The evolution of wage structures in Portugal 1982-1992
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Chapter 1

Introduction

1.1 Motivation for the study

The interest in the Portuguese labour market has widened in recent years. This interest was boosted by a good labour market performance after the mid-1980s compared to other western economies. Authors of recent empirical studies have used aggregate data and pointed to the role of wages for that performance. Others have asserted that a rigid dismissal legislation is backed by high wage flexibility (OECD, 1989, OECD, 1994a). Portugal reveals an abnormally high responsiveness of real wages to unemployment (OECD, 1994a). Such a sensitivity is often associated with the existence of a non-generous and very strict unemployment benefit system (OECD, 1989, Blanchard and Jimeno, 1995). In addition, it is well-known that wages in Portugal are low compared to other western economies. These lower wages reflect lower productivity of labour, which itself may indicate reduced levels of physical and human capital (see Branco and Mello, 1992).

The 1980s was a period of structural adjustment during which Portugal joined the European Union (hereafter the EU) and embarked upon a path of liberalisation and modernisation of the economy. Awareness that the scarcity of physical and human capital had to be overcome in order to modernise led to the implementation of measures towards improving skills within the labour force and to economic restructuring. This was largely supported by structural funds from the EU for training, infrastructures and productive investment. These funds amounted to 2.4 percent of the GDP in 1988 and in 1989, and rose to 2.7 percent in 1990. Moreover, a programme of deregulation of the economy was initiated as was the privatisation of public companies.

The wage structure arguably reflects the functioning of the labour market and changes occurring in the economy. Although various studies exist at a microeconomic level for Portugal, research in this area has just begun. For instance, Psacharopoulos (1981), Silva (1985), Kiker and Santos (1991), São Pedro and Baptista (1992), Santos (1995) and Kiker et al (1997) calculate the returns to education. With the exception of Santos (1995), each of these studies examines a single year. Cardoso (1997) examines the evolution of overall wage inequality. Her study concludes that inequality was high and rising throughout the 1980s. These results are in line with those in Rodrigues (1994), but they contrast with Gouveia and Tavares (1995), who claim a reduction of wage inequality.

The wage structure in Portugal and its evolution certainly requires further investigation. Moreover, a comparison with available results of other countries seems appropriate as well. This study collects comparative empirical evidence and aims to give a comprehensive picture of the process of wage formation in the Portuguese labour market. For that purpose, it examines the wage structure and wage inequality during the 1980s and early 1990s,
particularly the years 1982, 1986 and 1992. This time period is important because the study captures the situation four years prior to joining the EU, the situation at the time of entering the EU (1986), and the situation six years later. It is also noteworthy that the study is consistent in that we use the same data source and the same estimation procedures over the research period. Obviously this is a desirable condition if one wants to make intertemporal comparisons.

There is yet no standard view on how to model wage formation and what the dominant motives are in determining the outcome. For instance, on one side, the standard competitive model states that in a market economy, wages correspond to equilibrium prices which are determined by the forces of demand and supply of labour. Wages are an instrument guiding the allocation of resources. Firms hire workers up to the point where their marginal productivity equals the wage rate, labour is freely mobile, and in the long-run the labour market clears. In equilibrium the marginal productivity of labour in different uses is equalised. Apart from compensating differentials, wage differences among workers would indicate differences in the amount of human capital. On the other side, labour economists have increasingly realised that the labour market equilibrium can differ from the competitive one. In particular, wage structures may deviate from those predicted by a competitive equilibrium, because they are an instrument for the firm in that they provide an incentive for employee effort, they can reduce turnover costs, or they can act as a selection device (for a survey of these developments, see Hartog and Theeuwes, 1990). Moreover, wages are largely a result of negotiations and will reflect differences in bargaining power between workers and management as well as the organisation and the goal of the negotiations. Indeed, the wage structure probably reflects a complex process involving market forces, union bargaining, firm policies, institutional constraints, imperfect markets, matching of workers to jobs, and randomness.

This study distinguishes between wage differences arising from competitive and non-competitive forces. Within the competitive effects, the returns to education will receive particular emphasis. The size and evolution of this indicator may be especially interesting to a country whose educational attainment is fairly low when compared to other western economies. Investment in education is often seen as a key factor for enhancing productivity. Portugal is typically characterised by a low level of education within the labour force, and it is mostly believed that developments in education are critical to bringing productive capacity and (ultimately) wages more in line with those of other EU countries. However, in economic theory, education is an investment in which individuals or families exchange the present for future consumption. Therefore, one must expect that the rate of return on education investments plays an important role in determining educational attainment and participation. In addition, understanding of the size and movements of the rate of return to education seems important for policy makers. This study pays special attention to the evolution, potential biases, and heterogeneity of the returns to education; the contribution of these returns to wage inequality is also examined. Within the non-competitive effects, we particularly focus on industry affiliation and bargaining regimes (but also on firm size). The findings are tentatively
linked with a description of the Portuguese institutional setting and to changes occurring in Portugal during the period of examination. They are also compared with results available for other economies.

