WAGE SETTING IN THE PORTUGUESE LABOR MARKET: A MICROECONOMIC APPROACH*

*Pedro Portugal***

"Portuguese businessmen have stopped investing and stopped working on projects. They do not see any markets; they do not see the cheap labour there used to be; they do not see infrastructures being developed; they receive no clear signals from the State; they do not believe that the existing economic policy is either permanent or viable. Thus have they launched the Portuguese economy into uncertainty and decadence. A recession born of circumstances? No; rather a deep-seated, complex demand for change in structures and in the economic, political and social system."

"A rigorous analysis carried out around 1960 would have made it clear that the Portuguese development model, over what could in certain respects be a medium-term period, will play itself out."

Para onde vai a economia portuguesa?

Francisco Pereira de Moura (1969).

1. INTRODUCTION

It would seem to be generally accepted in Portugal that "the economic model based on low wages has played itself out." This proposition presupposes that there is an economic development model that characterises the Portuguese economy; that this model hinges on low wages; and that it has inexorably played itself out. The reason why this concept has been so generally accepted would seem to be the reasoning that a model based on high wages was the only logical outcome of the end of a model based on low wages.

The low-wage model and its end is, however, one of those common-sense notions for which there can be found no grounds in economic analysis. It seems in fact to be above all an echo of philosophical concepts derived from Hegel's dialectic: that deep inside any new social model there are the contradictions that will inevitably lead to its downfall.

Economic models are abstract constructs. They are very useful in providing a simplified way of helping us understand the fundamental mechanisms underlying the behaviour of economic agents. In this sense, an economic model is not "real" in the way that, for example, a pair of shoes is based on a real model. It is very debatable whether you can classify an economic model on the basis of such a confusing concept as "a low wage model playing itself out."

When the idea of low wages is expressed, the issue is obviously: low in relation to what? For a labour economist, the notion of a low (or high) wage is very specific. In microeconomic terms, wages are low if they are set below the value of marginal productivity and high if they are above. The value of marginal

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** Economic Research Department.

productivity represents the gain for the firm resulting from recruiting (or dismissing) another worker. It marks out a clear dividing line in the wage bargaining process. This function therefore defines firm labour demand. In the aggregate, if the wages paid by firms are too low, labour will become scarce, a phenomenon known in Portugal since at least 1410.[1]

Setting wages is clearly more complex than what stems purely and simply from a balance between labour force supply and demand. The dynamics of such supply and demand do, however, have a decisive effect on the way wages move. If wage bargaining involves, at least at a first stage, a confrontation between employers and trade union associations, then it is better described as playing out a non-cooperative game, in a bilateral monopoly situation, leading to agreement on wages, employment levels and possibly redundancy payouts. It is this approach, and not a normative appreciation of what wages should be, that will provide a guideline for the empirical investigation of what determines wages in Portugal, presented in the following sections.

2. THE ARCHITECTURE OF THE WAGE BARGAINING SYSTEM IN THE PORTUGUESE LABOUR MARKET

Private sector workers' pay in Portugal is conditioned by the definition of two thresholds. The first is the national minimum wage, specifying a floor for the majority of the labour force.[2] The second is defined by the wage bargaining between employers' and trades union associations, leading to a "salary table" with the minimum wage for each professional group.

Determining these salary tables is the central, but not the only, element in the bargaining process. It may result from agreements at sectoral level (majority), or from company or multi-company agreements. In legal terms, the agreement is only binding on the parties in the negotiations – the workers who are unionised and the companies within the employer associations – but the Ministry of Labour and Social Security systematically uses government decrees (*portarias*) to extend the collective agreement to all companies and workers in the sector.

It is often in the interest of companies to pay their workers above the going rate set out in the table. The main reason why companies guarantee higher wages than the norm is to prevent a drain of workers who have been selected and trained and have shown aptitude for their particular jobs. The handling of this cushion (the difference between the contractual rate and the actual rate) provides the company with a human resource management tool and some leeway to soften any negative shocks in demand for their product. In the Portuguese labour market, companies do in fact pay their workers significantly more than the contractual wage negotiated in the collective contract.[3]

3. THE MINIMUM WAGE AND WAGE DISTRIBUTION IN PORTUGAL

Minimum wage legislation was introduced in 1974, when certain exceptions were allowed. These were gradually brought into the process.[4] In October 2004, 7.8 per cent of full-time employed workers in the private sector were on the minimum wage. This was around 49.3 per cent of average base pay and 41.5 per cent of total pay. The minimum wage is clearly a decisive factor on the left tail of wage distribu-

(1) In the Lisbon parliament of August 1410, " [the participants] … complained that there were guards of the castle, because pay was so low, leading to the cities and towns of the realm being poorly guarded" quoted in Itinerários de el-rei D. João I, by Humberto Baquero Moreno, 1988.

