Back to the Internal Labour Market?

Mobility patterns at large Portuguese banks

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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 suitable for appreciating the evolution of internal labour markets (ILMs). Based on linked employer-employee data from Quadros de Pessoal, the paper assesses the evolution of ILMs in the Portuguese banking industry between 1989 and 2002. By merging QP data with information 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 recruitment at ports of entry, substantial opportunities of internal careers and wage premiums over candidate without experience in large banks. However, the observed companies are ready to turn to competitive mechanisms in order to attract crucial human resources from competitors.

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1. Introduction

Literature has long been interested in understanding how employers and employees' micro-decisions impact on labour market outcomes. The internal labour market (ILM) has been proposed as a suitable model 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 exchanges 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 market uncertainty and volatility (Grimshaw *et al.*, 1999; Lazear and Oyer, 2004). The growing trend to reward workers on the basis of their productivity and the following de-regulation of labour markets boost the resort to temporary employment, push towards individualised wage policies, and increasingly erode the privileges of "insiders" against "outsiders" (Reynaud, 1995; Gautié, 2005).

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 (Seltzer and Frank, 2007; 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 weakened 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 evolution of ILM permeability over time. This paper takes advantage of Quadros de Pessoal (QP), a longitudinal archive of linked employer-employee data (LEED) on the Portuguese labour market, in order to assess the evolution of ILMs over time. More specifically, this paper explores whether banking firms increased their preference for hiring and better rewarding external candidates against internal candidates between 1989 and 2002. The observed time frame allows 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 transformations which characterised the banking industry in the 1990s. Thanks to the merge of QP data with information from national collective labour agreements in the

examined industry, and contrary to other LEED-based studies, the detail of information on jobs, job transitions and grade transitions used in this study is comparable to that of personnel files (see Baker *et al.*, 1994).

The rest of the paper is organised as follows. Section 2 surveys the literature on the empirical assessment of ILMs. Section 3 introduces the research hypothesis. Section 4 provides information on industrial relations in the Portuguese banking industry. Section 5 presents the QP archive and the matched employer-employee data used in the empirical analysis. Section 6 reports descriptive evidence on the existence of ILMs in the examined industry and their evolution between 1989 and 2002. Section 7 draws the preliminary conclusions from this study.

2. Background literature

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 support their progression along subsequent job ladders and internal hierarchies. The firm-specific nature of required skills and the location of ports of entry at the bottom of the organisation hierarchy advantage the career progression of internal employees against external candidates and provide firms with the opportunity to screen an employee's capabilities before assignment to a new job. Employment security and internal career paths partially shield employees from the turbulence of the external labour market. 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[1].

ILMs represent an organisational answer to their need for specific skills expressed by some large organisations and their administrative rules attempt to develop employees' attachment to their jobs. Nevertheless, the existence of perfect ILMs has been denied since the very initial conceptualisation (Doeringer, 1967; Doeringer and Piore, 1971). Empirical tests usually support the basic stylised facts of ILMs, but also recognise important departures from the standard model (see e.g. Creedy and Whitfield, 1988; Baker *et al.*, 1994; Trebe *et al.*, 2001; Eberth, 2003; Grund, 2005 Eriksson and Werwatz, 2005). For instance, Mace (1979) and Nowak and Crockett (1983), based on

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[1] 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.*, 1984).

comparative case studies, find strong preference for internal promotions that provide career paths to newly hired employees. Revisiting the concept of ILM thirty years after the original formulation, Piore (2002) acknowledges the existence of ILMs in a broad sense but insists on the variety of forms that ILMs may take.

Acknowledging that substantial entries from the external labour market take place at all hierarchical levels also in ILMs (Hassink and Russo, 2008; Lima and Centeno, 2003), recent empirical studies have focused on the degree of permeability of internal labour markets, rather than the existence of ILM as a pure model (Seltzer and Frank, 2007; Hassink and Russo, 2008; Chan, 1996). Some authors recognise that the permeability of ILMs is a consequence of the dynamic interaction between forces in the external (labour) market and the internal (wage) policy of the firm (Lazear and Oyer, 2004). The need to cope with or to anticipate solicitations from the external environment is recognised by Lazear and Oyer (2004) as a source of within-job wage dispersion. Nevertheless, empirical evidence suggests that internal promotions are preferred to external candidates in ILMs due either to their highly specific human capital, to the larger available information compared to external candidates, or to the opportunity of using promotions as incentives to reward better performance (Chan, 1996).

