FIXED-TERM EMPLOYMENT CONTRACTS AND SEGMENTATION IN THE SPANISH (YOUTH) LABOUR MARKET

(preliminary version, please do not quote)

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1. Introduction

The focus of this piece of work is the study of wage differentials between two broad types of employment contracts. We intend to find out whether wage differentials between these two groups are related to the distribution of employment contracts between different kinds of jobs or they register different returns for the same features. Temporary workers are supposed to be equally paid for the same tasks as their permanent counterparts, and labour laws defend them against discrimination. But there is a wide empirical evidence on permanent workers earning more than temporary ones (Jimeno and Toharia, (1993, 1996), de la Rica and Felgueroso (1999), Pérez and Hidalgo (1999)).

For classical economists wage differentials have an important compensating component, so employers should pay more to temporary workers in order to compensate them for their higher instability and reduce their rotation costs. The neo-classical labour market theory takes earnings differences as the result of the differences in productive effort, ability or education. If the different types of contracts were related to different levels of effort, ability or education wage differentials would also appear. Here we use a complementary approach that takes institutional structures as determinants of employment and earnings structures. Our theory background will be the dual labour market theory.

The data bases to explore wage differentials will be the European Community Household Panel (hereafter ECHP), and the Wage Structure Survey (*Encuesta de Estructura Salarial*, EES). The former has a small sample size but provides us with information on family, job and personal features that allows us to design a switching model and controlling for the usual selection bias in this kind of studies. The latter was launched on a much larger sample but lacks some information items. They are not strictly comparable then, but complementary. Wage differentials will be decomposed using Oaxaca-Blinder method.

In this work the sample will be split in two groups: on the one hand, young workers (under 30 years of age) since they are a group that has suffered most the effects of the temporary employment recent boost. Temporary employment is, for most of them, the only available way of entering the labour market. On the other hand, adult workers (30 to 64 year olds) for whom temporary employment may represent a different status than for their young counterparts.

Our first intuition is that temporary and permanent contracts are used to cover different jobs, and this will be the main argument that will explain wage differentials between these groups. Besides, since temporality does not affect workers homogeneously during all their working lives (being a common feature during the first years of labour experience), different patterns of wage differentials per age should also be found.

Therefore, our aim is to study whether temporary status implies lower wages regardless personal and job-related characteristics or whether temporality is used in Spain to fill a particular field of the labour demand and that causes wage differentials. We then will compare these differences and their causes with the ones among adult workers. This

exercise will enable us to compare the use of temporary employment among young and adult workers and the differences between temporary and permanent statuses for both age groups.

The empirical findings are that permanent workers are better paid than permanent ones regardless the age group, being the composition of employment and the distribution of job and personal characteristics the main reasons for this. Besides, and reinforcing the former assessment, the fact of being a temporary worker (the selection bias due to holding a temporary contract) pushes wages down and the opposite holds true for permanent workers.

The paper goes as follows: After this introductory paragraphs Section 2 briefly explains the theoretical background used here. Section 3 gathers some empirical pieces of work we have reached for Spain on this topic. Next, Section 4 describes the institutional set-up and the evolution of temporary employment in Spain. Section 5 presents the data sets and Section 6 describes the employment distribution and main wage differentials from both samples. As for the main estimations, the econometric model is displayed in Section 7 and the main results are displayed in Section 8. Section 9 compares the results from both data sets and concludes.

2. Theoretical background.

The reference framework used here has been the institutional "dual labour markets" theory, developed by Michael Piore (1978). This theory applies particularly well here due to the relevance it confers to the institutions on the labour market behaviour**,** as well as the relevance it also attributes to direct observation as an analytical tool.

Piore maintains that the existence of duality in the labour market is the result of the change and uncertainty inherent to every economic activity. His view is that technology turns out to be the detonator-origin of the division (dualism) of the labour market. Toharia (1983), points out that Piore refers in his theory to very specific social and production relations: there is a group of persons (employers or engineers) entitled to hire and to dismiss to other groups of persons (employees) who are in charge of the productive system and, therefore, the technological change process.

Dual labour markets arise when, due to uncertainty and changes in the productive activity, part of the labour force begin to be insulated from uncertainty and variability in demand and their requirements anticipated in the process of planning and decision-making. At the same time, the other part[2] is called into being to absorb the insecure portion of the product demand. Once this distinction is made, it may be also called upon to handle other social functions, and since both sectors are distinguished by their behaviour patterns, jobs may fall into one or another sector not because the jobs are more or less secure, but because the behavioural patterns differ. Therefore, taking the groups of this study as an example, there are many temporary jobs in sectors such as

[2] In the case we study here we could find a parallel division between stable (permanent) and unstable (temporary) employment which, in our view, meets Piore's definition of duality.

health or education that do not register strong economic uncertainty while there are permanent jobs in activities that are affected by a high uncertainty.

In addition, this theory refers to the fact that these more insecure jobs that belong to the secondary market are not randomly distributed but tend to concentrate on certain groups of workers with a lower skill level or with a weaker link to the labour market (young workers could fit in this category). Thus, following Toharia (1983) when resuming Bergers' (1980) viewpoint secondary workers features are accidents used, but not created, by the economic system. In the case of the Spanish labour market, the dual labour market theory is specially useful for explaining the changes in the use of temporary employment in the last years since the middle eighties. The use of these more flexible types of employment have been used by the employers to adjust the labour force to economic cycle variations.

Finally, another aspect that enables us to use this theoretical framework is the relevance this model confers to the effect of the institutions on the labour market behaviour. In the case of Spain, there has been a deep change in the Labour Law that has strongly influenced employment structure, and this structure is, according to our hypothesis here, a very important cause of wage differentials. This process will receive further attention in Section 4.

How economic uncertainty is shared: explanations for wage differentials under the dual labour market assumption.

The dual labour market theory describes secondary segment workers as those who enjoy lower wages and register high employment insecurity, as already seen in the prior section. Some of the explanations to this lower level of wages are the following ones:

Shapiro and Stiglitz [3](1984) model, "those workers with higher turnover are more costly to employ. This is because they lose less from being fired, since they expected to leave anyway. Hence they must be pay more for prevented from shirking. There it is more likely that these workers will end up in sector with low monitoring cost, which means low-paying" . This theory holds the assumption that turnover responds to decisions from the supply side, and not to the needs of the demand side of the labour market.

Bulow and Summers (1986) extend the Shapiro- Stiglitz model to show how it can explain dualism: Suppose that there are two sectors in the economy, one with monitoring cost and other without them. Then the sector without monitoring cost will pay competitive wages. Equilibrium exists where sector 1 pays more than sector 2 for workers with identical productivity. Furthermore, wages are correlated with some observable characteristics of the worker that may have nothing to do with productivity. This theory considers that individuals that are supposed to be equally productive are equally paid. Besides, the wage differential seems correlated to a feature such as experience in the labour market for each productivity level. The difficult point of this

[3] In Saint Paul (1996)

theory is the need to identity in the real labour markets the firms and activities that belong to each sector.

Saint-Paul (1996) puts forward a key idea: the primary labour force implies adjustment costs, though not the secondary one. Firms will therefore prefer to hire primary workers (and paying efficiency wages) provided these firms do not expect to change employment too often. When they expect wider demand fluctuation they are more likely to use secondary workers. By using secondary workers on the margin adjustment, they can insulate primary workers from these fluctuations. So, Bentolila and Dolado (1992) have studied the impact on wages of the introduction of temporary contracts in Spain. They do not study directly the distance between temporary and permanent wages, but the evolution of the wage drift when new workers (who are more prone to be hired under temporary basis and therefore do not have any right to receive any extra-payment) are hired. Jimeno and Toharia (1993) analyse the effects of fixed-term employment and they obtain that the sectors with a higher use of temporary employment wages of temporary workers are between 9-11% lower than the ones for permanent ones after controlling for personal and job characteristics. Both pieces of work consider that temporary workers have contributed to the growth of wage claims among permanent workers. In other words, the higher use of temporary employment has caused a reaction among primary sector workers, who are more represented through the unions.

The exercise here is an empirical test aimed at studying the existence of dual labour markets as a source of wage discrimination. This assumption does not agree with the Spanish Labour Law that forbids the existence of different wages for the same type of job. Since we are provided with base wages (net of all personal and job complements due to seniority and other features) in one of our data-sets we can observe the existence of this discrimination.

3. Former empirical work on wage differentials

This empirical piece of work intends to supply further evidence on the already widely studied field of wage differentials. The initial empirical research on this topic focused on wage differences between male and female workers (Oaxaca, 1973) and the same methodology has been afterwards applied to public and private sectors (in Spain, Ugidos (1997) and Albert and Moreno, (1998)) and, of course, to fixed-term and permanent workers (Jimeno and Toharia (1993, 1996), Bentolila and Dolado (1994), De la Rica and Felgueroso (1999)). Here we apply a switching regression model parallel to the one in Albert and Moreno (1998), but on temporary and permanent workers, and with different data sets (the ECHP and the EES). As an additional novelty, this analysis considers separately young and adult employees, which are affected by fixed-term employment in very different ways (see Section 6).