(2) This excludes the handicapped and apprentices.

(3) Cardoso and Portugal (2005) put this wage cushion at 30-40% of contractual rate.

(4) For example, small companies, the young and farmers were not included.

Chart 1

WAGE DISTRIBUTION (2004)

Source: *Quadros de Pessoal*.

tion. It does not allow wage dispersion at the cost of an heavy left tail of the wage distribution (Chart 1). The influence of the minimum wage on wage distribution in the labour market means that high wage dispersion is essentially generated by the right tail of the distribution (Machado and Mata, 2005).

The effect of the minimum wage on employment has been the subject of heated discussion among economists. Theoretically, if there is competition in the factors market, the imposition of a minimum wage above the competitive equilibrium wage will inevitably lead to job losses, above all in the sector covered by the minimum wage. However, in a monopsony, where the employer has some capacity to set wage levels, it is well-known that setting a minimum wage can increase employment.[5]

Empirical research on this topic has accumulated a vast repository of contradictory results. Some indicate that jobs are lost, others point to nil effects on employment or even a slight gain. In Portugal, the minimum wage was extended to the under-20s in 1987 and allows us to study the impact of the minimum wage in almost ideal conditions. The measure involved a big rise in the wage (between 33 and 50 per cent) for a specific group. Two opposite effects are clear from a detailed study of the influence of this measure on the gross flow of workers, using the "*Quadros de Pessoal*" (*QP*), a longitudinal data set matching firms and workers in the Portuguese economy. On the one hand we have severance, on the other accessions; the employment generated by new companies and the employment lost through company closures (see Table 1) (Portugal and Cardoso 2006). The proportion of young people recruited fell, both in new companies and in those already in operation. At the same time, there was an

(5) In a more general sense, we can add to the power of monopsony the hurdles placed on worker mobility (for example, the cost of finding another job). In other words, any mechanism that makes it more difficult for workers to opt for a move increases the negotiating power of the company.

Table 1

EFFECT OF THE CHANGE IN MINIMUM WAGE ON WORKER FLOWS

	Fraction of teenagers in worker flows			
	Accessions	Separations	New firms	Closures
1988	-0.037	-0.15	-0.042	0.05
	(0.01)	(0.01)	(0.018)	(0.023)
1989	-0.043	-0.14	-0.041	0.025
	(0.01)	(0.01)	(0.018)	(0.023)
Reference: 1986				
Number of firms	99 608	125 397	38 138	19 203

Note: Poisson regression with random effects. Each regression includes company site, a measurement of industrial concentration, 7 sectoral variables and a variable for foreign companies. Standard errors in brackets.

increase in the proportion of young people in companies which closed. However, the proportion of young job losers in existing companies fell significantly and more than offset the negative effect on employment in other flows. This led to a positive net effect. To put it bluntly, the 1987 extension of the minimum wage led to a significant net employment gain for young people.

4. CONTRACTUAL WAGES, ACTUAL WAGES AND THE WAGE CUSHION

The wage bargaining process between trades unions and employers' associations is built on conventions and gives the unions a crucial role in that they are able to push for an egalitarian wage distribution structure. From this angle, the thrust of the unions will be towards more wage compression and away from pay as a function of productivity among workers and companies.

If we admit that contractual wages, i.e. wages negotiated through collective agreements, reflect above all the preferences of unions and that the wage cushion (defined as the difference between the contractual wage and the actual wage) illustrates above all the pay policies defined by companies themselves, then we are in a position to analyse two distinct preferences relating to the pattern of wage distribution.

The study of the factors determining contractual wages and the wage cushion, based on regression analysis, shows that worker attributes have a muted influence on the behaviour of agreed wages (Cardoso and Portugal, 2005). The wage cushion, however, significantly amplifies the effect of these variables, mitigating to some extent the wage compression favoured by the unions (Table 2).

The distribution of contractual wages shows clearly the preference of workers' representatives for an egalitarian distribution (reducing the range of wages) but this is offset by the wage cushion, which accentuates the dispersion, above all on the right tail of the distribution.