The emphasis on the permeability of ILMs shifts the attention to differences in the skills owned by internal and external candidates and to the existence of differentiated wage policies depending on the employee's origin. Economic literature has pointed out the dichotomy between general and specific skills (Becker, 1964). However, this radical opposition has been repeatedly questioned. Stevens (1996) claims that intermediate categories exist between the extremes of general and specific skills: the usefulness of some skills, named as "transferable skills", spans beyond the borders of a single firm, but is restricted to a well-defined cluster of employers. Other authors focus on non-competitive theory of training and explain the reasons that lead employers to bear the costs of general skills (Acemoglu and Pischke, 1998; Bishop, 1996; Katz and Ziderman, 1990). In addition, Piore (2002) casts doubts about the relationship between skill specificity and ILMs, arguing that a large share of skills required by firms organised as ILMs "are trivial or change with each make and model of the product, making them short-lived" (p.274). Other forces exerted by institutional actors internal and external to the workplace, such as trade unions or local communities, may as well explain the establishment and the consolidation of ILM rules and procedures (Piore, 2002).

3. Labour markets between hierarchy and competition
According to the standard vision of ILMs, recruitment at higher hierarchical levels almost exclusively takes place in case of unavailable internal candidates and external new

recruits will suffer a wage penalty against employees internally promoted to the same position. In recent years, technological, social and economic change has challenged the persistence of ILMs, at least in their "purest" form (Piore, 2002). Firms face growing interdependence with external actors, their borders get increasingly blurred, change takes place at faster velocity and the locus of power often spans across different organisations (Child and McGrath, 2001). Outsourcing, glocalisation and the overlapping of business segments increase skill transferability and intensify the competition to secure the quality and quantity of needed skills also in the case of firms organised as ILMs.

Depending on their degree of fungibility, skills that may be employed at different firms can be labelled as general skills when they are regarded as useful by the large majority of employers and are evenly distributed in the labour force. On the contrary, transferable skills (Stevens, 1996) can be defined as skills that are fungible only within a specific set of employers, e.g. within the borders of an industrial sector. Consequently, an increase in the fungibility of skills results in a new segmentation of labour markets. An intermediate solution, the market for transferable skills, adds to the traditional opposition between internal and external labour markets.

The identification of the market for transferable skills as an intermediate category between the internal and the external labour market allows to qualify the evolution of ILMs towards competitive solutions or still partially protected and institutionalised outcomes. The wage policy adopted by firms organised as ILMs depending on the employee's origin may in fact signal which type of skills firms are willing to acquire.

In case of a general move towards the recruitment of general skills, firms are expected to provide similar wages to employees in similar jobs. Consequently, low variance of wages within jobs and no wage advantage or penalty is expected for external recruits against internally promoted candidates. On the contrary, in the case of transferable skills a wider distribution of wages is expected to attract and retain the most productive or the better skilled individuals from closer competitors[2]. At the same time, people with transferable skills hired in the same industry are expected to enjoy a premium against the employees endowed with general skills hired in the external labour market. In addition, as candidates in the market for transferable skills provide their new employer with fungible skills, recruitment is expected to take place above the entry ports at the bottom of the organisational hierarchy.

We argue that the recent changes in the competitive environment of industrialised countries have a significant impact on the permeability of ILMs. However, we expect a move towards the external acquisition of transferable rather than general skills.

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[2] It has to be noted that skill transferability does not necessarily compromise the existence of a job hierarchy within the firm (Lazear and Oyer, 2004).

More specifically, we expect that changes in the wage policy of firms organised as ILMs signal the willingness to reward firm-specific and transferable skills to a higher extent than general skills. In addition, we also expect that the increased competition among close competitors in the market for transferable skills results in higher within-job wage dispersion. Our research hypotheses can be detailed as follows.

Hp1: In more recent years, new recruits from the market for transferable skills are not penalised against employees internally promoted to the same job. On the contrary, entries from the external labour market suffer a wage penalty compared to both internally promoted employees and new recruits in the market for transferable skills.