Former empirical research on wage differences between fixed-term and permanent workers coincide in finding higher earnings among permanent workers than

among temporary ones. Thus, Jimeno and Toharia (1993) find a 10.8% wage gap in 1991 and 8,5% for 1993 using different samples provided by INE (*Instituto Nacional de Estadística*, Spanish Statistics Office). As for Bentolila and Dolado (1994), they estimate average wages in manufacturing private firms[4] for 1985-1988 and they obtain that a one percent increase in the proportion of temporary workers among the whole payroll decreases by 0,64% the average wage costs. In a more recent piece of work de la Rica and Felgueroso (1999) find a 15% wage gap for manufacturing and services[5] male permanent workers and 7% for female ones, although these differences are higher the higher the level of education attainment of the employee.

As regards the switching regression model we use in this work, we control for the selection bias of both being employee and fixed-term of temporary worker. We follow the examples of Ugidos (1997) and Albert and Moreno (1998), who each estimate models on wage differentials between private and public sector employees. For a brief description of the econometric model, see Section 7.

4. Institutional set-up: temporary employment in the Spanish Labour Market.

The institutional aspects of the Spanish labour market have clearly been targeted towards a marked *flexibility at the margin*. When the Spanish fundamental labour law, the Workers' Statute (*Ley del Estatuto de los Trabajadores*) was approved in 1980 the recent social pact necessary to reach successfully our country's transition to democracy led to a very rigid labour market: all the employment contracts, unless otherwise justified, were permanent. In a context of strong economic crisis and employment loss, employers claimed for a reform that arrived in 1984, when the government introduced temporary employment contracts in the Labour legislation. These implied less costly and more flexible entries in the labour market, while the conditions of the already employed were not altered. Several kinds of temporary employment were approved, some of them already existed (such as the apprentice contract for young workers) and some of them were completely new in our labour market.

These new employment contract were massively used by the employers in order to cover both temporary and permanent tasks (the main temporary employment contract in the 1984 reform, the employment promotion contract, broke the causality principle[6]). Besides, these contracts entitled their holders to three months of unemployment benefit for each six months of contract. All these circumstances enhanced the use of these contracts during the upward trend of the economic cycle in the late eighties (see Figures 1 and 2). The use of temporary contracts was important to explain both the increase in employment creation -GDP elasticity (Figure 2).

The proportion of temporary workers among all the employees has been more or less constant since 1992, at a 30% rate (Figure 1), the highest temporality rate in the

[4] They use the data from the Spanish Central Bank register (*Central de Balances del Banco de España*)

[5] They use the EES as we do in this piece of work, but they restrict their sample to permanent workers with a tenure up to 3 years so that they are essentially comparable to temporary ones. That is probably why in our work we find a wider wage gap then they do.

[6] This principle meant that temporary contracts could only be used for temporary activities.

EU[7]. The relevance of temporary employment has not decreased with the subsequent labour market reforms that aimed the reduction of the use of temporality in 1992, when the government approved some changes in the unemployment system and the tax exemptions on contracts for the young. These changes were not effective enough and in 1994 the government drastically restricted the use of temporary contracts and the employment promotion fixed-term contracts were re-targeted towards some groups of hard-to-place workers.

In 1997, during the last Labour Reform, employment promotion fixed-term contracts were abolished, and a new permanent employment contract has been created[8]. Why have then temporary contracts kept their relevance in the Spanish labour market? There is a level of temporality (around 30%, figure 2) that seems to be the minimum our economy needs to cope with the economic uncertainty since this indicator does not decrease regardless the subsequent labour reforms. As mentioned above, the 1984 reform enabled several ways of temporary hiring, and when the employment promotion fixed-term contracts were constrained in 1992 and 1994 they were substituted with other types of temporary contracts that are not used for the exact aims they were initially programmed. That is the case of the contract "per task or service" and the contract for launching new activities.

The use and abuse of temporary employment has strongly changed the structure of employment (Toharia and Malo, 1999). The recent expansion of temporary employment contracts in Spain has two main periods: between 1985 and 1992, and since 1992. In the first period, the proportion of temporary workers among all the employees increased sharply. In the second one, contractual stability has tended to remain relatively stable, even though during this period there has been a strong recession (1993 and 1994) and a mild (though stronger since 1998) recovery. During the whole period several changes on the regulation of these contracts have taken place. The 1984 reform was aimed at fostering temporary employment as a way of reducing unemployment, and this could be the beginning of a more unbalanced labour market, divided in two segments, one of them registering a high turnover. More empirical research and more longitudinal information are necessary to confirm this hypothesis, though. When the minimum duration of the employment promotion fixed-term contracts was enlarged as well as the minimum requirement to access the unemployment benefit system in 1992 the use of temporary contracts did not fall. And when the 1994 reform abolished the regulated fixed-term employment promotion contracts employers did keep using temporary ordinary temporary contracts (such as the per task or service contracts) to hire new workers. Our period of observation in this piece of work is 1995, a year

[7] Table A.1. in the annex shows the evolution of temporality rates in most EU members. It can be seen there that Spain registers the highest temporarily rate and the persistence of this level. Anyway, the figures in the table are not strictly comparable due to the differences in national labour laws and definitions of temporary contracts in the EU.

[8] This new type of contract entitles to a lower severance payment in case of unfair dismissal and is restricted to workers under 30 and over 45, long-term unemployed and disabled workers. It seems to have been successful since it came to force but assessments should be done with a longer time perspective. The use of temporary contracts has not significantly declined since the new permanent employment contract is in force.

after the second reform of temporary contracts, which was aimed at reducing turnover and achieved just the opposite.

Toharia and Malo (1999) describe with further detail this employment structure change. Since the composition of temporary employment, by level of skill (formal and on-the-job) and by kind of firm has not changed during the nineties, they conclude that the use of temporary contracts for certain jobs or tasks responds to specific product market conditions that require more flexible labour market conditions. The authors try to approach the profile of temporary workers, which seems to be somehow stable over time, implying that some temporary workers could end up finding stable employment (if not exiting the labour force). All these pieces of evidence lead them to conclude that the Spanish labour market is strongly characterised by a dual demand-based structure. Once this secondary segment was settled with the regulation and fostering of fixed-term employment, it grew up to a stable size that seems to be optimal or necessary for our labour market, since subsequent regulation changes have not achieved a reduction in the use of temporary employment.

Temporality and young workers

As mentioned in the introduction, here workers under 30 and over that age will be treated separately. The main reason for doing this is that temporality affects in a different way to young a adult workers: it is a very common way of entering the labour market, but in the case of adult workers it is a sort of *atypical work*. Adults temporality rate (15-20%) is high enough to refer to "exemptions" or "extreme cases", but the fact that former permanent workers have not been directly touched by the recent labour reforms could mean that these temporary workers are outside the normal system of permanent contracts for adults in Spain. This should be somehow reflected on wages and working conditions. Besides, the employment promotion measures for youth are essentially temporary contracts aimed at fostering in-the-job training and a subsequent stable insertion in the labour market. These contracts were the apprentice or training[9] contract and the practice contract.

Apprenticeship contract existed before the Workers' Statute (1980) was approved. It was a seldom used paternalist contract for youngsters who learnt a trade. Since 1981, it is a contract for low qualified young workers (under 18 until 1994, under 21 since then) who do not have secondary education attainment. The working day is shorter than the average and completed through training and the wage could be, until the reform of 1997, under the minimum statutory wage. Apprentices have a decreasing relevance in youth hiring, especially since 1992, when tax exemptions for this kind of contracts were eliminated. As for practice contracts, they are aimed at young people (under 28) who have recently (nowadays, up to 4 years before the contract is signed) finished their studies (either secondary -both general and vocational- or university). This contract also entitled the employer to tax exemptions until 1992, and it has also

[9] The name has changed along with the changes in the law and successive definitions of the contract

lost weight since then. Nowadays it is used essentially for university graduates, but (see graph 3) it is not very relevant as regards the whole youth employment.

The fixed-term employment promotion contract was much more used for hiring young workers until it was restricted in 1994 and afterwards abolished in 1997. It was very cheap and it did not imply any training commitment for the employer. Since 1994 other temporary contracts, such as the "per task and service" contract have assumed its role. The labour reform of 1997, aimed at fostering stable employment has created an employment promotion permanent contract aimed, among other groups, at workers under 30 . The very high temporality rates among young are delaying many life-cycle decisions, such as household independence, marriage and motherhood (Garrido and Requena (1997)).