Table 2

WAGE DETERMINANTS - MARGINAL EFFECTS

Regressors	Dependent variable		
	Contractual wage	Wage cushion	Actual wage
	(A)	(B)	(A+B)
Nominal productivity (log)	0.026	0.021	0.057
Schooling	0.016	0.019	0.047
Age	0.02	0.011	0.034
Age squared	-0.0002	-0.001	-0.0003
Seniority	0.004	0.001	0.006
Seniority <1 year	-0.019	-0.024	-0.051
Gender (female = 1)	-0.109	-0.128	-0.204
Size of the firm (log)	0.028	0.008	0.036
Age of firm	-0.0003	-0.0001	-0.0005
Turnover rate	0.001	0.007	0.014
Number of observations	1 134 427	1 134 427	1 134 427
R^2	0.54	0.3	0.59

Note: Estimation by maximum likelihood of the Tobit regression model. Each regression includes 5 measures of union power, 3 variables indicating extension of the collective agreement, 3 regional variables and 17 sectoral variables. Source: Quadros de Pessoal, 1999.

5. RENT SHARING AND THE ROLE OF INSIDERS AND OUTSIDERS IN WAGE SETTING

A considerable branch of the literature focuses on the internal factors of the company in setting wages. Again we must consider the monopolistic situation which allows for the generation of rents that will be shared between owners and workers, modified by the negotiating power of the two sides. In this theoretical framework, it makes sense to tie wages to company performance indicators (profits, productivity, cash flow, etc).

Once the distinction between insider and outsider factors in a company is established, there is scope for an interesting analysis of the distinction between insider and outsider workers. The idea is that wages are fundamentally set by incumbent workers (insiders) while those not on contract (outsiders) have a relatively minor role to play. There are costs associated with selection, recruitment and training of insiders, making it economically unviable to replace them with jobless at lower wages. The rent associated with replacement costs guarantees insider bargaining power in wage negotiations.

The insider-outsider theory of wage setting allows us to put forward an explanation for setting wages above the market equilibrium level. Wage insensitivity to labour market conditions, and above all unemployment, can entail hysteresis caused by the power of insiders. In this case, contemporary unemployment depends on past unemployment, leading to a negative relation between contemporary wage levels and past employment levels.

An approach to an insider-outsider model to set wages (Table 3) was undertaken on the basis of a panel of companies with at least 100 workers, provided by the Ministry of Labour and Social Solidarity (Carneiro and Portugal, 2006). Results from this approach show that nominal productivity has a significant impact on wage setting with an 18% weight for internal factors. This is fairly high by international standards.[6] Market share also affects wages, suggesting that power in the product market creates

(6) The long-term figure for internal weight is calculated by dividing the coefficient of nominal productivity by one less the coefficient of the lagged wage.

Table 3

WAGE SETTING - INSIDER OUTSIDER MODEL

	Dependent variable: log wages	
Regressors	**Regression coefficient**	***t* statistic**
Wages lagged	0.227	7.4
Nominal productivity	0.143	6.1
Growth in permanent employment	-0.096	-5.8
Market share	0.018	4.3
Temporary employment	-0.019	-0.6
Rate of labour use	0.318	2.5
Layoff rate	-0.022	-5.3
Unemployment rate	-0.123	-5.9
Number of companies	4330	

Note: GMM estimation. Each regression includes 4 categories of schooling, 5 of professional qualification and 5 temporal dummies.

rents that are also picked up by workers in the form of bigger wages. The negative relation between wage variation and the unemployment rate suggests that outsider power has an important part to play in wage setting because it affects the alternative options of others in the bargaining process. There are no signs of hysteresis when the importance of insiders is measured through the variation in employment of workers on secure contracts. As a last point, the positive effect on wages from the rate of labour use and the negative effect from the rate of layoffs seem to bolster the idea that the threat of dismissal weakens worker bargaining power and brings wages down.

6. DISPLACEMENT RISK AND WAGE DETERMINATION

In a labour market with Portugal's level of sclerosis, where the likelihood of finding a suitable place of work is very low and unemployment duration therefore very high, being dismissed is an extremely dramatic event (Blanchard and Portugal, 2001). In this context it is possible to envisage a bargaining scenario involving workers' and employers' representatives where a compromise is reached with company survival in mind. Here, wage levels are balanced against the likelihood of a job being lost with closure. Wages in this way have a bearing on the occurrence of the discrete terminal event that reduces employment to zero. This brings us to a point where company survival hangs in the balance. At the same time, the likelihood of closure affects the setting of wages throughout the bargaining process and if there is a negative shock on demand for the product, wage concessions will be on the table. So, if wages are completely determined by the minimum wage, the wage-concession process will collapse.

