Temporary agency work in Portugal, 1995–2000. *

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May 2007

Abstract

Whereas there is widespread belief that workers in temporary work agencies (TWA) are subject to poorer working conditions, in particular pay, than comparable workers in the rest of the economy, there is little evidence on whether that is driven by the sector *per se* or by the workers' characteristics. The first aim of this analysis is therefore to quantify the wage penalty, if any, for workers in TWA. Remarkable linked employer-employee data covering the whole private sector in Portugal enable us to account for observable as well as unobservable worker quality. Our results suggest that workers in TWA are indeed subject to a wage penalty and that the major share of this penalty is associated with the attributes —both observable and unobservable —of the worker. The wage penalty is 36% if only the firm's attributes are controlled for; it drops to 16% if we also control for the workers' observable attributes, and to 5% when unobservable characteristics of the workers are taken into account. However, wages in jobs that follow agency work are not lower than in jobs that follow non-agency work.

KEYWORDS: Matched employer-employee data; temporary work agencies; worker unobservable quality.
JEL CODES: D21, J31, J40.

*We thank participants in a seminar held at IZA Bonn for very constructive comments. We are grateful to the Ministry of Employment, Statistics Department, Portugal, for access to the data.

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1 Introduction

> There is much anecdotal evidence of poor working conditions in agency work, but much less hard evidence. None of the research referred to can differentiate between factors related to agency work *per se* (as a form of employment) and those related to the job or the worker. (Storrie, 2002, p56)

Employment in temporary work agencies (TWA) has increased throughout Europe over the last decade. This development has prompted the European Commission to propose a directive to safeguard temporary agency workers' working conditions. In 2002 it issued a proposal for a European Parliament and Council Directive on working conditions for temporary agency workers (EIRO, 2002; European Commission, 2002), which aims to ensure that temporary workers are not discriminated against, receiving at least as favorable a treatment as a regular comparable worker in the firm where (s)he is posted. The relevant dimensions are the basic working and employment conditions, including duration of working time, rest and holiday periods, time of work, and seniority.

This concern comes from widespread evidence that workers in TWA face worse working conditions than comparable workers in the placement firm. For example, Forde and Slater (2005) report a penalty of about 11 percent for men and 6 percent for women in TWA in contrast to comparable workers in the UK. Evidence in Houseman (2001) suggests that TWA may be used to save on worker benefit costs, such as health insurance and pension contributions.

Concern about workers in TWA has also focused on whether they remain in low-paying, dead-end jobs or they find, through the employment in the TWA, a chance to a standard working career. High turnover involves a loss of firm-specific

human capital, a decrease in productivity if production depends on continuous cooperation of workers, and possibly less coverage by trade unions, factors that may contribute to poorer career prospects. On the contrary, TWA could serve as a screening method (Autor, 2001; Houseman, 2001) at little cost for the firm, i.e. without a commitment about a future employment contract. Since temporary agency work matches a worker typically with several firms, it can be seen as a job matching mechanism. Ichino, Mealli and Nannicini (2006) and Booth, Francesconi and Frank (2002) analyze the consequences of agency work for the workers' careers. Agency workers' careers in the USA seem to suffer in comparison to other workers. The evidence for European countries is mixed, e.g., Zijl, van den Berg and Heyma (2004) find for the Netherlands that agency work is associated with subsequent stable employment spells. Similarly, Amuedo-Dorantes et al. (2006), for Spain, and Ichino et al. (2006), for Italy, find that agency work is associated with stable subsequent employment. However, Kvasnicka (2005) finds for Germany that agency work does not improve the subsequent careers of agency workers, and Antoni and Jahn (2006) find that agency workers in Germany are increasingly found in repeated spells of agency work. Similarly, Autor and Houseman (2005), using random placement assignments, do not find that agency work is associated with more stable careers.

We analyze linked employer-employee data, obtained from the Ministry of Employment in Portugal, to estimate wages and subsequent career paths for workers in TWA. These administrative data cover the universe of Portuguese workers in the private sector for the period 1995–2000. The panel dimension of these data allow us to control for worker and industry specific effects. Temporary agency work in Portugal is heavily regulated which allows an indirect assessment

of whether or not it is possible to safeguard workers from (alleged) poorer working conditions offered by TWA.