Figure 3 shows the evolution of permanent and fixed-term young employees, distinguishing between those who held a training contract of any type and those with another type of temporary contracts. The variables on the right axis refer to the temporality rate and the relevance training contracts had in all the temporary statuses. The boost of temporary employment for the young implied an extraordinary increase of temporality rates for this age group that has not declined until the recent economic recovery (1998-1999). Regarding the year of our analysis, 1995, it registered the highest temporality rate in the whole period in the Figure and it was the first year of employment recovery after the 1992-1994 crisis.

5. The data bases: The European Community Household Panel (ECHP) and the *Encuesta de Estructura Salarial* (EES).

The ECHP is an international panel survey that aims at supplying information on the economic and life conditions of the European population. Six waves have been already launched (1994 to 1999) in twelve European countries by EUROSTAT. In Spain there are only two waves available already, and we restrict our study to the second one because in the first one the information on the type of employment contract was not available. The survey is targeted at private households, and it collects information on residence conditions, household income and some other family issues, whereas personal interviews cover topics such as employment and non-employment conditions, wages, social welfare, health, satisfaction with several fields, job search, education and past labour market experience, among others.

The information we use here is two-folded. First, we use some family and personal information to predict the probability of being a wage earner, and secondly we use some further personal and job characteristics features for predicting the probability of holding a permanent contract and both probabilities are used in the OLS wage equations.

The total size of our sample is 12662 (17 to 64 years old) subjects, 4819 of which are employees, 1797 being temporary workers. Since we consider young (under thirty) and adult (from 30 up to 64 years old) workers separately, the final samples available for the wage equations used to estimate wage differentials are 1429 young and

3390 adult workers. Table 1 shows the composition of the sample and the distribution of the population by age groups between employees and other types of links to the labour market.

A very important shortage of this data set is that it does not supply information on gross income from the second wave onwards. This hinders the estimation of wage differentials[10], which depend on both wage level and the worker's family structure. In this paper we use a "proxy" gross wage variable that has been constructed[11] with the information from marital status and number of dependant children and the tax rate for each level of yearly wage according to the Spanish fiscal system.

As for the Wage Structure Survey (*Encuesta de Estructura Salarial*, ESS), it is a survey that all EU members carried out in 1995. This survey was launched at establishment level and its main objective is to obtain detailed information about wage levels and its components. The survey contains very detailed information about each worker's wages and also about personal and job characteristics of each worker. This last information item is not as wide as the one in the ECHP, though. A very important advantage of the EES is that the sample size is very large (around 160.000 individuals). Here the apprentices will be excluded from the analysis since their statutory wage is lower than the rest, but they hardy represent one percent of the sample.

Some important differences for us between the EES and the ECHP are the sample size and the fact that the ECHP allows us to control for two selectivity selection biases (being a wage earner and being a permanent/temporary worker) while the EES will only allow for the second control. Another interesting difference here is the fact that the EES allows to distinguish for more types of contract[12] and more education level categories than the ECHP. Besides, it was only launched at firm level, and this leaves out public administration, which is included in the ECHP and has a different wage structure and wage determination systems to firms (either public or private). Finally, the EES is able to distinguish between quite a lot of components of the monthly wage in October 1995 whereas the ECHP supplies very detailed information on the composition of labour market income for the whole year prior to the interview, being the information on current wage quite aggregated. In terms of our study, the base wage supplied by the EES has been used as dependent variable, so that the effect of bonuses for length of service and the like are excluded and do not cause "noise" in the estimation. The same

[10] There is an open debate on whether gross or net wages should be used to estimate wage equations. On the one hand, gross wages include the tax an individual pays to compensate the State for the previous help in financing her investment in human capital, and therefore both private and public returns to education could be found here. Should we need to isolate private returns, we would use net wages instead. On the other hand, gross wages are the ones the employer finally pays, independently on how this will be split between the State and the worker. It therefore represents labour costs and the value for the market of certain characteristics of the worker or the kind of job. We finally have decided using gross wages, though a parallel analysis with net wages could be of interest in next versions of the paper.

[11] The authors are very grateful to Florentino Felgueroso for sharing this variable he prepared.

[12] This is especially important in the case of apprentices, whose statutory wage is, by law, lower than the agreed statutory wages for the rest of workers. Here we have been able to exclude apprentices from the EES sample, but in the case of the ECHP this distinction was not possible since apprenticeship contracts are not distinguishable in the "type on contract" variable and the apprenticeship status is self-defined.

refining has not been possible in the estimations using the ECHP. All these distinguishing features may be causing some of the differences in the final results of the paper.

Why are we then interested on working with such different data-sets? First of all, they are complementary: the ECHP has a small sample size but allows trying the whole econometric exercise we have set out to develop. In the future, when more waves of the ECHP are available, it will allow us to estimate proper panel models, so the exercise here is a first approach to future works. Secondly, the EES is quite reliable since it is not only a large survey but also launched on firms. This ensures reliable information on wages and labour costs. The interviewed firms take the payslip of the whole payroll and offer first-hand truthful information, whereas in the ECHP workers, specially those with the highest level of earnings, may be tempted to not being sincere with this kind of information.

Section 6: The samples:
A. Wage earners, temporality and wage structure in the ECHP.

In this Section we present three different kinds of information that will be very useful to understand the main components and reasons for wage inequalities. First of all we present the proportion that employees represent among the whole population per broad groups of age. Secondly, we describe the profiles of temporary and permanent employees as well as the temporality rates for different personal and job characteristics, also distinguishing between young and adult workers. And thirdly the average hourly wages for range of categories of jobs and workers are displayed.

Table 1 shows the profiles of employees versus other types of links to the labour market (this is, self-employed and non-employed all together). Employment among adults is more concentrated in men than among the youth. Young employees are elder than the rest, while the opposite holds true for the adults. The level of education of adult employees is higher than that for non employed and self-employed. The trend is different for the young: employment concentrates in low and highly qualified, whereas youth with secondary education tend to be studying at the University and, probably therefore, non-employed. These differences in the profiles of employment and non-employment between young and adult workers lead us to estimate separately the probability of being a wage earner for both age groups.

Regarding the profiles of temporary workers versus permanent workers, Table 2 presents a distribution of personal and job characteristics for these groups of employees, and here the sample is also split by age group. The most relevant figures in the table are maybe temporality rates among young and adult workers: in average 27.12% of adult employees hold a temporary employment contract, while 68.34% of the young are employed on temporary basis. This illustrates the strategy of “flexibility at the margin” mentioned in Section 4; The fostering of temporary employment in order to promote job creation affected specially to the new entrants, and already stable posts were not

touched by the 1984 and 1994 changes. Therefore the process of labour market flexibility changed essentially working conditions for youth. Garrido and Requena (1997) interpret this phenomenon in terms of an "inter-generations non written pact": Spanish youth bear high non-employment and temporality rates, and their higher level of formal qualifications does not threaten the working conditions of the adults. Adults conserve their working conditions in spite of their obsolete qualifications, and pay for these "privilege" through providing housing and education to younger generations. In fact, Spanish youth remain in the parental homes until late twenties in many cases and the level of University demand is the highest if the European Union.

Besides, Table 2 offers much more information. For example, women tend to bear a higher temporality rate but distance between genders is wider for adults than for young workers. The higher the education level the lower the probability of holding a temporary employment contract. Temporary jobs are more concentrated in short working days (less than 30 weekly hours[13]) and in very long ones (50 hours or more). The distribution of tenure is obviously very correlated to the kind of contract: most of the temporary employment contracts may not be extended after 3 years (although changing the nature of the job for hiring the same worker under subsequent temporary contracts has been a common practice among Spanish employers). This and the fact that "per task or service" contracts are easily extended may explain the high tenures of some temporary employees. The distribution of workers among occupations is related to the one of skill levels: highly qualified workers (professional and technical) tend to register lower temporality than unskilled workers and labourers. And last but not least, temporary employment is quite unequally distributed among the industries or sectors of activity. Thus, it is very extended in building and agriculture for all ages, and it is also very used for hiring youths in "sales & hostels". On the opposite extreme public services and those who are equivalent to public but supplied by private firms (such as education and health services) are the ones that hold a higher level of permanent positions.

To end up this descriptive Section, Table 3 shows the average "gross" wages for the different personal and job categories we use in the subsequent wage equations. Just to give an idea of the effect of computing gross wages from the fiscal system rules and the net wages distribution as well as the purchase power of both of them, the chart below shows the average net and "gross" wages and the equivalence in euro:

Table 3. Hourly "gross" and net wage means for young fixed-term and permanent workers, 1995

	Young					Adult				
	Temporary		Permanent		Perman /tempor	Temporary		Permanent		Perman /tempor
Net wages (pta)	494.30	*227.00*	655.30	*315.00*	1.3	572.50	*341.60*	949.80	*525.20*	1.7
"Gross" wages (pta)	618.05	*297.08*	901.72	*437.18*	1.5	768.51	*490.48*	1411.94	*883.43*	1.8
Net wages (euro)	2.97	*1.36*	3.94	*1.89*	1.3	3.44	*2.05*	5.71	*3.16*	1.7
"Gross" wages (euro)	3.71	*1.79*	5.42	*2.63*	1.5	4.62	*2.95*	8.49	*5.31*	1.8

[13] We do not consider here marginal workers (those who work less than 15 hours per week) since they are not asked about many of the information items in the ECHP regarding job characteristics and working conditions.