Hp2: In more recent years, the increasing differentiation of skills has encouraged the individualisation of wages, resulting in increased within-job wage dispersion.

4. ILMs at large Portuguese banks: Institutional framework

The institutional setting of the Portuguese banking industry is characterised by large diffusion of multi-employer collective labour agreements, with only 19% of employment relationships ruled by single employer agreements in 2004 (Lima *et al.*, 2008). Collective labour agreements in the Portuguese banking industry traditionally identify four main occupational groups (Almeida, 2001), namely core jobs closely related with financial activities (e.g., bank tellers or sales executives), non industry-specific qualified jobs, such as IT professionals, non qualified jobs in support of financial activities and 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 four 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 are entitled to wage levels between 4 and 9. Wage levels between 10 and 18 are intended for managerial roles. The high rate of union membership (94% in 2002 and 74% in 2004 according to Lima *et al.*, 2008) and the historically high profitability of this industry have long benefited banking employees with important additional components of reward besides basic wage, including tenure-based wage increases, private medical assistance and social welfare, favourable access conditions to house mortgage loans and automatic annual raises of basic wage.

Collective agreements also specify rules and procedures for hiring and internal promotions. Since 1986, entry to core jobs is restricted to candidates with secondary education (11 years of schooling), while the previous hiring standard required 9 years of schooling (1982 collective agreement). Additionally, unemployed bankers and family members of late or disable employees have pre-emption right for accessing job open-

ings. Progression to the next wage level is driven by either automatic tenure-based promotion ruled by collective agreements or by merit-based promotions. Tenure-based promotions become effective upon the completion of minimum years with the employer or within the job. Since 1984, at least 15% of their employees in core jobs closely related with financial activities are promoted by merit each year, up from the 5% level stated by the 1982 agreement. Pre-emption right to enter core jobs is given to internal candidates from qualified non-core jobs, upon completion of required education.

In recent years, several signals of change have contrasted the traditional ILM framed by collective labour agreements in the Portuguese banking industry. First, a growing number of employers actively challenge automatic tenure-based promotions, compulsory merit-based promotion rates and the limits imposed on hiring. In addition, the 2005 agreement significantly enlarges the resort to temporary employment, previously admitted only in case of unplanned tasks or illness or holidays of regular employees.

5. Quadros the Pessoal for employment at large Portuguese banks

The LEED used in the empirical assessment of ILMs at 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. Information on employers includes location, industry, firm age, turnover, number of employees, capital stock amount and composition, number of local units, and labour collective agreement in force. Information on employees concerns 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.

Compared to personnel files, LEED typically allow a less accurate identification of job grades and grade transitions. Also when detailed information is provided on job titles, the difficulty of outlining a clear hierarchy makes researchers focus on occupations rather than jobs[3]. This study overcomes the mentioned problem by merging de-

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[3] 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-collars and other employees. Also Lima and Pereira (2001) and

tailed information on collective agreements in the Portuguese banking industry with QP information on jobs and job grades. In order to fully exploit the available information on job title and job grade codes, our analysis focuses on six core jobs of the banking industry, reproduce the organisational hierarchy of bank branches. The examined jobs include managerial positions (Area managers, Branch managers and Assistant branch managers) and operative positions (Sales executives, Retail bankers and Bank tellers). The focus on a reduced number of professional profiles allowed the identification of lower job grades, which are expected to represent the ports of entry to the examined firms.

In order to appreciate the evolution of ILMs in the Portuguese banking industry, we contrast employment in the six core jobs in three couples of years, respectively 1989-1992, 1994-1997 and 1999-2002[4]. Thanks to detailed information on jobs and job grades from the collective labour agreements in force in the observed years, we were able to identify ports of entry, job transitions and grade transitions within the same job for all the six examined jobs.

As ILM analysis requires information on sizable companies that stay on the market for a significant time (Eriksson and Werwatz, 2005), the empirical sample was selected by identifying all Portuguese large banks with at least 1,000 employees in 2002, which already existed back in 1989[5]. Consequently, our sample consists of nine banks which employed 76,615 unique employees in the observed years.