The study of Carneiro and Portugal (again using the QP individual records), reached the conclusion that the quasi-elasticity of labour demand through company job losses due to closure was in the order of 0.15. This means that an exogenous variation on wages of 10% will increase the likelihood of closure by 1.5 per cent. In turn, the worker faced with the average likelihood of closure (6.3 per cent) will receive during the year before closure a wage 6 per cent lower than that received in a company with no closure in sight. As a final point, companies with a large proportion of minimum wage earners face a

larger risk of closure, since there is no scope for wage concessions. An increase of 10% of workers receiving the minimum wage corresponds to a 0.6 per cent rise in the likelihood of company closure.

Faced with a negative shock which changes firm's survival frontier, workers can, in certain circumstances, make concessions to cut down the risk of displacement. In many cases, however, closure cannot be avoided and the workers are faced with significant wage losses afterwards Job losses mean that the investment in human capital specific to the company has gone, i.e. the investment that made the worker more productive in the company but cannot be transferred to other companies. Workers also lose the investment in the search for a job suited to their productive capacities (job matching). There are also strategies frequently used to put off the payment of a higher salary to the period nearing the end of a career, basing this on the length of service of a worker. This is a way of disincentivating lower performance and also leads to wage losses whenever workers change jobs. As a last point, prolonged unemployment tends to lead to a human capital depreciation and stigmatisation among employers.

Carneiro and Portugal (2006b) carried out a study comparing the evolution of wages among workers dismissed as a result of company closure with wages for workers in companies that did not close and could therefore serve as a control group. The QP micro data on staff was also used. The conclusion was that three years after closure, the wage differential between the two groups was 10 p.p. for women and 12 p.p. for men. If there is a period of unemployment, the differential rises by 3 p.p. for women and 6 p.p. for men. The major part of wage losses (40 to 46 per cent) lies in fact that human capital specific to the company disappears. Change in the sector of activity weighs significantly on the wages of workers who find new jobs (14 to 24 per cent), and there is also a distinct behavioural difference between those who find a new job straight away and those who go through a period without a job. Being unemployed contributes 33 to 44 per cent of total wage loss. A selection issue is raised however. It is possible to argue that the heaviest consequences of company closure are hidden in the near fifty per cent of those dismissed who did not find a new job, and, thus, are not on the *QP* staffing list three years later.

7. THE CYCLICAL BEHAVIOUR OF REAL WAGES

There is a vast literature on this subject. How do real wages react to changes in economic activity? Adjustments to employment across the aggregate labour market demand curve cause a counter-cyclical reaction in real wages. Alternatively, the intertemporal substitution of labour by leisure across the dynamic labour supply curve will generate a pro-cyclical sensitivity of real wages to business cycle.

Economists seem on the whole to agree that using aggregate data in research on the cyclical pattern of wages does very little to clarify things. In fact, the use of aggregate wage data leads to a number of variables intermingling to the point where they cannot be separated: the effects of the changes on wage dispersion, on the distribution of hours worked and on the composition of the labour force. An additional implication from using aggregate data is that it assumes implicitly that the relation between real wages and the business cycle is the same for all workers or groups of workers. Leaving aside the heterogeneity in the wage cycle sensitivity may lead to serious problems when undertaking this analysis.

The empirical evidence based on microeconomic longitudinal data allows us to overcome the problems of aggregate figures. From this came the generally accepted agreement that real wages behave in a moderately pro-cyclical way, more accentuated among workers who move between jobs (movers) and much less among those who do not move (stayers).

A study of the labour market in Portugal, carried out by Carneiro and Portugal (2004), based on the QP individual staffing records of 1986-1988, shows indeed a moderate cyclical sensitivity in real wages

Table 4

DEPENDENT VARIABLE: LOGARITHM OF REAL HOURLY WAGE

	SAMPLE:		
Cyclical variable	**Stayers**	**Accessions**	**Separations**
Unemployment rate	-1.16	-2.08	-0.6
	(-9.7)	(-16.1)	(-2.8)
Number of observations	170 414	115 009	88 894
R^2	0.5	0.42	0.44

Note: This regression is estimated for OLS. Each regression includes linear and quadratic trends, worker age and age squared, schooling and seven binary variables that identify levels of qualification. 't' statistics are in brackets.

among workers who stayed in the same company for two consecutive years. There is, however, a significantly large pro-cyclical reaction in real wages among just hired workers. On the contrary, cyclical sensibility is weak among workers who have left their companies (Table 4).