The purpose of the paper is twofold. We analyze if agency workers are subject to lower wages by estimating wage regressions that control for firm and worker attributes. The existence of longitudinal data on workers enables controlling for worker unobservable quality in the analysis of the wage. The second part of the analysis is concerned with the consequences on workers' careers. We compare the wages for workers who started a new job and distinguish between workers whose previous job was with an agency and with those who came from a "regular" job to investigate any lasting detrimental effect of agency work on the workers' career.

Our empirical results suggest that temporary agency workers are indeed subject to a wage penalty. Because participation in agency work is not random, we control for worker fixed-effects in our estimations and estimate that agency workers earn about 5 per cent less than otherwise equal workers. The comparison of wages in new jobs, where we select workers who had and who had no previous experience in TWA, shows that workers who previously had an agency job do not earn lower wages than comparable job changers.

2 Background

The distinguishing feature of work for a TWA is the tripartite nature of the relationship and the commercial nature of the contract signed between the agency and the placement firm, which sets it apart from a traditional labor contract between a worker and a firm. Even though a particular assignment of a worker is temporary, it is not the duration of the contract that characterizes this sector.

While there is widespread belief that agency workers enjoy lower wages than comparable workers, in particular in countries where legislation is less stringent and trade union coverage is lower, there is also reasoning and evidence pointing in the opposite direction. Agency workers might be entitled to a wage premium that would compensate for the risk of a more variable income stream. Also, it is often stressed that TWA have difficulty recruiting workers and need to offer favorable conditions to attract them, for example, by providing free general training (Autor, 2001), higher wages, in particular for specific groups of workers (Storrie, 2002), or through marketing campaigns.

There is also some evidence of the circumvention of employment standards for agency workers, especially in terms of pay and working time regulations, and also evidence of illegal abuse (Storrie, 2002). However, at the the upper end of the pay scale, for instance, in the health sector, agency workers seem to enjoy better pay, and possibly working conditions.

Short employment spells, possibly combined with low investment in human capital, and fewer workers' rights due to lower coverage by trade unions, are some of the factors that may contribute to poor career prospects for workers engaged in TWA. These effects may be reinforced if the usually short duration of the employment spell leads to lower loyalty by the worker towards the firm or less trust by the firm and co-workers. Again, some counteracting forces have been pointed out. In particular, TWA have been seen as a networking mechanism or an occupational labor market, which facilitates the acquisition of information on several firms by the workers and to accumulate knowledge about the market. Also, Autor (2001) has shown that TWA may provide free general training, since it may enable them to attract more workers and to identify better quality workers. In general, the need to attract workers and the existence of economies of scale

in the provision of some types of training have been pointed out as reasons why TWA may indeed provide more training than legally required.

3 Data

The study is based on linked employer-employee data collected annually by the Ministry of Employment in Portugal. The data cover all firms with wage-earners in manufacturing and the services in the private sector and, because data provision is compulsory only for companies with wage-earners, the coverage of the agricultural sector is low. Public administration and domestic work are not covered. Reported data include the firm's industry, location, employment, ownership (foreign, private or public) and sales, and the worker's gender, age, occupation, schooling, skill, date of admission into the company, monthly earnings, and duration of work. We use data from 1995 to 2000 since identification of temporary agency work was not possible for earlier years. The Portuguese Classification of Industries reports, under code 74500, firms in "labor recruitment and provision of personnel".[1] This is the definition we use to specify temporary agencies and their workers.

