284	1,087	2	0	0	9	438	1,820
	(3)	153	156	1,380	0	0	24	119	1,832
	(4)	146	250	1,232	6,055	5	221	543	8,452
	(5)	28	18	595	0	2,711	25	1,060	4,437
	(6)	87	64	6	0	0	2,836	185	3,178
	(7)	2,799	1,582	3,217	6,055	2,716	3,123	2,890	22,382

**Table 7. Within-firm job flows, 1989-1993**

		Job in 1993							
		Area/Branch managers (1)	Assistant branch managers (2)	Sales executives (3)	Retail bankers (4)	Bank tellers (5)	Specialised professionals (6)	Other job	Total (7)
Job in 1989	(1)	1	230	0	0	1	0	0	248
	(2)	0	44	68	0	1	0	0	115
	(3)	0	1	0	1	0	0	0	3
	(4)	0	10	97	1	2,742	33	61	3,112
	(5)	0	0	2	0	53	99	0	197
	(6)	0	2	0	0	3	0	371	410
	(7)	1	287	167	2	2,800	132	432	4,085

**Table 8. Within-firm job flows, 2003-2006**

		Job in 1993							
		Area/Branch managers (1)	Assistant branch managers (2)	Sales executives (3)	Retail bankers (4)	Bank tellers (5)	Specialised professionals (6)	Other job	Total (7)
Job in 1989	(1)	1,750	7	2	0	0	7	519	2,285
	(2)	207	833	2	0	0	9	438	1,489
	(3)	112	138	1242	0	0	23	117	1,632
	(4)	97	87	859	4,915	3	178	530	6,669
	(5)	23	7	512	0	2,695	23	1,000	4,260
	(6)	56	18	3	0	0	2,423	176	2,676
	(7)	2,245	1,090	2,620	4,915	2,698	2,663	2,780	19,011

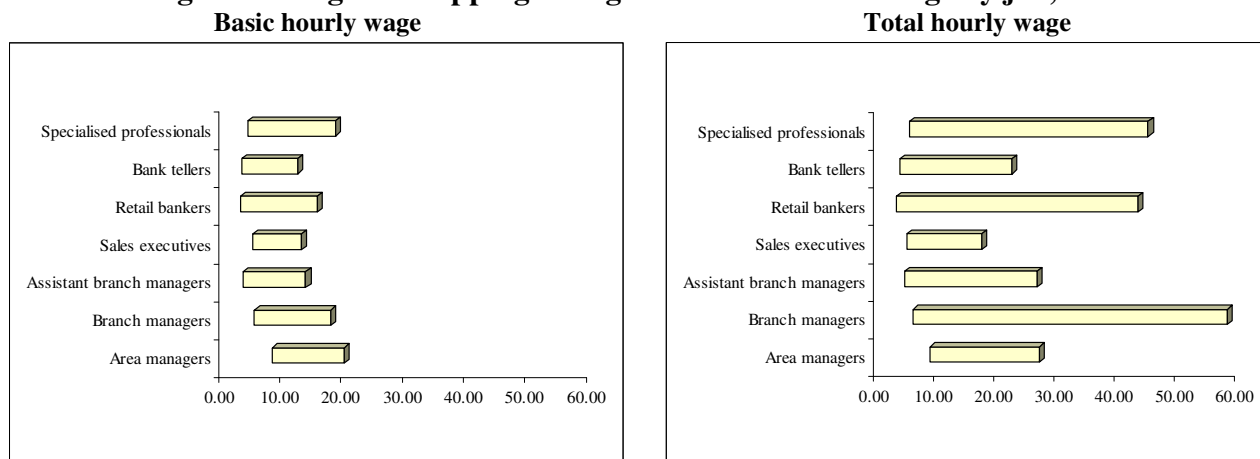
#### 4.1. The wage setting process

In order to test whether wage hierarchies reflect job hierarchies, as predicted by standard ILM theory, Figures 1 and 2 plot the range of basic and total hourly gross wage by job in 1989 and in 2003, respectively<sup>7</sup>. The most apparent evidence from comparing the two figures is the large overlapping of wages across different jobs. Never negligible, wage overlapping gets stronger when considering total hourly wage instead of basic hourly wage and extends to all considered jobs in 2003. Reflecting the prescriptions of collective labour agreements, the lower bound of basic hourly wages reproduces the hierarchy of jobs, yet differences get highly diluted for higher wage earners. The evidence reported in Figures 1 and 2 consequently suggests that Portuguese banking firms adopt

<sup>7</sup> All wages are deflated and expressed in euros 2002.