1.2 Layout and an overview

The layout of the study is as follows. Chapter 2 contains background information on the developments taking place in Portugal over the last decades. It focuses on economic growth, employment, institutional aspects of the labour market, and the educational system. The latter two issues receive special emphasis.

A first look at the wage structure is provided in chapter 3. This chapter acts as a diagnostic device and has several goals. We first examine the evolution of overall wage inequality. Next, we investigate the development of the returns to human capital variables (i.e. education, experience and tenure). Third, we examine the extent to which differences in human capital are sufficient in explaining differences in wages across individuals or whether non-competitive effects are also operative. Within the non-competitive effects, inter-industry wage differentials are examined in great detail. Finally, whenever possible, comparisons with other European countries and the U.S. are provided in order to show the position of Portugal in relation to other economies. The chapter concludes that overall wage inequality has increased over time. Returns to education have also increased. Moreover, wage-effects associated with industry affiliation and firm size are quite high according to international standards.

Chapter 4 focuses on returns to education. Typically, empirical applications of wage equations have relied on ordinary least squares (OLS) estimators. However, it has been argued that OLS estimates of the rates of return to education may be biased because they are unable to isolate the contribution of education from the contribution of unobserved ability to earn. Another related problem follows from the recognition that education is a potentially endogenous variable in the wage function. It has also been argued that measuring education with error might be a serious problem. Each of these problems violates the OLS assumption of non-correlation between the error term and regressors. In chapter 4 we compare OLS, IV and two-step method estimates. On average, the results seem to indicate that OLS returns to education are as high or higher than those obtained from alternative estimators.

Chapter 5 deals with education and jobs. In the standard human capital wage equation wages are determined by individual characteristics. Job characteristics are the major determinants in segmented labour market theories. Assignment models combine individual and job characteristics and emphasize the existence of an assignment problem in the labour market. The chapter is centred on a symmetrical treatment of the educational component of labour. The chapter reveals that there are discrepancies between education actually attained by the individual and that which is required in the job he or she performs. These deviations imply heterogeneity in the returns to education: they depend on the job where the individual ends up in the labour market. Neither the individual's education nor the education required for the job
are alone sufficient for determining wages. They must be considered jointly. In addition, the evolution of the returns to education should not be interpreted only in terms of mean values of actual and required education. Finally, the evolution of the returns to required (adequate) education has contributed substantially to the overall increase of wage inequality. A second major contribution to the increase in inequality is given by the dispersion of the residuals in the wage equation.

Another way of uncovering heterogeneity in the returns to education is through the use of quantile regressions. Using this technique allows us to assess whether the returns to education are equal across the entire conditional wage distribution (as implied in the ordinary least squares estimation). This issue is addressed in chapter 6. The results indicate that the effect of education is not uniform across the entire distribution: they tend to increase with the quantile levels, although exceptions do exist. Restricting to “the mean effect” hides this heterogeneity.

Chapter 7 analyses rates of return on human capital in the region of Lisbon and the rest of the country. We apply an assignment model of heterogeneous workers to heterogeneous jobs. The model predicts a high return to human capital being associated with similar workers being assigned to more complex jobs. This implication is supported by the data. As will be discussed there, Lisbon and the Tagus Valley has historically had more advanced technology; it is the centre of modernisation where new technologies requiring highly skilled labour are introduced. Equally skilled workers receive more complex jobs in the high-tech economy emerging in Lisbon than in the rest of the country.

Chapter 8 concentrates on a particular aspect of the institutional setting. It analyses the effect of the bargaining regime on wages. Most studies on the role of collective bargaining to wage formation have been concerned with wage differentials or differences in the wage structure between unionised and non-unionised workers. However, the structure of bargaining actually involves different types of arrangements in Portugal and elsewhere in Europe. Furthermore, the wage-effect of negotiated contracts goes far beyond union membership and beyond firms represented at the bargaining table. Therefore, the estimation of wage differentials between union and non-union members, or even firms represented and not represented in the negotiations may be meaningless. In this situation the analysis should distinguish whether the unit of analysis is covered by a collective bargaining contract rather than simply portray a dichotomy between union and non-union members. In addition, the type of bargaining regime coverage should be taken into account. Although there is extensive literature on union bargaining effects in countries with a dichotomous structure such as the U.S., empirical work that acknowledges the bargaining regime structure in other countries is scanty. Chapter 8 aims to contribute to this scarce literature. In some cases, wage mark-ups between bargaining regimes are substantial. Moreover, the wage structure differs according to the bargaining regime.

Finally, the main conclusions and issues requiring further research are summarised in chapter 9.