The administrative nature of the data and the legal requirement for the firm to post the data in a public space contribute to its reliability. Workers are identified by a personal identifier, based on a transformation of the social security number, and it is thus possible to track him/her over time. We select workers aged 16 to 65 for the analysis. Given the relevance of the distinction between stocks and flows in this type of activity (with very high worker turnover), it should be stressed

[1] This classification follows closely NACE, the Classification of Economic Activities in the European Community. Before 1995, a different industry classification which did not assign a distinct code to this activity was used.

that the data refer to the stock of workers at a reference week in October each year.[2] Extensive checks have been performed to guarantee the accuracy of the data, using gender, date of birth, highest educational level and starting date in a company. (Some workers whose schooling level decreased over time were dropped from the analysis. Details on the procedures followed to clean the panel can be found in Cardoso (2005).)

Gross hourly wages were computed as $hw = (w + s + r)/h$, where w stands for the regular wage, s are seniority-indexed components of pay, r are other regularly paid wage components, and h refers to the normal number of hours worked. Wages are deflated using the Consumer Price Index (with the year 2000 as the base period).

4 Temporary agency work in Portugal

4.1 Legal setting

The market for TWA is tightly regulated in Portugal.[3] Permission to operate as a TWA is granted by the Ministry of Employment and Social Security. Candidates must show proof of a clean criminal record, previous compliance with labor law and tax and social security duties, technical capacity (i.e., a qualified director with experience running human resources and supporting administrative staff), as well as a sound financial situation.[4] TWA are allowed a wide range of activities, which include recruitment and selection of personnel, vocational orientation, training,

[2] Because of the timing of observations, we do not analyse the job tenure with temporary work agencies as the data do not provide information on short job durations.

[3] Decree-Law 358/89, Law 39/96, and Law 146/99.

[4] A fund, linked to the national minimum wage, must be deposited, or a bank or insurance company guarantee presented, which is used for wage payments if the company does not pay its workers.

consulting and human resources management. The operation of the agency is regularly monitored and it must present every semester the record of workers hired out to using firms.

The work contract is signed between the TWA and the worker. The formal employer is thus the TWA, and not the user firm, and it is responsible in particular for paying the workers, fulfilling the employer's Social Security obligations, providing insurance against work-related accidents, and allocating a minimum of 1% of the total turnover to training. (The TWA is legally forbidden to charge the worker for training provided.) The user firm is responsible for fulfilling regulations on health and security at the workplace.

The work contract between the worker and the TWA can be open-ended or of limited duration. If open-ended, the worker is entitled to pay, even in periods when (s)he is not actually assigned to a using firm. The amount is specified by collective bargaining or, if the worker is not covered, two thirds of the national minimum wage.

Firms must justify the need for temporary workers and a narrow set of reasons is permitted: to replace workers on leave; for seasonal work; in case of a temporary increase in product demand; to bridge recruitment gaps, while the process to fill a vacancy is taking place. The contract between the agency and the using firm must also specify, among other things, the duration of the assignment (which depends on the reason for use of temporary work, with a maximum limit of six months to two years), the description of tasks to be performed, the wage the using firm pays to its workers who perform similar tasks, and the amount paid to the agency. An agency worker is entitled to the wage set by collective bargaining for temporary agency work or the wage paid by the user firm to similar workers, whichever is *higher*. Because these rules aim at providing equal treatment for

regular and agency workers, we would expect to see no, or a moderate, pay differential between agency and non-agency workers. Over 90% of the agency workers are covered by a collective bargaining contract. Trade unions have a small role in setting the working and wage conditions for agency workers in Portugal as most workers are covered by collective bargaining contracts.

Although the legalization and regulation of this type of agency work took place relatively early in comparison to other European countries, the use of TWA is not as widespread in Portugal as in other European countries. In 1999, it comprised about 1% of total employment, below the European Union average of about 1.4%. In terms of growth, although employment in the sector more than doubled between 1995 and 1999, its growth has been modest when compared to most other European countries (Storrie, 2002, p23).

5 Descriptive evidence on the labor force of temporary work agencies and their career prospects

Table 1 lists the number of agencies and agency workers in our sample. The number of firms and workers in the TWA sector increased from 1995 to 2000 and we observe a rising share in overall employment, from 0.5% to 1.1%. The number of firms, although increasing in absolut numbers, had a share of about 0.1% of all firms in the private sector. Of the 243 TWA that operated in 2000, eight were foreign companies and they employed 19% of the workers in the sector.