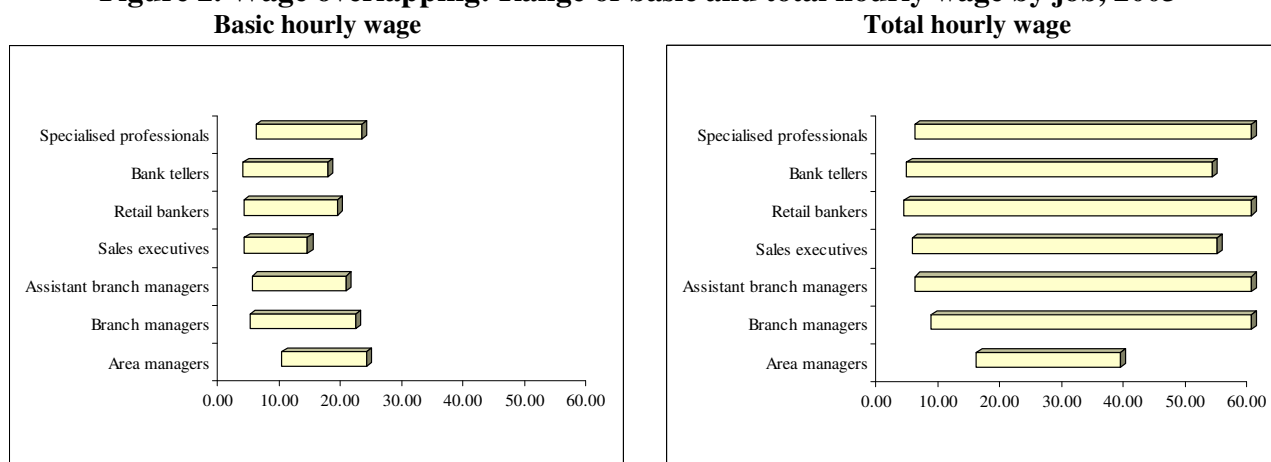
formal rules to differentiate wages according to their internal organisational hierarchy. However, those rules are effective only at the lowest wage level of each job. Firms use basic wage and, to a larger extent, additional components of wage to reward the differentiated performance of their employees. The comparison between Figure 1 and Figure 2 suggests that companies are increasingly using the wage leverage to exert effort from their employees and to import competition into their ILMs. This result is confirmed also by the evolution of the ratio of basic to total hourly wage by job (Table 9). For all core jobs, the share of basic wage on total reward is smaller in 2003 than it used to be in 1989. This effect is less apparent for female and younger employees, while the larger impact of the additional components of wage which characterised the total reward of new entrants in 1989 had disappeared by 2003.

**Figure 1. Wage overlapping: Range of basic and total wage by job, 1989**



*Deflated wages, base: 2002 = 100*

**Figure 2. Wage overlapping: Range of basic and total hourly wage by job, 2003**



*Deflated wages, base: 2002 = 100*

In search for evidence of relative advantages in the career progression of internal employees against external candidates, Table 10 compares the hourly basic and total gross wage received in 1992 and 2006 by employees who in 1989 and 2003 respectively held a different job, either in the same firm (internally promoted employees) or in a different firm (externally hired employees). Table 10 reports the average percentage increase in basic and total wage enjoyed by promoted employees, by job. Two pieces of evidence deserve special mention. First, firms make large use of non-basic components of wage to build up “attractive” compensation packages for their newly promoted employees, be they internally promoted or externally hired. Second, compared to 1989-1992, internally promoted employees between 2003 and 2006 enjoy a wage premium against colleagues in the same job hired in the external labour market. It has to be noted that in 2003-2006 external hiring involves an average wage premium only for Sales executives, a fast-growing job whose competences are hardly available in the ILMs of the observed banks.