"Gross"/net wages	1.25	*1.31*	1.38	*1.39*		1.34	*1.44*	1.49	*1.68*	
Source: ECHP, second wave. Spain. INE; Note: the numbers in italics refer to standard deviations										

From the information above we see that computed gross earnings are 25% and 34% higher than net earnings for temporary young and adult workers respectively and the difference is higher for permanent workers (38% and 49% respectively). And the average gross wage gaps between permanent and temporary workers is 50% for youth and 80% for adult employees.

As for the average hourly wages for different categories, Table 4 shows that the higher wages correspond to men, highly qualified, professionals who work 30-39 weekly hours, in the public sector or in large (private) firms. Of course, the longer the relation with the employer (tenure) the higher the average wage, other features being constant.

These distributions of employment, employees and wages are useful for a later interpretation of the results of the econometric model, which we present in the next Section.

B. Wage earners, temporality and wage structure in the EES.

The main features of the composition of employment that can be inferred from the EES sample are displayed in Table 5. The structure is similar to the one obtained from the ECHP: men are the majority group in the whole the sample, especially among the adults, temporality is much higher for youth. Tenure is much higher for permanent workers, both young and adults, although the former register shorter tenures in general. Permanent workers have a higher education attainment than temporary ones, although the education differential is wider for adults. And there are also differences in the distribution of temporary adult and young workers in activity sectors: adults register the highest temporality rates in the building sector and youth do it in sales and hostel.

Regarding the wage structure, here we just refer to the percentage the base wage (the one used in this exercise) represents in the whole monthly earnings. Pérez and Hidalgo (1999) describe very deeply both the employment composition and the wage structure using the EES. In their research they point out that the base wage weight decreases along with experience and tenure. Table 6 summarises this idea:

Table 6: Wage structure (in %), by age groups						
	16-17	18-25	26-35	36-45	46-55	56-55
Base wage	77	66	56	50	48	48
Personal complement	13	16	24	30	31	32
Overtime payment	1	2	1,5	1,5	2	2
Extra payments	0,5	2	2	1,5	3	2
Shift complements	8,5	14	16,5	17	16	16
Source: EES, 1995, from Pérez and Hidalgo (1999)						

Should this wage structure not be taken into account, wage differentials for young and adults would be underestimated.

7. The econometric model

The econometric specification we have followed consists on a pair of wage OLS equations (one for temporary and another for permanent employees) for each age group where we take into account the selection bias due to the fact of being a wage earner and holding either a temporary or a permanent contract. Afterwards an Oaxaca-Blinder decomposition of the wage differentials divides the differences due to the selection bias, the distribution of jobs and employees characteristics and the differences in returns between both types of employment contracts.

Wage gaps between temporary and permanent workers may be computed in three different ways. The simplest way would be including the type of contract as a dummy variable in a OLS wage equation; the sign and value of the coefficient corresponding to this variable accounts for the average wage differential between the two groups. This method has two important shortages: one is the existence of omitted variables and the other is the self-selection process: the information on wages is only observable for wage earners, and being a wage earner is a characteristic distributed neither randomly nor equally in the whole population (as Table 1 illustrated). We have done this first estimation as an initial test of the size and relevance of these differences and the need of taking into account the different wage structures of both contracts. The results are shown in tables A2 and A3.

The second method consists on estimating different OLS wage equations for the two groups. This does not solve the problem of self-selection, but generates a second one: if the decision of working under a temporary or a permanent contract is not exogenous and there are individuals that have a higher probability of being hired under one of the contracts, then there is a second selection bias due to the non random distribution of employment contracts.

The method we use in this piece of work is a switching endogenous model where we use Heckman's (1978) specification for taking into account the two selectivity bias mentioned above. Therefore, for each age group we estimate a system of four equations: two heterokedasticity robust[14] probit models and two parallel wage equations. The basic idea is to consider three possible activities and two labour markets. On the one hand, individuals can be temporary or permanent wage earners, or in a residual category that includes self-employment and non-employment. On the other, labour markets are constituted by permanent and temporary statuses. The consequence of the model is to generate two binary choices. First, individuals are divided between wage-earners (permanent and temporary) and the residual category formerly indicated. Then, the first category is divided between permanent and temporary wage earners. Thus, following the specification of Lachaud (1995) the model can be expressed as follows:

[14] White (1984) proposes a coefficient for correcting the heteroskedasticity due to the presence of non-independent explanatory variables in a equation (for a brief but clear explanation, see Greene, (1993)).

[1] $$Ln(W_p) = L_p\beta_p + u_p$$

[2] $$Ln(W_t) = L_t\beta_t + u_t$$

[3] $$I^*_1 = Z_1\alpha_0 + \varepsilon_1$$

[4] $$I^*_2 = Z_2\alpha_1 + \varepsilon_2$$

Equations [1] and [2] express the potential wage of permanent and temporary workers respectively, L_p and L_t are the wage determining attributes, β_p and β_t represent the vectors of coefficients associated with L_p and L_t, W_p and W_t are the wages and the disturbance terms are indicated by up and u_t. Z are vectors of exogenous variables that can contain some of all of the variables linked to L; Z_1 and Z_2 represent the characteristics of the probability of being wage earners and permanent wage earners respectively. Equation [3] is the selection of wage earners compared to the residual status (non wage earner) and equation [4] is the selection of the permanent wage earners compared to temporary ones. I_1* and I_2* are unobserved variables associated to observable indicator variables that take the value 1 if the retrospective unobserved values are grater than or equal to 0, and 0 if they are negative. In this case, I_1 is observed for the whole population; $I_2^* \geq 0$ if the individual is a wage earner. On the other hand, I_2 is observed if $I_1 \geq 0$.

The estimate strategy used is the following. Firstly, the probit estimation of the equation [3] allows for the estimation of the inverse Mills-ratio, λ_0. This coefficient captures the probability of being included in the sample as a wage earner (permanent or temporary). This, the dependent variable of this probit takes the value 1 if the individual is wage earner and 0 otherwise[15]. The independent variables used are gender, age, level of education of the head of the household, caring responsibilities, whether there are dependent children in the household, relation to the head of the household and region. Secondly, another probit model has allowed the estimation of equation [4]. In this case the dependent variable takes value 1 if the individual wage earner holds a permanent contract and 0 if s/he holds a temporary contract. The coefficients λ_1 and λ_2, capturing the probability of being a permanent and a temporary worker respectively have been determined. The independent variables used have been gender, age, level of education, sector of activity, public or private employer, firm size and region (and occupation on the case of the estimation of the EES sample), working day length. Thirdly, the following equations were estimated by OLS method.

[5] $$Ln\,(W_p) = \phi_p L_p + \sigma_p\lambda_0 + \Omega_p\lambda_1 + \pi_p$$

[6] $$Ln\,(W_t) = \phi_t L_t + \sigma_t\lambda_0 + \Omega_t\lambda_2 + \pi_t$$

[15] This first probit has only been estimated for the ECHP sample since, as mentioned above, the EES sample does not allow for such a sample selection.

Finally, wage differentials between private and public sectors can be decomposed into three sources:

a. A gap due to differences of the characteristics of workers and jobs (L).
b. A gap due to the pay structure (ϕ) and
c. The selectivity bias (σ, Ω).

The decomposition, generally evaluated at the sample means, is :

[7] $$\hat{Y}_p - \hat{Y}_t = \phi_p(\overline{L}_p - \overline{L}_t) + \overline{L}_t(\phi_p - \phi_t) + \lambda_0(\sigma_p - \sigma_t) + \Omega_p\lambda_p - \Omega_t\lambda_t$$

Where Y_p and Y_t refer to the mean of the logarithm of wages, and λp the mean of λ.

This is one of the three specifications of Oaxaca-Blinder decomposition. Inherent to this a strong assumption is made: the non-discriminatory wage structure is permanent employment, whose wage is supposed to be correctly related to their productivity[16]. The first element of the right hand-side of the expression refers to the differences in the distribution of personal and job characteristics for the wage structure that is taken as non discriminatory. Since our initial idea is that temporary workers will be worse paid than permanent ones and they are atypical workers we think than taking them as the discriminated group is a somehow realistic assumption. We also assume this in order to obtain more easily comparable results to those prior empirical pieces of work such as de la Rica and Felgueroso (1999).