8. WAGE SETTING IN A LOW INFLATION (AND LOW PRODUCTIVITY) REGIME

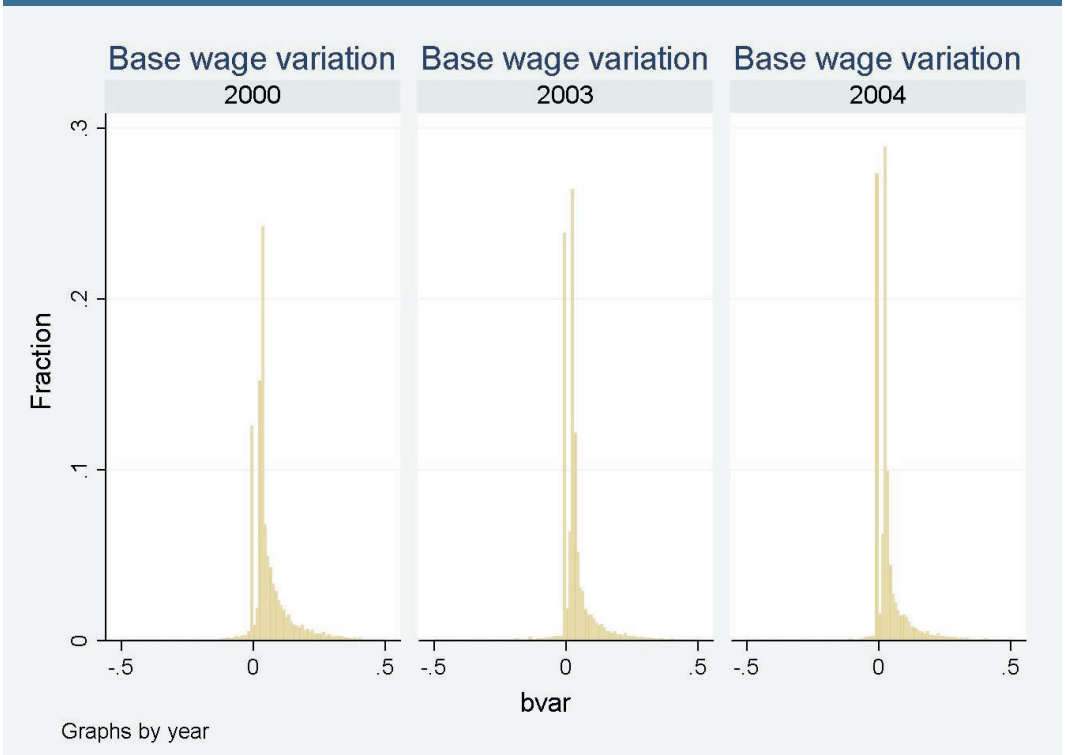
The notion of nominal rigidity of wages is associated with barriers to a nominal fall in wages (legal, contractual and others). Since the 1950s, nominal wage cuts are forbidden in Portugal. This restriction, however, does not create unsurmountable restrictions for companies seeking real wage concessions below the inflation rate. In such a case it will be enough to ensure that a nominal wage up-date is below inflation. The higher the inflation rate, the more leeway on wages is available for companies. In a low-inflation regime, however, nominal wage rigidity may stop companies from adjusting to negative product demand shocks through wage accommodations. The smaller the wage cushion (the difference between the wage actually paid and the wage agreed in collective pay bargaining) the more difficult this manipulation will become. A third area where there is leeway for adjustment could be in the structure of total pay, which is made up of base pay, regular and occasional payments and overtime.

An empirical study of the wage variation distribution, in the absence of large measurement errors, gives a convincing picture of the presence of nominal rigidity. Resistance to nominal negative variations in wages will mean sparse negative variations but if this cannot happen, there will be a rise in nil variations.