Table 1 provides some descriptive statistics for the examined sample. In 1992 the labour market of large Portuguese banks was characterised by low female participation rate and low educational attainments. Female employees amounted to less that 15% of employees in core jobs and compulsory school certificate was by large the most diffused educational qualification also among Area and Branch managers. By 2002, the general picture has dramatically changed: average firm size, female participation rate and graduate employees explode, respectively, by 27%, 260%, and 640%. The comparison between 1992 and 2002 also reveals a redistribution of employment across the examined core jobs that penalises bank retailers in favour of managerial jobs and more qualified positions (Sales executives). Change in employment composition reflects the evolution of business tasks performed at bank agencies. Managers add the responsibility for the development of their local markets to the traditional role of supervisors, while sales executives represent an emerging occupational profile at bank agencies in charge of selling a growing range of products and services to increasingly segmented business

Silva and van der Klaauw (2006) adopt an 8-job classification in their studies on promotion patterns and career paths.

[4] After 2002 the job classification adopted by QP does not allow for the identification of job grades. An interval of three years has been considered sufficient for the development of significant employment dynamics.

[5] Due to the peculiarity of its mission, the Portuguese central bank was excluded from the sample.

and residential customers. In addition, the share of employees in core jobs on total employment recorded by the QP databases at the selected banks rises from 60% in 1992, to 71% in 1997, to 83% in 2002, revealing a steadily growing focus on operations. However, the observed changes do not affect the average tenure, which rounds 11 years both in 1992 and 2002, and the average age of employees, which only slightly increases from 39.0 to 39.3 years.

5. The empirical analysis

Table 2 reports the employment stocks in 1992, 1997 and 2002 and details the origin of employees by comparing their current job with the position they held three years earlier. Employees who stayed with the same employers in the examined periods are discriminated between those who received a grade or a job promotion and those who did not change their position[6]. The large banks included in the empirical sample are assumed to proxy for the market for transferable skills faced by large Portuguese firms, while the label "External labour market" includes all residual sources of employment, including unemployment and entries from the education system. In the case of recruitment from other large banks or from the external labour market, Table 2 separately reports figures for employees hired at entry ports and above.

The analysis of relative changes in the composition of employment stocks provides some interesting insights about the evolution of labour market at large Portuguese banks. The data reported in Table 2 witness the significant increase of inter and intra-firm employment flows between 1992 and 2002, yet those figures are largely due to the overall growth of employment at the examined banks. A more detail exam of data shows that substantial external recruitment always characterised the personnel policies of large Portuguese banks in the examined period, despite reduced dynamics in 1994-1997[7]. Nevertheless, a different pattern characterises recruitment at ports of entry, which has been detected only at the lowest hierarchical levels of retail bankers and bank tellers. The share of employees hired at the bottom grades of their job plunged from 15.7% in 1992 to 7.5% in 1997 and was still 8% in 2002. In summary, while the percentage resort to external candidates in the examined period follows a U-shaped curve, the relative importance of recruitment at entry ports halves between 1992 and 2002.

In addition, data in Table 2 reveal a more parsimonious use of promotions, which nevertheless stay well above the minimum 15% rate imposed by the collective

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[6] This latter category includes also the residual number of demoted empoyees.
[7] External recruitment amounts to 25.5% of total employment in core jobs between 1989 and 1992, plunges to 13.9% between 1994 and 1997 and returns to 26.8% between 1999 and 2002. A similar pattern is followed by the share of external recruitment on total vacancies, which respectively amounts to 26.8%, 17.8% and 33.0% in the three observed periods.

agreement also in 2002. Entries from other large banks increase in absolute numbers, but their relative incidence on total employment remains quite low. New recruits from other large banks represented 0.5% of total employment in core jobs in 1992, 0.4% in 1997 and 1.2% in 2002. Nevertheless, in the same years entries from other large banks steady rise from 2% to 3% to 5% of total external recruitment in core jobs. Moreover, the negligible examples of recruitment at entry ports from other large banks and the focus on the higher levels of bank agency hierarchies (managers and sales executives) provide indirect evidence of the transferable nature of the involved skills.

The evidence presented in support of the evolution of ILMs at large Portuguese banking firms and the rise of a market for transferable skills bases on OLS estimates of the determinants of the total hourly wage for core employees in three different years (1992, 1997 and 2002). The estimates include the origin of employees among regressors in order to control for possible advantages or penalisation of internal against external promotions. The second research hypothesis, concerning increasing within-job wage dispersion, is tested by examining changes in the coefficient of variation of basic and total hourly gross wage by job.