The second element in the right side of the expression refers to the differences in the returns to the same characteristics given a certain wage structure (temporary workers, the ones we take as discriminated group). The third element refers to the effect of the selection bias estimates. We will call “characteristics/endowments” to the first element, “returns/discrimination” to the second one and “selection bias/selectivity” to the third one.

8. The main results

A. For the ECHP sample

The probit models for estimating the probability of being an employee and a permanent employee respectively have been designed for every gender and age group. The results are available from the authors but not included in the text for the sake of brevity. They are on line with the information in Tables 1 and 2: middle aged married men with no caring responsibilities and heads of the household (HOH) are more prone to be employees than the rest of individuals. The higher education attainment of the

[16] Neuman and Oaxaca (1999) explain the different decisions on references group and consider all the possibilities, but they point that the normal decisions is taking the dominant group or the “standard” group. In our case the dominant group is the permanent contract, but the standard group changes between young and adults: the standard contract for adults is the permanent one whereas the standard contract for young workers is the temporary one.

head of the household, the lower the probability of being an employee for young individuals and the higher for adults. Regarding permanent employees, also highly qualified middle aged males who work in the public sector for 30 to 49 weekly hours are more prone to be permanent whereas those who work in the building industry or as labourers are the ones most prone to be temporary versus any other industry.

Before developing the whole econometric model we have done two simple estimations for the whole samples to see the "gross" effect of the types of contracts on wages. Table 2.A. shows the results for the whole ECHP sample. The main feature we are interested as regards the Table is the fact that holding a permanent contract does significantly increase wages, and that temporary adult workers are not significantly better paid than their young counterparts. This may be reflecting what we said in Section 5: temporary adults, despite their potential experience in the labour market, are not better paid than those who are just beginning their working lives.

The next analysis tends to control for the selection bias due to the fact of being hired under the different contracts and in order to detect which part of the wage difference is due to the selection bias, which to the distribution of the characteristics and which to the returns to the characteristics.

Table 7 presents the wage equations for young and adult workers. These results confirm what was expected from the information in Table 4: first of all the intercept is higher for permanent than for temporary workers, revealing a certain wage higher regardless any characteristic in the expected direction. As for the rest of the variables, wages are higher for more experienced workers (the negative sign in the squared age coefficient showing the well known trend of decreasing marginal returns of experience), more (formally) skilled workers, professionals, public sector and large firm employees, and tenure seems to be significant just for adults. The longer the working week the higher the wage. This result is not easily comparable to the one in Cebrián and Moreno (1997) that find some evidence on the relative better pay of certain part-timers (professionals who work 35 weekly hours in the public sector) regarding full-timers.

The last two terms of the wage equations refer to the effect of both selection bias: being an employee and being a permanent or temporary employee. The first one is positive when significant. This could be interpreted as the fact that the features that make an individual more prone to be an employee are also paid together with the rest of features. A parallel meaning can be found in the sign and significance of the second selection bias coefficient: there are certain characteristics non directly observed in the wage determination process that have a positive effect on wages and, at the same time, a positive influence on the probability of being a permanent workers. The opposite holds true for temporary workers. Therefore the features that help an individual to hold a permanent contract and the characteristics of the job are better paid than the average, while the opposite holds true for temporary workers.

Table 8 below shows the main figures for the three elements that conform the Oaxaca-Blinder decomposition, distinguishing between young and adult workers. The main results from this Table may be summarised as follows: both young and adult permanent employees register higher hourly earnings than their temporary counterparts. These differences have different magnitudes and similar compositions.

Table 8: Oaxaca decomposition of wage differentials, ECHP		
	adults	young
Characteristics/endowments	0,412	0,245
Returns/discrimiation	-0,218	-0,112
Selection bias 1 (employees)	0,016	0,022
Selection bias 2 (contract)	0,427	0,269
total	0,637	0,424

For both young and adult workers the wage gap is due to the three factors studied: the characteristics of employees and jobs (employment structure) are different, being the ones for permanent workers better paid or being permanent more concentrated on the better paid features. The selection bias contributes to this distance, since it reflects how the characteristics of the persons that make them more prone to be employees and permanent workers also contribute to the achievement of higher wages. In fact the effect of the selection bias seems to as relevant in the wage gap determination as the employment structures themselves (the "endowments" component of the decomposition). On the other hand the returns or discrimination term is negative, which could be interpreted as follows: once an individual is hired under a temporary contract, after controlling for the personal and job characteristics that differentiate permanent and temporary workers, there are certain characteristics that are better paid for temporary than for permanent workers.

How could we interpret this? It seems that there are some kind of compensation differentials between permanent and temporary workers. Temporary workers earn, in principle, less than permanent workers (see the intercept term and the "total" estimated difference). They work in different types of jobs (Table 2 showed how they tend to concentrate in sectors such as building and agriculture) and under different conditions such as working day lengths, which definitively influences the hourly wage. Permanent workers and temporary workers have very different profiles and if ever these would coincide, temporality seems to be somehow partially compensated.

B. For the EES sample

Before controlling for the probability of being hired under certain conditions a joint OLS wage equation was designed using dummy variables for groups of age and type of contract. The results are in table A.3. Focusing on the effect of the type of contract, Young workers hired with apprenticeships or practice contracts are the ones

who receive the lowest wages, followed by temporary young contracts. As for permanent youth wages, they are not significantly different from those temporary workers aged 30 to 44 or older than 55. If we had not taken only the base wage but the whole, probably differences would be higher, since the older the worker the more important are personal complements in her wage (table 6). Here differences between permanent and temporary contracts are then also evident and the next aim is decomposing these differences.

Table 9 displays the main results for the wage equations using the EES. The signs of the coefficient are parallel to the ones with ECHP sample. Wages are positively related to tenure, experience and education attainment. It is also related to the property of the enterprise (public-owned enterprises seemed to offer higher wages) and to the firm size. Finally, the selection bias of being a temporary or a permanent employee influences the wage in the expected direction.

Table 10 shows the main results for the Oaxaca-Blinder decomposition using the EES. As expected, both young and adult permanent workers obtain higher wages than temporary ones. This wage gap is due mainly to two elements: on the one hand, the positive effect on wages of the features that characterise to permanent workers and differentiates them from temporary ones (that is, the effect of the selection bias). On the other hand, the composition of employment also widens wage differences, being permanent jobs the ones that tend to concentrate the best-paid characteristics (for workers and jobs).

Table 10: Oaxaca-Blinder decomposition: EES sample		
	adults	young
Characteristics/endowments	0,4174	0,3409
Returns/discrimiation	-1,2085	-0,4600
Selection bias (contract)	1,4632	0,3622
total	0,6721	0,2431
Source: EES 1995		

The sign of the returns component is negative for both young and adults, and parallel to the results for the ECHP. This is, the decomposition above shows that the wage gap studied has, essentially, an employment composition effect that is even higher than the partially compensating returns effect (the negative sign of the “returns” term).

9. Conclusions

Both data sets allow for finding a clear wage gap in favour of permanent workers. In both cases the employment composition seems to play an important role in this differential, supporting our initial hypothesis. The selection bias signs also confirm the fact that permanent and temporary jobs are different.

The differences in the wage gaps size for young and adults workers between both data-sets is a proof of the differences between the data-bases (design, sample size, meaning of the dependant variable, among others). Besides, the estimation

method has not been completely parallel since the first selection bias for being an employee may not be controlled for in the estimations for the EES sample. Could we differentiate between base wage and complements, the results would be somehow different for the ECHP. On the other hand, if public sector workers were included in the EES results could experience further change.

But the most shocking result we achieve in this piece of work is that other things being equal, although permanent and temporary workers are different and work on different tasks, certain features such as human capital and experience seem to be better paid for the latter, being a show of non-discriminatory wage differences. These results are different from former empirical evidence on the topic (up to now the main empirical works have found a positive discrimination term in favour of permanent workers) although since neither the econometric specification nor the data sets are completely parallel.

The fact that results do not coincide with prior evidence suggests further research and put both sets of results into a proper perspective. The significance of the bias component also encourages us to deepen our knowledge of this subject.