In terms of recent developments in the empirical distribution of wage variations (from an analysis of the 1999-2004 QP staffing figures) there are hardly any nominal negative variations (measured from base pay) and a large mass point at wage variations equal to zero (Chart 2). The move towards more null variations (from 13 per cent in 1999-2000 to 28 per cent in 2003-2004) is particularly revealing. This is probably associated with low inflation and weak productivity growth. There is also a salient move towards zero in the distribution of wage variations, corresponding approximately to the expected inflation rate accentuating even more the compression of the distribution. As a last point, it is clear that in 2004 the variation in total pay was less than in base pay. This shows that companies are having recourse to an unusual way of adjusting wages negatively (Charts 3 and 4).

Chart 2

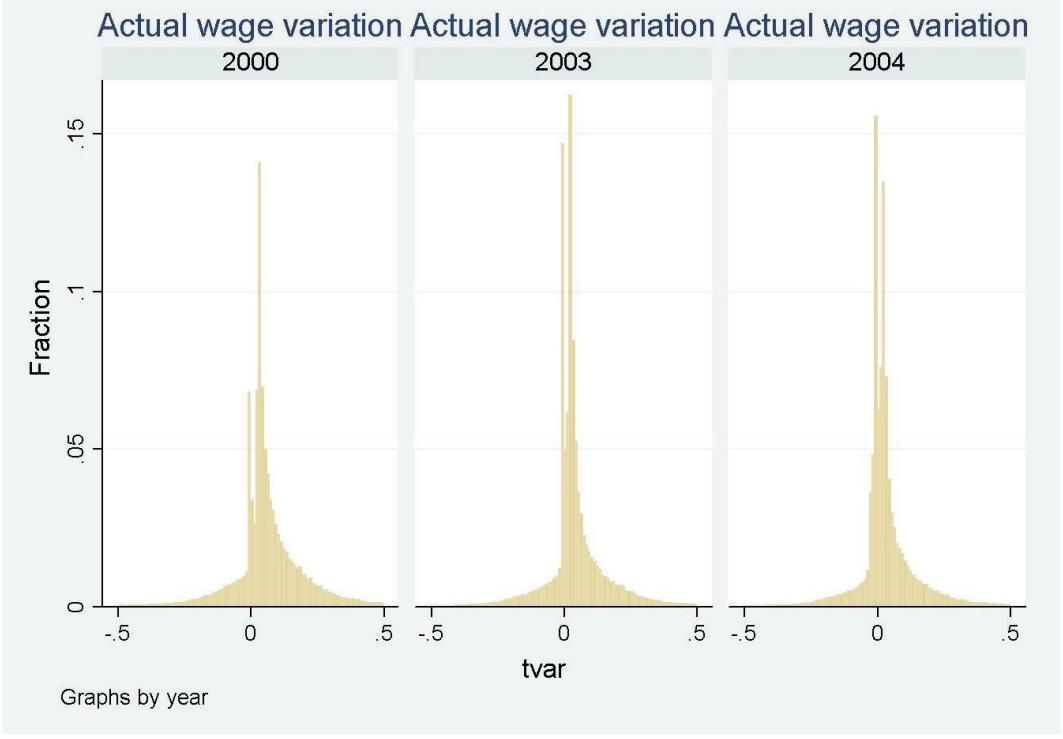
DISTRIBUTION OF WAGE VARIATION (BASIC PAY)



Source: *Quadros de Pessoal*.