5.1. The rise of a market for transferable skills

Table 3 reports the return to recruitment channels for employees at large Portuguese banks. Panel A of Table 3 reports the results of basic wage equations in 1992, 1997 and 2002. Basic wage equations include among regressors education in years, a binary variable for gender which takes value 1 for female employees and theoretical experience in the labour market, calculated as current age minus theoretical age at the end of education. Panel B reports the estimates of enriched models where the origin of the employee substitute for experience and additional controls for job, agency size and firm are included. The enriched model also includes interacted terms between a binary variable for recruitment at entry port and the two jobs characterised by entry ports, i.e. retail bankers and bank tellers.

The basic wage equations in Panel A tell a standard story about the returns to education, gender and experience. Large banking firms reward education, female labour suffers from a significant yet declining in time penalisation and experience is significantly appreciated by employers, despite the negative coefficient of the quadratic term signals falling marginal returns. However, the variance explained by the estimated basic models is comparatively low, as signalled by the R-squared coefficient.

The equations in panel B show a totally different scenario and suggest that the variables omitted in the basic models generate substantial biases. First, after taking into account jobs, agency size and bank fixed effects the coefficient of the variables assess-

ing the duration of the educational curriculum turns from significant and positive to significant and negative. This outcome suggests that large Portuguese banks prefer job-based experience over education and that this preference, typical of ILMs, has continued along the observed time horizon. Second, the strong wage disadvantage of female employees detected in the first set of equations is probably due to their concentration in the lower hierarchical levels of bank agencies rather than to a systematic gender-based penalisation. In fact, despite still significant, the wage penalisation of female employees is considerably reduced in the estimates reported in Panel B. Third, compared to the reference category of Bank tellers, the coefficients of job-specific variables display a progressively consolidated wage hierarchy at bank agencies. The wage hierarchy is further confirmed by the significant penalisation suffered by employees who enter the company no more than three years before with a job grade corresponding to an entry port.

The non-null and significant coefficients of the binary variables accounting for the origin of employees show that recruitment channels matter. Compared to the reference category of employees internally promoted in the three previous years, employees who did not change employer, job or grade enjoy a growing wage advantage, suggesting an increase of tenure-based rewards. On the contrary, employees hired from the external labour market suffer a consistent penalisation which is particularly high in 1997, when the QP archive also registers a shrink in the share of external recruitments. These two facts support the hypothesis that large Portuguese banks met difficulties in recruiting from the external labour markets the skills they needed to support their steady growth in the mid of the 1990s. This intuition is supported also by the coefficient estimated for the variable which records entries from other large banks. This coefficient is not significantly different from zero in 1992 and 2002, showing no penalisation and no advantage against internally promoted candidates. However, the coefficient is significant and largely positive in 1997, suggesting that, under pressure to acquire as fast as possible the skills they needed to support their growth processes, large Portuguese banks turned to their competitors' employees and made large use of the wage leverage in order to attract the best candidates. The values assumed by the coefficient of "Other large banks" basically support the first research hypothesis, but also suggest that a market for transferable skills already existed in 1992, despite involving very low number of employees, because external candidates from competitors suffer no wage penalisation against internally promoted employees.

The inclusion of dummy variables to take into account firm-specific effects significantly improves the explanatory power of the estimated models. The R-squared coefficient of the OLS regressions increases from 0.441 to 0.673 in 1992, from 0.467 to 0.546 in 1997 and from 0.472 to 0.552 in 2002. The strong significance of the estimated

coefficients firm effects provide indirect evidence about the continuing importance of ILMs and the existence of autonomous wage policies at the firm level, despite the existence of industry-wide collective agreements

5.2. Within-job wage dispersion

The research hypothesis about the increasing within-job dispersion of wages is tested by calculating the coefficients of variation[8] by job in different years. The evolution of the coefficients of variation for basic and total wages is reported in Figure 1 and Figure 2.