[Table 1 near here.]

Table 2 provides the descriptive statistics of our estimating sample, by TWA status. On average, agency workers had a lower wage than non-agency workers, the mean hourly wages differed by about 12%. (Agency workers received on

average some 74PTE less than the the mean hourly wage of about 680PTE for non-agency workers). Agency workers are concentrated in the Lisbon region.[5] We observe a similar percentage of women in TWA as in other firms in the private sector, about 42% of employees are women. Agency workers are on average five years younger than workers in the rest of the private sector, who are on average 36 years old. Agency workers are on average slightly better educated than workers in other firms, about 50% of agency workers have 6 school years or less, the workers in other firms some 61% have 6 years or less of schooling. However, when compared to the rest of the private sector, there are more low-skilled and administrative workers in TWA. We see that workers in TWA have short tenures with the agencies, some 68% of agency workers have tenures of less than one year. In contrast, for all other workers the fraction of workers who have tenures of less than one year is 16%. The incidence of part-time is higher (8% for the workforce in general and 25% in TWA).

[Table 2 near here.]

For 2000 only, data on the type of contract is available. This additional information indicates that 74% of agency workers have a fixed-term contract, as opposed to 15% in the rest of the private sector. The majority of agency workers (over 90%) is covered by a collective bargaining contract specific to the sector. Nevertheless, Storrie's inter-country comparison indicates that collective bargaining has played an insignificant role in TWA in Portugal (Storrie, 2002, p15).

[5] The agencies in Lisbon have on average a larger volume of business than companies in the rest of the economy and the share of the market held by the five largest firms, either in terms of employment or sales volume, has remain stable at about 33% (not shown in the Table). These figures are consistent with those reported in Storrie (2002) and they show Portugal as one of the countries where TWA is least concentrated in Europe, only the UK and Germany have a lower market concentration.

As to the likelihood of leaving the sector, about half of agency workers are agency workers year-on-year, some 30% are agency workers in three consecutive periods, and about one fourth after 3 or 4 years; and 19% after 5 years. From the 50% that left agency work between two points in time, we find that 7% moved into construction, another 7% worked in the trade sector, 6% in machinery, 4% in restaurants and hotels, and 3% in the metal industry.

6 Lower pay in temporary agency work?

6.1 Firm vs personal characteristics

Table 3 reports the results of a set of wage regressions where we estimate the hourly wages of workers in the private sector. Specification 1 controls for firm characteristics, age and education of the workers. Specification 2 also control for workers' occupation and skills. Because workers do not randomly choose to work for a TWA, any observed wage difference between agency and non-agency workers may be caused by personal characteristics not observed by us. We therefore estimate wage regressions where we control for worker unobservable quality by introducing worker fixed effects.[6] These are presented in Columns 3 and 4.

[Table 3 near here.]

If we only control for the firms' attributes and a small set of human capital controls, we find that working for a TWA is associated with a wage penalty of about 22%, almost double the penalty observed in the raw data. If we further

[6]Identification in this regressions of the impact of education on wages is feasible given that a share of the workforce is observed changing —increasing —its education level. These shares are 2%, 2%, 2%, and 1%, respectively for workers initially observed with 4, 6, 9, and 12 years of education.

control for the workers' occupation and skills we estimate a wage penalty of about 16% for agency workers.

However, a remarkable share of the reported gap is associated with the unobservable quality of the labor force in temporary agency work. Indeed, the wage gap is reduced to approximately 5% once we include worker fixed effects in the regression. The estimated difference between agency and non-agency workers does not change much once worker fixed-effects are included in the regressions.

6.2 Wage development after leaving temporary agency work

We now examine the wage development after leaving the temporary agency. Two different hypotheses on the wage development on leaving the sector may be formulated. Temporary agencies might work as a network which grants the worker access to information on a wide set of firms and thus placing him/her in a better position to find a good job match, possibly leading to being formally hired by a firm that already used his/her work through the temporary work agency. As such, s/he would not really be a newcomer into the new firm when formally hired, but instead would have already accumulated some firm-specific human capital. We would thus expect the worker to have a comparable, if not higher, wage than other new workers on leaving the TWA.