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ANNEX

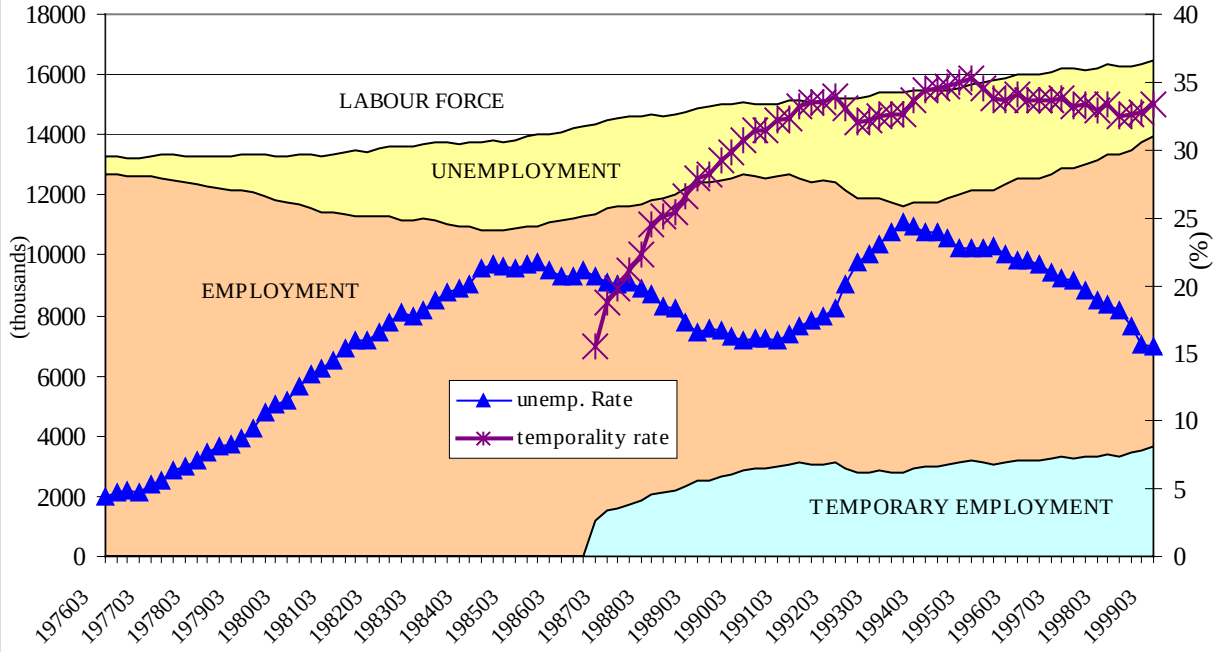
Table A.1: Evolution of temporality rates in the EU						
	1985	1990	1993	1996	N.contracts[17]	Months
Spain	15,6	29,8	32,2	33,6	3	36
Finland	10,5	11,5	12,7	17,3	1.5	
France	4,7	10,5	10,9	12,6	2	18
The Netherlands	7,5	7,6	10	12	3	
Sweden	11,9	10	11,5	11,8	2.5	12
Denmark	12,3	10,8	10,7	11,2	3	
Greece	21,1	16,5	10,4	11	2.5	
Portugal	14,4	18,3	9,8	10,6	3	30
Germany			8,9	9,6	4	24
Ireland	7,3	8,5	9,4	9,2		
Austria				8	1.5	
Italy	4,8	5,2	6	7,5	2	15
UK	7	5,2	5,9	7,1		
Belgium	6,9	5,3	5,1	5,9	4	30
Luxembourg	4,7	3,4	3	2,6		
Source: OCDE Employment outlook 1997-1999						

Table A 2. OLS wage equations for all workers , ECHP		
	Coeff.	sig.
Intercept	10,133	**
Male	0,253	**
Age	0,227	**
Age2	-0,018	
University	0,280	**
Secondary	0,090	**
30-39	0,443	**
40-49	0,576	**
50+	0,661	**
public sector	0,221	**
size + 99	0,283	**
proffesionals technicals, directives	0,474	**
sales, hostel, personal service	0,134	**
craft and related	0,084	**
Tenure	0,015	**
selection bias of being employee	0,071	*
permanent young	0,125	**
temporary adult	0,000	
permanent adult	0,210	**
Adjusted R^2	0,615	
N	4392	
* p value = 0,95 ** p value = 0,99		
Source: ECHP, (1995) INE.		

[17] Most of the countries do not determine restrictions to the use of temporary contracts when they respond to objective reasons. In Austria, Finland, Denmark and Sweden workers can appeal against employers after several renovations of the same temporary contract in order to revise the validity of the reasons for the temporary status.

Table A.3. OLS wage estimations for all workers , EES					
	Coeff.	sig.		coeff.	Sig.
tenure > 1 year	0,0086	**	Baleares	-0,0725	**
tenure	-0,3465	**	Canarias	-0,856	**
female	-0,2713	**	Cantabria	-0,0699	**
blue collar	-0,1113	**	Castilla y León	-0,0715	**
primary	0,0732	**	Castilla-La Mancha	-0,0346	**
compulsory	0,121	**	Cataluña	0,11	**
higher general education	0,3278	**	Comunid Valenciana	-0,0198	**
Vocational level, initial cycle	0,2313	**	Extremadura	-0,1359	**
Vocational level, 2nd cycle	0,2997	**	Galicia	-0,1521	**
University, first cycle	0,5507	**	Madrid	0,1041	**
University, second cycle	0,7496	**	Murcia	-0,1867	**
Manufactoring	-0,2063	**	Navarra	0,084	**
Energy	-0,0069		País Vasco	0,1024	**
Building	-0,1222	**	La Rioja	-0,0534	**
Sales and repairs	-0,2862	**	Ceuta y Melilla	0,1694	**
Hostel	-0,2747	**	Permanent 30-44	0,1756	**
Transport, communications	-0,1194	**	Permanent 45-54	0,2483	**
Financial services	0,0721	**	Permanent 55+	0,2392	**
real state, serv. to entreprises	-0,2427	**	Temporary < 29	-0,1653	**
20-199 workers	0,0977	**	Temporary 30-44	0,0101	
200+ workers	0,2041	**	Temporary 45-54	0,0969	**
privately owned	-0,0035		Temporary 55 +	0,1767	
collective agreement suerior to firms	0,0112	**	Training/practice < 30	-0,4398	**
firm or working centre	0,1473	**	intercept	6,9405	**
other type of colective agreement	0,0334				
Aragón	0,017	*	N	1339898	
Asturias	-0,0348	**	Adjusted R2	0,5903	
Source: EES (1995) * p-value = .95** p-value = ,099					

Figure 1: Main figures of the Spanish labour market 1977-1999



Source: Spanish Labour Force Survey (INE)

Figure 2: Yearly Evolution of employment and GDP in Spain (1988-1999)

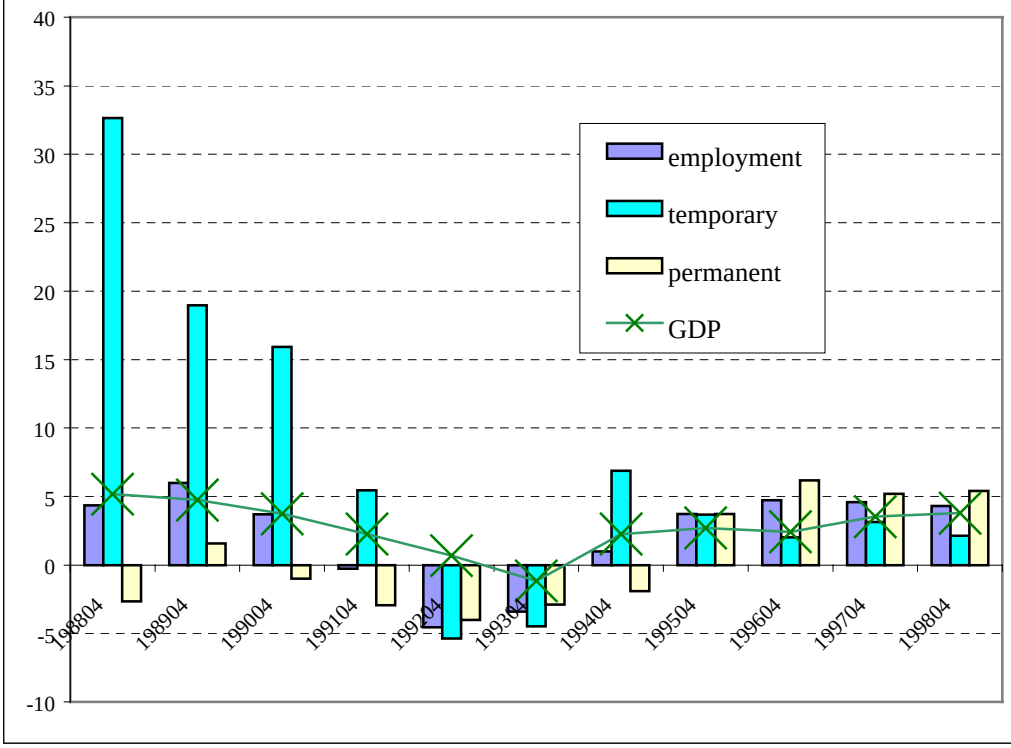


Figure 3: temporary employees and temporality rates for youth (1987-1999)