Figure 1 shows a generalised reduction of within-job wage dispersion between 1989 and 2002. Interestingly enough, the downsizing of the coefficient of variation is much stronger for managers than for operative roles. In addition, until 1994 the extent of within-job wage dispersion reflects the job hierarchy of bank agencies, while after 1997 the highest wage dispersion is registered by sales executives, the professional profile characterised by the most unpredictable output. Figure 2 depicts a more varied scenario. The coefficient of variation declines for Area and Branch managers and is substantially stationary for Retail bankers. On the contrary, excluding a generalised decline in 2002 the coefficient of variation shows growing trends for Assistant branch managers, Sales executives and Bank tellers.

In summary, the second research hypothesis is only partially confirmed by empirical data. The declining within-job variability in the share of wage subject to the most stringent control by trade unions, i.e. basic wage, confirm the persisting strength of collective negotiation and the attempt to grant a "fair" treatment to all employees. Nevertheless, the selective increase of wage dispersion for at least some professional profiles due to the variable components of earnings suggest that employers' willingness to differentiate the reward recognised to individualised performances.

6. Concluding remarks

Despite preliminary, the above analysis throws some light on the evolution of ILMs in large Portuguese banking firms at the end of the last century. QP records allowed to assess the existence of internal careers for a large share of employees, the persistence of ports of entry at the bottom of the banking hierarchy associated with wage penalisation, the higher resort to internal promotions against external recruitment, the significant wage premiums enjoyed by internally promoted employees against candidates without experience in other large banks and the declining within-job dispersion of basic wages. This evidence, coupled with the negative returns to education, suggests that the increas-

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[8] The coefficient of variation is calculated as the ratio of the absolute mean to the standard deviation for the observed variable.

ing educational qualifications provided by the employees of large Portuguese banks do not substitute for on-the-job learning paths. Nevertheless, the growing inter-firm mobility, the substantial entry rate by outsiders at all organisational levels and the existence of a market for transferable skills that does not penalise new recruitments from competitors against internal candidates show that the observed companies are ready to turn to competitive mechanisms in order to overcome the internal shortage of crucial human resources or to cut the cost of non firm-specific human capital.

In summary, if some pieces of empirical evidence suggest remarkable distance from the pure ILM model, other ones signal that large Portuguese banks are far from adopting personnel policies targeting competitive labour markets. The empirical analysis basically supports the first research hypothesis. Contrary to new entrants from the external labour market, new recruits from the market for transferable skills are not penalised against employees internally promoted to the same job. Nevertheless, and despite the low numbers involved, a market for transferable skills already existed in 1992 and its rise cannot be consequently ascribed to the institutional and technological changes of the 1990s. The second research hypothesis found more limited support, as increase in within-job wage dispersion is limited to the variable components of wage for some selected professional profiles.

LEED have proven to be a promising tool for 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, 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 incomplete information on employee records provided in the first years of the survey. For instance, the sampled firms provide employee records for 99% of their work-force in 2002, but this figure lowers to 67% in 1989.

Our future research agenda includes the use of more sophisticated statistical and econometric tools to further explore 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 along a richer time horizon.

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Table 1. The sample: Descriptive statistics

	1992	1997	2002
Firms			
Mean employees per firm	3,754	3,969	4,762
Total employment	30,032	31,752	42,857
% employees recorded in QP	67.34	99.50	99.20
Employees in core jobs			
New recruitments per employee, core jobs	0.202	0.126	0.244
% of core jobs over total recorded employment	60.19	71.06	82.87
Mean observations in core jobs per firm	1,522	28,07	4,404
Female employees [%]	14.97	27.75	38.99
Compulsory school certificate [%]	46.93	39.42	23.31
High school diploma [%]	49.21	56.48	51.83
Graduate and post-graduate [%]	3.87	4.09	24.86
Area and Branch managers [%]	5.78	12.42	14.44
Assistant branch managers [%]	3.47	4.28	6.10
Sales executives [%]	1.46	1.43	5.29
Retail bankers [%]	73.47	70.29	68.24
Bank tellers [%]	15.81	11.58	5.93
Age = 15-29 [%]	30.92	25.74	22.57
Age = 30-44 [%]	43.27	45.92	46.75
Age = 45-65 [%]	25.81	28.34	30.68
Average tenure [years]	10.88	12.17	10.99