Alternatively, working for a TWA might be interpreted by employers as a signal of lower ability and would result in fewer and/or worse job offers than for other workers. This kind of mechanism would lead to poorer employment prospects and lower job quality for workers who were once engaged in the temporary work sector. In this case, the wages for workers who leave TWA and obtain "regular" employment are expected to be lower than for others who start a new job.

To investigate these alternative hypotheses, we compare workers who changed jobs, distinguishing between those who moved from an agency to a regular firm, and those who moved between regular firms. Table 4 reports the estimation results.

[Table 4 near here.]

Upon entrance into the "regular" sector, previous agency workers are estimated to receive an about 3% lower wage, relative to other job changers switching between jobs in the regular sector. However, that penalty vanishes once we control for the workers' unobservable characteristics. We estimate that having worked for a temporary work agency does not have a detrimental impact on entry wages in a job that follows agency work. The post-TWA wages are not significantly lower than wages for workers who come from an non-agency job, suggesting that having worked for a TWA is not interpreted as an indication of lower ability by the employers.

7 Conclusion

Using unique linked employer-employee data from Portugal that cover the entire private sector we investigate whether or not workers for temporary work agencies receive a lower wage than workers who work for "regular" firms. Despite the extensive legal protection of agency workers, we observe a wage difference of about 12% for agency workers in the raw data.

Our estimates suggest that temporary agency workers are indeed subject to a wage penalty, a major share of which is associated with both observable and unobservable characteristics. The wage penalty is estimated to be about 36% of non-agency workers' wages if only the characteristics of the temporary work

agencies are used in the regressions, which would support the idea that TWA offer their workers poor pay (and possibly poor working conditions).

However, if we control for standard human capital indicators, the wage penalty is estimated to be around 16% on non-agency workers' wages. This is still a sizeable wage difference which, in connection with concerns about these workers not being able to obtain "regular", i.e., non-agency work, is possibly convincing evidence to support attempts to safeguard these workers as e.g. seen by the European Commission.

The available data allow a more careful analysis in that we are able to control for unobservable workers' characteristics by using workers' fixed-effects in the estimations. If workers' fixed-effects are estimated, the wage penalty is estimated to be 5% of non-agency workers' wages. This, relatively moderate, wage penalty is perhaps the outcome of Portugal's stringent legal requirements.

Public concerns about agency workers are also about whether or not agency workers are able to "escape" the temporary sector, i.e., finding non-agency employment. The data point to some persistence of workers in the TWA sector as about one half of agency workers are observed in the sector year-on-year. We estimate that the wages of previous agency workers, in comparison to workers who changed from non-agency to non-agency employment, are not lower.

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Tables

Table 1: Temporary agencies and agency workers in Portugal, 1995–2000.

	Firms	Workers
	(percent of all private sector)	
1995	148	7,667
	(0.10)	(0.49)
1996	158	9,429
	(0.10)	(0.60)
1997	184	13,149
	(0.11)	(0.78)
1998	203	15,631
	(0.11)	(0.90)
1999	223	17,179
	(0.11)	(0.95)
2000	243	20,088
	(0.11)	(1.07)

Note: Own calculations based on MTSS, 1995-2000, Portugal.

Table 2: Descriptive statistics.

	"Regular" sector		TAW	
Variable	Mean	Std. Dev.	Mean	Std. Dev.
Hourly wage (ln)	6.528	0.574	6.413	0.398
Firm size (ln)	4.215	2.305	5.581	1.429
Foreign firm	0.092		0.117	
Lisbon	0.409		0.777	
Age	36.272	11.2	31.509	10.383
Female	0.42		0.416	
Education				
4 yrs	0.383		0.304	
6 yrs	0.231		0.207	
9 yrs	0.148		0.185	
12 yrs	0.155		0.253	
16 yrs	0.062		0.040	
Occupation				
Profess., scientists	0.033		0.009	
Middle manag. & technicians	0.098		0.044	
Administrative workers	0.163		0.256	
Service and sales workers	0.132		0.104	
Farmers & skilled agr. fish. workers	0.003		0.005	
Skilled workers and craftsmen	0.265		0.275	
Machine operators, assembly workers	0.131		0.100	
Unskilled workers	0.148		0.198	
Tenure				
less than 1 year	0.156		0.680	
1 <= tenure < 2 years	0.108		0.125	
2 <= tenure < 3 years	0.080		0.052	
more than 3 years	0.656		0.143	
Obs.	10,182,520		83,143	