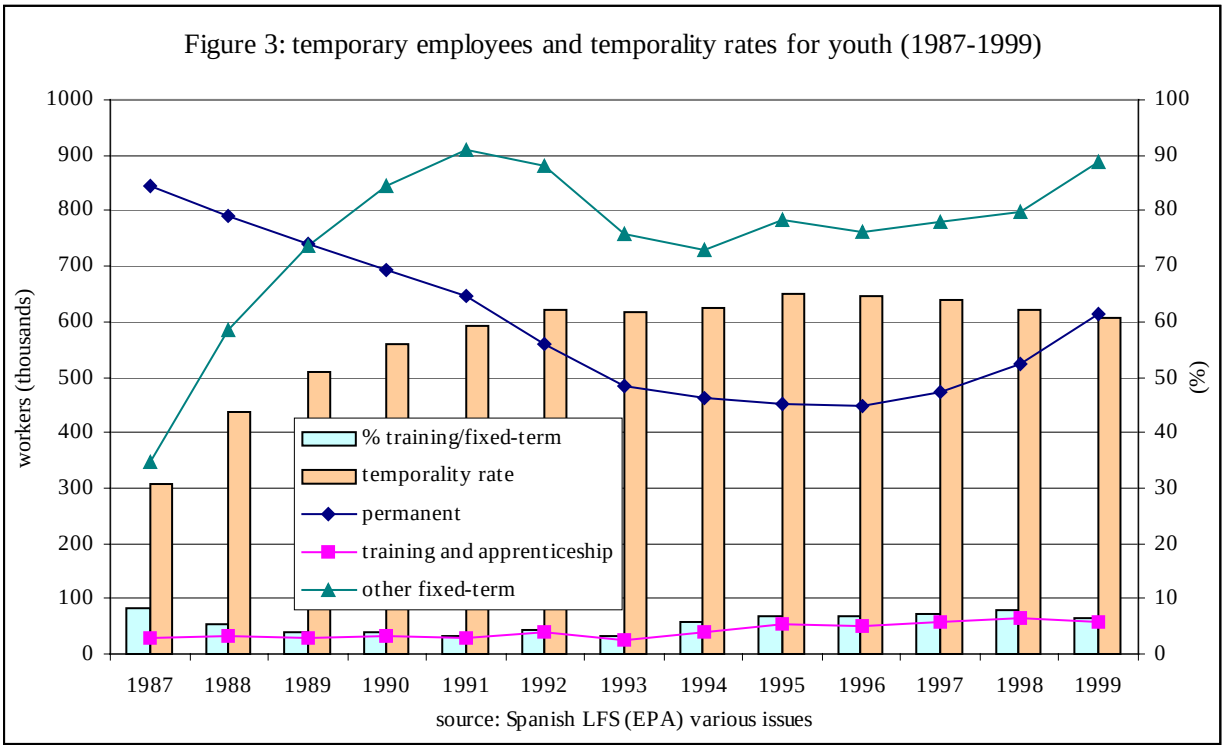


Table 1. Distribution of personal and family features among employees and other labour market situations ECHP						
	young		adults		average	
	others	employees	others	employees	others	employees
Gender						
Men	45.82	59.67	37.86	65.29	40.54	63.69
Women	54.18	40.33	62.14	34.71	59.46	36.31
age group						
16-24	71.21	45.47	0.00	0.00	23.96	12.99
25-29	28.79	54.53	0.00	0.00	9.69	15.58
30-44	0.00	0.00	40.58	62.40	26.92	44.58
45-64	0.00	0.00	59.42	37.60	39.43	26.86
Educational attainment						
low-educ	44.31	48.41	80.63	53.10	68.41	51.76
high school	41.88	29.56	10.98	18.05	21.38	21.34
University	13.76	22.04	8.39	28.85	10.20	26.90
Relation with the head of the household						
HOH	8.05	27.36	33.26	74.33	24.77	60.91
Spouse	10.11	10.68	48.96	22.40	35.89	19.05
Child	71.46	52.12	2.97	1.33	26.02	15.84
Other	10.38	9.85	14.81	1.94	13.32	4.20
N	2712	1429	5132	3390	7844	4819
Source: ECHP, second wave. Spain. INE						

Table 2: Distribution of job and personal characteristics among young and adult workers, 1995 (ECHP)										Temporality rate	
		Young				adult			All wage		
	temporary	Permanent	average		temporary	permanent	average		earners	Young	adults
Men	60.65	59.24	60.63		61.89	69.43	67.78		65.83	69.79	24.04
Women	39.35	40.76	39.37		38.11	30.57	32.22		34.17	66.10	31.05
Educational attainment											
Low-educ	53.57	35.09	48.37		71.13	45.54	52.02		51.02	74.73	35.6
High school	29.04	28.63	29.07		13.32	20.01	18.28		21.23	69.58	18.29
University	17.39	36.17	22.56		15.55	34.46	29.70		27.75	53.92	13.53
Working week											
15-30 hours	15.47	5.30	11.72		13.04	3.66	5.34		7.08	86.08	60.00
30-39 hours	10.07	10.99	10.16		10.39	24.72	21.24		18.22	63.95	12.59
40-49	62.68	57.00	59.23		57.73	57.88	58.58		58.76	65.91	25.71
50 +	17.84	21.05	18.89		18.05	13.78	14.84		15.94	66.40	31.80
Tenure											
< 1 year	24.51	3.16	15.87		15.49	0.32	3.26		6.21	91.60	91.90
1-5 years	64.37	45.16	56.60		53.94	9.27	17.94		26.99	66.40	58.80
5 + years	11.12	51.68	27.53		30.57	90.41	78.80		66.80	28.20	7.70
Occupation											
Direc-offocials	0.32	1.42	0.68		1.33	4.59	3.78		2.93	37.50	7.10
Professionals-technical	10.00	23.92	14.53		13.67	32.69	27.98		24.31	49.10	12.00
Sales & service	35.17	36.16	35.49		21.51	24.65	23.87		27.04	64.30	21.80
Craft and related	25.81	26.13	25.91		36.12	28.23	30.18		29.02	68.50	30.30
Low qualified	28.70	12.36	23.38		27.37	9.84	14.18		16.69	82.10	45.90
Sector of activity											
Agric,hh,other	12.91	6.83	10.93		18.36	7.07	9.87		10.16	76.80	45.30
Ind,ener,min	22.38	24.47	23.06		18.29	26.16	24.21		23.89	67.00	18.20
Building	14.22	5.45	11.37		20.87	4.71	8.72		9.44	83.40	60.20
Sales&hostel	28.31	22.25	26.34		14.39	13.16	13.46		16.98	71.60	27.10
Transport,com	13.74	20.09	15.80		13.62	18.11	17.00		16.67	58.20	18.80
Public serv	8.44	20.90	12.49		14.48	30.79	26.75		22.86	45.30	14.50
Private/public											
Public	10.60	20.20	13.98		13.11	36.14	30.88		26.27	50.26	11.60
Size of (private) firm											
0-19	47.82	47.75	50.79		23.08	49.19	30.80		26.27	70.34	42.80
20-99	13.06	22.41	20.46		15.36	20.45	17.29		36.26	77.37	32.79
100-499	9.24	7.15	8.40		9.08	5.83	8.54		18.16	67.35	18.15
500+	7.62	3.79	5.43		14.97	2.39	12.12		8.50	46.38	5.22
N	926	429	1355		871	2441	3212		4.00	68.34	27.12