Table 2. Origin of employment stocks – 1992, 1997, 2002

1992 stock		Area and Branch manager	Assistant branch manager	Sales ex-ecutive	Retail banker	Bank teller	Other job	Total
Same bank	No promotion in 1989-1992	114	48	1	362	55	477	1,057
	Promotion in 1989-1992	565	352	172	6,155	1,241	6,604	15,089
Other large banks	Entry at entry port	0	0	0	0	1	0	1
	Entry above entry port	5	6	0	48	3	18	80
External labour market	Entry at entry port	0	0	0	1,062	757	0	1,819
	Entry above entry port	52	26	22	1,075	50	952	2,177
Total		736	432	195	8,702	2,107	8,051	20,223

1997 stock		Area and Branch manager	Assistant branch manager	Sales ex-ecutive	Retail banker	Bank teller	Other job	Total
Same bank	No promotion in 1994-1997	550	353	50	3536	780	2371	7,640
	Promotion in 1994-1997	2404	671	255	10910	1532	4186	19,958
Other large banks	Entry at entry port	0	0	0	1	1	0	2
	Entry above entry port	48	1	3	43	1	27	123
External labour market	Entry at entry port	0	0	0	1132	305	0	1,437
	Entry above entry port	113	28	50	1438	247	558	2,434
Total		3115	1053	358	17060	2866	7142	31,594

2002 stock		Area and Branch manager	Assistant branch manager	Sales ex-ecutive	Retail banker	Bank teller	Other job	Total
Same bank	No promotion in 1999-2002	1,094	613	113	4,126	651	2,144	8,741
	Promotion in 1999-2002	3,056	1,135	1,147	12,943	910	4,218	23,409
Other large banks	Entry at entry port	0	0	0	22	0	0	22
	Entry above entry port	95	17	27	296	0	112	547
External labour market	Entry at entry port	0	0	0	2,050	208	0	2,258
	Entry above entry port	893	456	558	4,743	79	807	7,536
Total		5,138	2,221	1,845	24,180	1,848	7,281	42,513

Table 3. Return to recruitment channels

Panel A -Basic model	Dep.var: ln of deflated **1992** tot hourly wage				Dep.var: ln of deflated **1997** tot hourly wage				Dep.var: ln of deflated **2002** tot hourly wage			
	β	Std. Error		t	β	Std. Error		t	β	Std. Error		t
(Constant)	1.4921	0.024	***	63.166	1.6048	0.013	***	120.231	1.2407	0.013	***	98.967
Years of education	0.0363	0.002	***	22.313	0.0224	0.001	***	25.371	0.0398	0.001	***	52.892
Gender	-0.1698	0.008	***	-20.523	-0.0762	0.004	***	-20.889	-0.0659	0.003	***	-21.804
Experience	0.0131	0.001	***	12.413	0.0265	0.001	***	40.642	0.0380	0.001	***	68.378
SqExperience	-0.0001	0.000	***	-3.240	-0.0003	0.000	***	-24.756	-0.0004	0.000	***	-37.652
	F-test	313.651	***		F-test	1,130.734	***		F-test	3,314.808	***	
	Adj R^2	0.114			Adj R^2	0.196			Adj R^2	0.322		
	N	9,718			N	18,504			N	27,885		