Chart 3

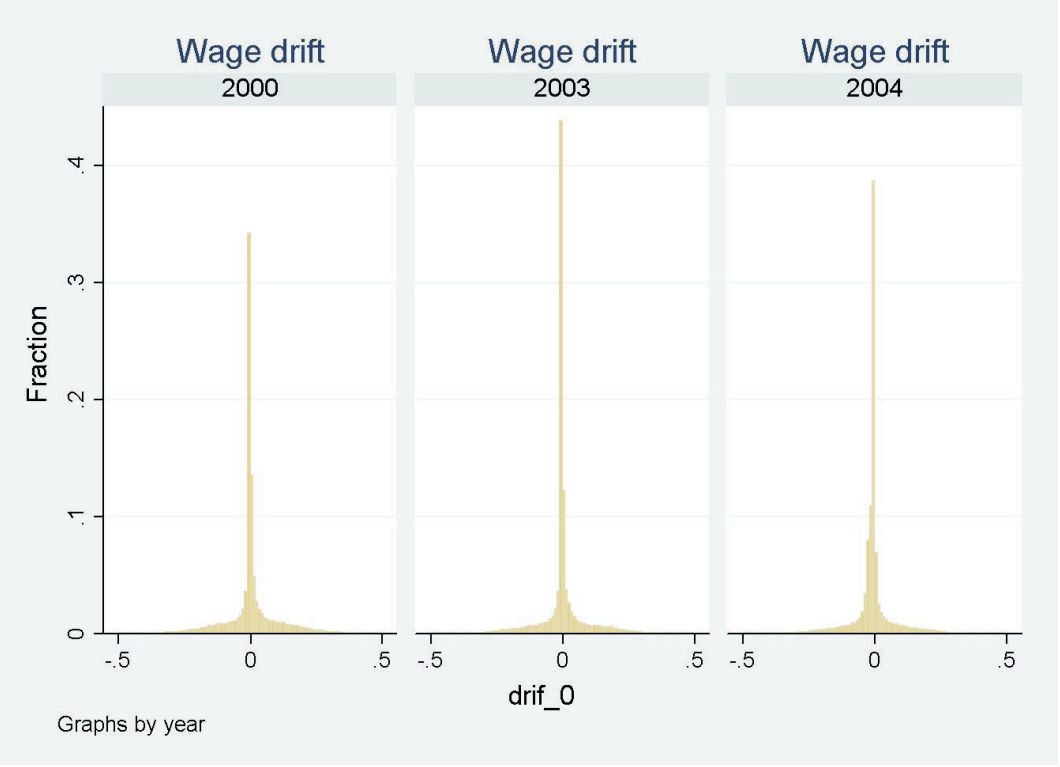
DISTRIBUTION OF WAGE VARIATION (TOTAL PAY)



Source: *Quadros de Pessoal*.

Chart 4

DISTRIBUTION OF WAGE DRIFT



Source: *Quadros de Pessoal*.

9. CONCLUSIONS

The importance of minimum wage setting has been established in this analysis in the pattern of wage distribution. The argument was that a change to the minimum wage had mixed effects on employment. A breakdown of its effects in terms of gross worker flows is especially enlightening as a way of understanding better the range of reactions to minimum wage setting.

Portuguese firms often pay their workers above the contractual wage, ensuring a wage cushion which can serve as an important mechanism for wage flexibility. The cushion can also serve as a buffer against the egalitarian thrust on wage distribution by workers' representatives.

Both internal and external factors have a bearing on wage setting. In the Portuguese case, rent sharing between employers and workers gives a relatively high importance to internal factors. In a labour market where the loss of a job can be a serious problem because of the low arrival rate of job offers, wages are conditioned by fears of dismissal, among these the possibility of firm closure.

Among the external factors conditioning wage movements, the economic cycle plays a decisive role. Leaving aside compositional effects, real wages for Portuguese workers are pro-cyclical, especially for starting wages.

The picture is of a country with extreme nominal wage rigidity. This nominal rigidity resides in the fact that nominal wages cannot fall, a situation set down in labour legislation. Resistance to a cut in nominal

wages is clearly visible in the empirical distribution of wage variations, where recent developments show a rising difficulty for companies to use wages as a response to negative product demand shocks.

Throughout this brief digression on the behaviour of wages in the Portuguese labour market there has never been any suggestion that wages might have been set below their equilibrium value. Indeed, if any evidence exists, it points in the opposite direction. In the public administration sector, the decision on wages is defined in political terms, far from the confrontation between supply and demand. Here there is strong evidence when comparing like for like that the wages of civil servants are set at a figure far above the private sector (Portugal and Centeno, 2001). Excessive wage growth may also reside at the root of the macroeconomic imbalances in the Portuguese economy (Blanchard, 2006).

In a discussion of what determines wages, it should always be borne in mind that labour contracts are freely negotiated between employers and employees. The leeway for negotiations will be determined by the conditions underlying company survival and by the workers' reservation wage. Bargaining power depends on a variety of factors, among them risk aversion (for example income fluctuations), the capacity to inflict costs (for example through strike action) or asymmetric information (for example on the company's economic performance). And it is the bargaining power of the parties that will determine the final outcome. In this context, fancying to replace the "low wage model" for another economic model is as frivolous as wishing to change a shoe design. The economic debate would in all likelihood be more fruitful if it focused on the most suitable format for labour market institutions rather than on a sterile contemplation of "an economic development model based on low wages playing itself out".

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