**Table 9. Basic to Total Hourly Wage by job, 1989 and 2003**

	1989	2003	1989	2003
	All employees		New entrants	
Total	0.76	0.65	0.70	0.66
Area managers	0.87	0.56		0.54
Branch managers	0.71	0.60	0.73	0.61
Assistant branch managers	0.77	0.61	0.83	0.61
Sales executives	0.93	0.63		0.63
Retail bankers	0.77	0.70	0.71	0.71
Bank tellers	0.70	0.65	0.59	0.65
Specialised professionals	0.76	0.61	0.72	0.63
	Female employees		Employees up to 30 yrs old	
Total	0.78	0.67	0.73	0.70
Area managers		0.62		
Branch managers	0.83	0.60	0.80	0.62
Assistant branch managers	0.74	0.63	0.76	0.65
Sales executives		0.65		0.67
Retail bankers	0.78	0.70	0.74	0.71
Bank tellers	0.72	0.67	0.63	0.70
Specialised professionals	0.81	0.64	0.77	0.68

*Deflated wages, base: 2002 = 100*



**Table 10. Wage growth of internally promoted and externally hired employees**  
**[% growth 1989-1992 and 2003-2006]**

	1992 vs. 1989		2006 vs. 2003	
	Internally promoted	Externally hired	Internally promoted	Externally hired
<i>Hourly basic gross wage</i>				
Total	25.65	27.93	26.34	24.02
Area managers	--	--	75.55	--
Branch managers	10.07	23.30	37.82	28.59
Assistant branch managers	19.42	14.49	28.54	25.09
Sales executives	--	--	21.91	32.83
Retail bankers	24.98	30.20	21.08	22.02
Bank tellers	10.76	12.04	15.96	22.13
Specialised professionals	58.62	48.99	28.72	20.02
<i>Hourly total gross wage</i>				
Total	38.36	77.58	28.93	27.94
Area managers	--	--	63.68	--
Branch managers	32.59	59.09	39.03	35.97
Assistant branch managers	41.59	25.08	29.39	28.84
Sales executives	--	--	20.58	36.54
Retail bankers	34.36	89.61	24.81	24.95
Bank tellers	20.79	96.47	19.58	14.88
Specialised professionals	52.14	72.49	37.40	23.52
# obs.	311	48	2,355	3,237

*Deflated wages, base: 2002 = 100*

## 5. Concluding remarks

Despite preliminary and descriptive in nature, the above analysis throws some light on the existence and the evolution of ILMs in large Portuguese banking firms at the end of the last century. QP records confirm the existence of internal careers for a large share of employees, the persistence of ports of entry at the bottom of the banking hierarchy, and the increasing wage premium enjoyed by internally promoted employees against externally hired ones. This evidence suggests that the increasing educational qualifications achieved by employees do not fully substitute for on-the-job learning paths. Nevertheless, the growing inter-firm mobility, the higher entry rate by outsiders at all organisational levels, and significant wage overlapping across jobs show that industry-specific careers increasingly provide favourable alternatives to internal ones.

In summary, the empirical evidence suggests remarkable distance from the pure ILM model, yet the existence and the persistence of job allocation and wage setting rules deny the rupture of the ILM model. Some characteristics of wage setting, such as the increasing overlapping of earnings across jobs and the higher share of non-basic components of wage on total earnings witness the existence of individualised wage pattern and the influence of external labour market on wage setting.

LEED have proven a promising tool for micro-economic analyses such as the empirical exam of ILMs. Thanks to the merge between job grades recorded by QP and information on grade hierarchy provided by collective labour agreements, the proposed analysis has overcome the poor discrimination between jobs and job grades which often limits the effectiveness of LEED-based studies. However, the use of databases such as QP, where data are directly provided by firms, impose some caution in the choice of the empirical sample. The willingness to extend the analysis to the widest possible time frame has been hampered by the poor coverage of Portuguese firms and employees and the incomplete information provided in the first years of the survey. For example, interviewed firms in the examined sample reported information on 97% of their workforce in 2003, but this share lowers to 66% in 1989.

Our future research agenda includes the use of more sophisticated statistical and econometric tools to further explore the diffusion and the evolution of ILMs in the Portuguese banking industry. Moreover, by extending our analysis to additional years, we will be able to map within-firm and between-firm career paths and wage setting rules across different years.

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