Note: Own calculations based on MTSS, 1995-2000, Portugal.

Table 3: (Log) wage regressions.

	(1)	(2)	(3)	(4)
Temp. work agency	-.216	-.159	-.050	-.051
	(.001)***	(.001)***	(.002)***	(.002)***
Firm size (ln)	.070	.066	.036	.035
	(.00006)***	(.00005)***	(.0002)***	(.0002)***
Lisbon	.116	.109	.027	.028
	(.0003)***	(.0003)***	(.0009)***	(.001)***
Foreign firm	.071	.070	.034	.032
	(.0005)***	(.0004)***	(.0008)***	(.0009)***
Age	.047	.030	.077	.065
	(.00007)***	(.00007)***	(.0002)***	(.0002)***
Age sq.	-.0004	-.0003	-.0005	-.0004
	(9.29e-07)***	(8.96e-07)***	(2.32e-06)***	(2.46e-06)***
Female	-.245	-.191		
	(.0002)***	(.0002)***		
Education				
4 years	.143	.074	-.002	-.005
	(.0008)***	(.0007)***	(.003)	(.003)*
6 years	.294	.154	-.002	-.005
	(.0008)***	(.0008)***	(.003)	(.003)*
9 years	.479	.241	.015	.008
	(.0008)***	(.0008)***	(.003)***	(.003)**
12 years	.648	.315	.045	.035
	(.0009)***	(.0009)***	(.003)***	(.004)***
16 years	1.259	.588	.202	.163
	(.001)***	(.001)***	(.004)***	(.004)***
Const.	4.768	6.036	4.256	4.683
	(.001)***	(.002)***	(.005)***	(.005)***
Occupation (8 dummies)		yes		yes
Skill (7 dummies)		yes		yes
Worker fixed effect			yes	yes
R^2	0.55	0.63	0.88	0.88
Obs.	10,265,663	9,460,387	10,265,663	9,460,387

Note: Adjusted R^2 reported for the fixed-effects regressions. Robust standard-errors in parentheses. All regressions control for year of observation. Source: Computations based on based on MTSS, 1995-2000, Portugal.

Table 4: Estimates of entry wages, controlling for previous TWA status.

	(1)	(2)
Post-TWA	-.030	-.008
	(.003)***	(.018)
Temp. work agency	-.090	-.042
	(.004)***	(.020)**
Firm size (log)	.040	.030
	(.0003)***	(.002)***
Lisbon	.085	.010
	(.001)***	(.009)
Foreign firm	.073	.059
	(.002)***	(.010)***
Age	.023	.088
	(.0004)***	(.008)***
Age sq.	-.0002	-.0005
	(5.58e-06)***	(.0001)***
Education		
4 years	.038	-.001
	(.007)***	(.113)
6 years	.096	-.017
	(.007)***	(.115)
9 years	.161	-.004
	(.007)***	(.116)
12 years	.243	-.012
	(.007)***	(.117)
16 years	.535	.132
	(.008)***	(.126)
Const.	6.464	4.362
	(.013)***	(.178)***
Worker fixed effect		yes
R^2	0.55	0.71
Obs.	345,747	345,747

Note: Adjusted R^2 reported for the fixed-effects regressions. Robust standard-errors in parentheses. The regressions control also for the year of the observation (5 dummy variables), occupation (8 dummy variables), and skill level (7 dummy variables). Source: Computations based on based on MTSS, 1995-2000, Portugal.