Panel B - Enriched model	Dep.var: ln of deflated **1992** tot hourly wage				Dep.var: ln of deflated **1997** tot hourly wage				Dep.var: ln of deflated **2002** tot hourly wage			
	β	Std. Error		t	β	Std. Error		t	β	Std. Error		t
(Constant)	2.403	0.012	***	207.609	2.222	0.008	***	283.131	2.235	0.010	***	216.837
Years of education	-0.005	0.001	***	-6.372	-0.005	0.001	***	-9.378	-0.007	0.000	***	-14.459
Gender	-0.052	0.005	***	-9.743	-0.043	0.003	***	-14.851	-0.051	0.003	***	-20.150
Area_Branch_mgr°°	0.602	0.009	***	68.673	0.375	0.005	***	78.163	0.441	0.006	***	72.707
Ass_branch_mgr°°	0.406	0.010	***	40.140	0.358	0.006	***	55.165	0.332	0.007	***	47.861
Sales_exec°°	0.035	0.014	*	2.547	0.118	0.011	***	11.202	0.113	0.007	***	15.948
Retail_banker°°	-0.063	0.006	***	-10.629	-0.001	0.004		-0.187	0.011	0.006	**	1.907
Retail_banker*Entry_port	-0.279	0.008	***	-33.468	-0.059	0.009	***	-6.630	-0.319	0.007	***	-45.518
Bank_teller*Entry_port	-0.164	0.010	***	-16.498	-0.152	0.013	***	-11.543	-0.320	0.015	***	-20.719
Same bank, unpromoted°	-0.035	0.009	***	-3.684	0.002	0.003		0.790	0.037	0.003	***	10.974
Other large banks°	0.035	0.023		1.483	0.212	0.020	***	10.739	0.013	0.010		1.280
External labour market°	-0.029	0.007	***	-4.234	-0.120	0.006	***	-21.623	-0.033	0.004	***	-8.931
ln(Agency employees)	-0.004	0.002	***	-2.905	0.000	0.001		0.203	0.026	0.001	***	24.574
Bank fixed effects	Yes				Yes				Yes			
	F-test	1,114.586	***		F-test	1,172.767	***		F-test	1,718.423	***	
	Adj R^2	0.673			Adj R^2	0.546			Adj R^2	0.552		
	N	9,718			N	18,504			N	27,885		

OLS regressions; °Reference category: Same bank, promoted; °°Reference category: Bank teller

Figure 1. Changes in the coefficient of variation, basic hourly gross wage
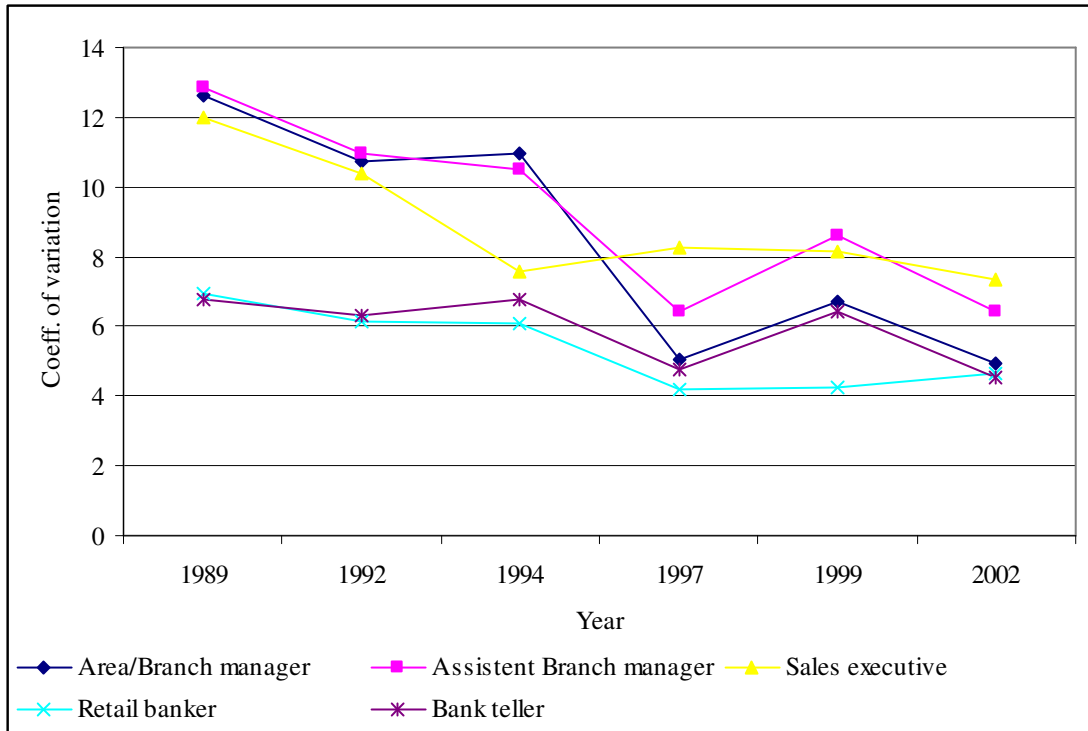

Figure 2. Changes in the coefficient of variation, total hourly gross wage