Table 4: Hourly "gross" wage means for young fixed-term and permanent workers, 1995 (ECHP)										
	young					adult				
	Temporary		permanent		perm/temp	temporary		permanent		perm/temp
Gender										
Men	639.58	*286.95*	918.08	*406.37*	1.4	801.36	*469.42*	1443.39	*952.32*	1.8
Women	582.46	*310.31*	879.04	*476.91*	1.5	713.04	*520.24*	1338.87	*692.70*	1.9
educational attainment										
Low-education	559.36	*240.06*	751.81	*340.56*	1.3	654.97	*281.31*	1044.24	*467.21*	1.6
High school	612.48	*288.88*	850.61	*383.30*	1.4	740.42	*301.76*	1380.38	*640.46*	1.9
University	803.27	*380.09*	1114.35	*491.34*	1.4	1351.88	*873.52*	1955.46	*1142.64*	1.4
Working day										
15-30 hours	648.45	*331.16*	1056.98	*762.81*	1.6	761.07	*637.28*	1589.13	*1157.59*	2.1
30-39 hours	706.37	*404.68*	1251.18	*503.89*	1.8	971.05	*571.39*	1649.01	*663.05*	1.7
40-49	640.24	*276.99*	886.00	*355.85*	1.4	775.42	*446.51*	1328.19	*841.75*	1.7
50+	484.98	*218.14*	695.42	*375.76*	1.4	645.19	*442.14*	1306.45	*1201.71*	2.0
Tenure										
< 1 year	572.70	*280.10*	618.85	*246.97*	1.1	643.59	*281.95*	1017.67	*806.64*	1.6
1-5 years	622.49	*295.35*	877.22	*451.92*	1.4	809.76	*575.36*	1051.90	*635.57*	1.3
5 + years	717.32	*353.16*	955.27	*436.18*	1.3	853.17	*522.02*	1451.59	*883.14*	1.7
Occupation										
Direc-offocials	662.47	*143.00*	1113.79	*452.77*	1.7	1743.98	*685.89*	2235.82	*1700.13*	1.3
Professionals-technical	989.52	*449.29*	1187.32	*521.76*	1.2	1398.88	*909.93*	1955.88	*1008.56*	1.4
Sales & service	565.67	*255.50*	860.26	*391.46*	1.5	657.71	*285.19*	1188.10	*526.92*	1.8
Craft and related	592.44	*248.27*	837.63	*372.96*	1.4	713.81	*267.01*	1113.80	*486.94*	1.6
Low qualified	576.97	*224.87*	665.16	*291.14*	1.2	605.76	*266.82*	851.08	*323.21*	1.4
Private/public										
Public	861.65	*431.57*	1275.79	*489.24*	1.5	1067.20	*623.41*	1645.03	*749.42*	1.5
Private	588.67	*261.98*	797.35	*358.17*	1.4	716.72	*444.14*	1275.87	*926.49*	1.8
Size of firm										
0-19	534.26	*224.63*	720.00	*326.17*	1.3	659.19	*373.92*	951.76	*553.36*	1.4
20-99	660.40	*286.79*	832.54	*377.68*	1.3	800.71	*580.09*	1231.65	*1059.77*	1.5
100-499	725.35	*331.10*	905.34	*321.45*	1.2	820.04	*351.34*	1421.93	*1039.05*	1.7
500+	648.20	*199.15*	1056.05	*386.74*	1.6	1034.10	*385.50*	1767.51	*962.68*	1.7
Average	618.05	*297.08*	901.72	*437.18*	1.5	768.51	*490.48*	1411.94	*883.43*	1.8
Source: ECHP, second wave. Spain. INE; Note: the numbers in italics refer to standard deviations										

Table 5. Distribution of employment for young and adult temporary and permanent worker: EES sample						
	all employees		young		adults	
	permanent	Temporary	permanent	temporary	permanent	temporary
Gender						
Women	21,59	27,31	36,13	32,31	19,16	21,35
Men	78,41	72,69	63,87	67,69	80,84	78,65
Tenure						
less than 1 year	1,17	36,72	3,61	38,62	0,76	34,45
1 to 3 years	10,65	57,33	30,97	56,77	7,25	58,00
3 to 5 years	17,52	5,82	42,80	4,58	13,29	7,29
more than 5 years	70,66	0,13	22,62	0,04	78,71	0,25
Activity sector						
mining & extractive industries	0,81	1,07	0,71	0,77	0,82	1,43
manufactoring	65,35	52,95	62,14	55,54	65,88	49,87
Energy	1,97	0,71	0,94	0,62	2,15	0,81
building	3,83	14,37	2,96	9,03	3,98	20,73
Sales and repairs	8,48	10,58	13,91	13,67	7,57	6,90
hostel	3,96	7,68	4,69	7,71	3,84	7,65
Transport, communications	4,16	3,51	3,67	2,74	4,24	4,44
Financial services	8,02	1,79	5,96	2,34	8,36	1,14
Real state, serv. to entreprises	3,42	7,33	5,01	7,58	3,16	7,03
Average age	39,83	29,93	26,21	24,37	43,64	39,36
Aged under 30	14,35	54,35	100,00	100,00	0,00	0,00
Education level						
no studies	2,57	1,83	0,70	0,75	2,89	3,11
Primary	33,87	27,30	12,68	15,30	37,42	41,59
Compulsory	27,44	42,92	41,56	49,50	25,07	35,08
higher general education	11,75	8,08	13,88	9,51	11,39	6,37
vocational level, initial cycle	4,85	5,12	7,76	6,46	4,37	3,52
vocational level, 2nd cycle	8,12	7,41	13,66	10,15	7,19	4,15
university, first cycle	5,15	3,39	4,20	3,92	5,31	2,76
university, second cycle	6,25	3,96	5,57	4,41	6,37	3,43
firm size						
5-19	18,02	23,29	22,75	21,42	17,23	25,52
20-199	56,65	63,39	56,42	61,84	56,69	65,23
200+	25,33	13,32	20,83	16,74	26,08	9,24
Property						
Public	1,79	0,25	0,76	0,22	1,97	0,28
Private	98,21	99,75	99,24	99,78	98,03	99,72
N	103282	35748	14826	19430	88456	16318
Temporality rates	25,71		56,72		15,57	
Source: EES 1995						

Table 7: OLS "gross" wage estimations for adults and young employees (ECHP)								
	Young				Adult			
	Temporary		Permanent		Temporary		Permanent	
	Coeff	Sign	Coeff	Sign	Coeff	Sign	Coeff	Sign
Intercept	9,092	**	10,410	**	9,185	**	9,610	**
Male	0,231	**	0,203		0,321	**	0,218	**
Age	0,116		-0,016		0,084	**	0,048	**
Age2	-0,002		0,001		-0,001	**	-0,001	**
University	0,087		0,049	*	0,349	**	0,258	**
Secondary	-0,005		-0,095	**	-0,057		0,081	**
30-39	0,392	**	0,406	**	0,434	**	0,387	**
40-49	0,604	**	0,520	**	0,598	**	0,494	**
50+	0,641	**	0,680	**	0,612	**	0,616	**
Public sector	0,109	*	0,355	**	0,094		0,184	**
Size + 99	0,123	*	0,222	**	0,239	**	0,325	**
Proffesionals technicals, directives	0,244	**	0,323	**	0,481	**	0,513	**
Sales, hostel, personal service	0,008		0,210	*	0,105	*	0,182	**
Craft and related	-0,039		0,128		0,076		0,123	**
Tenure	0,011		0,004		0,008	*	0,014	**
Selection bias of being employee	0,041		0,115	*	0,039		0,080	*
Selection bias permanent/temp	-0,279	**	0,220	**	-0,440	**	0,339	**
N	836		408		785		2363	
Adjusted R^2	0.418		0.477		0.507		0.497	
Source: ECHP, second wave, Spain, INE								
** p-value = 99%, * p-value = 95% (heterokedasticity robust)								

Table 9: OLS Wage equations for young and adult temporary and fixed-term workers EES								
	Young				adults			
	permanent		temporary		permanent		temporary	
	coeff	sign	coeff	sign	coeff	sign	Coeff	sign
Female	-0,242	**	-0,162	**	-0,289	**	-0,254	**
1 to 3 yr	0,583	**	0,642	**	0,533	**	0,610	**
3 to 5 yr	0,684	**	0,706	**	0,589	**	0,668	**
More th 5 yrs	0,684	**	0,812	**	0,663	**	0,623	**
Manufactoring	-0,337	**	-0,231	**	-0,239	**	-0,181	**
Energy	-0,071		-0,159	*	0,004	**	-0,041	
Building	-0,276	**	-0,102	*	-0,118	**	-0,024	
Sales and repairs	-0,394	**	-0,318	**	-0,209	**	-0,241	**
Hostel	-0,297	**	-0,251	**	-0,197	**	-0,113	*
Transport, communications	-0,225	**	-0,177	**	-0,158	**	-0,091	*
Financial services	-0,208	**	-0,117	*	-0,003	**	-0,077	
real state, serv. to entreprises	-0,333	**	-0,350	**	-0,162	**	-0,172	**
age	0,125	**	0,283	**	0,059	**	0,014	*
squared age	-0,002	**	-0,005	**	-0,001	**	0,000	
primary	0,062		0,027		0,062	*	0,051	*

compulsory	0,023		0,002		0,121	*	0,056	*
higher general education	0,197	**	0,048		0,334	**	0,187	**
Vocational level, initial cycle	0,157	**	0,064		0,246	*	0,132	**
Vocational level, 2nd cycle	0,218	**	0,078	*	0,317	**	0,236	**
University, first cycle	0,340	**	0,193	**	0,541	**	0,437	**
University, second cycle	0,516	**	0,283	**	0,784	**	0,520	**
20-199 workers	0,104	**	0,090	**	0,104	**	0,069	**
200 + workers	0,261	**	0,195	**	0,237	**	0,177	**
Private firm	-0,100	*	-0,237	**	-0,011	**	-0,153	*
Selection bias	0,763	**	-0,354	**	1,506	**	-0,716	**
Intercept	4,292	**	2,955	**	3,892	**	6,286	**
N	14826		19430		88456		16318	
Adjusted R^2	0,4727		0,4689		0,5232		0,4107	
Source: EES 1995								