This PDF is a selection from a published volume from the National Bureau of Economic Research

Volume Title: Studies of Labor Market Intermediation

Volume Author/Editor: David H. Autor, editor

Volume Publisher: University of Chicago Press

Volume ISBN: 978-0-226-03288-7; 0-226-03288-4

Volume URL: http://www.nber.org/books/auto07-1

Conference Date: May 17-18, 2007

Publication Date: November 2009

Chapter Title: Temporary Help Services Employment in Portugal, 1995-2000

Chapter Author: René Böheim, Ana Rute Cardoso

Chapter URL: http://www.nber.org/chapters/c3598

Chapter pages in book: (309 - 334)

9

Temporary Help Services Employment in Portugal, 1995–2000

René Böheim and Ana Rute Cardoso

9.1 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, 56)

Employment in temporary help service (THS) firms has increased throughout Europe over the last decade. This development has prompted the European Commission (EC) to propose a directive to safeguard THS workers' working conditions. In 2002 it issued a proposal for a European Parliament and Council Directive on working conditions for THS 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 she or 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 THS firms

René Böheim is an associate professor of economics at the Johannes Kepler University, Linz, and a research fellow with the Austrian Institute of Economic Research and the IZA Bonn. Ana Rute Cardoso is a research scientist at the Institute for Economic Analysis, Spanish National Research Council (IAE-CSIC), an Affiliated Professor at the Barcelona Graduate School of Economics (Barcelona GSE), and Research Fellow at the Institute for the Study of Labor (IZA Bonn). This chapter was prepared for the NBER Conference on Labor Market Intermediation, May 17–18, 2007. We thank David Autor, Jeff Smith, participants at the NBER conference, and participants in a seminar held at IZA Bonn for most helpful comments. We are grateful to the Ministry of Employment, Statistics Department, Portugal, for access to the data. René Böheim acknowledges financial support from the Austrian National Bank, grant no. 11090.

face worse working conditions than comparable workers in the placement firm. Evidence from Houseman (2001) suggests that THS may be used to save on worker benefit costs, such as health insurance and pension contributions. These concerns extend to wage rates, as there seems to be evidence of lower wages for THS workers.

Concern about workers in THS has also focused on whether they remain in low-paying, dead-end jobs or if they find, should they so desire, employment in 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, THS could serve as a screening method (Autor 2001; Houseman 2001) at little cost for the firm; that is, without a commitment about a future employment contract. Since THS work typically matches a worker with several firms, it can be seen as a job-matching mechanism.

The discussion has thus concentrated on whether workers in THS employment earn lower wages and whether THS employment enables workers to start a better career. There are numerous studies for the United States that find that THS workers receive lower wages than other workers; for example, Segal and Sullivan (1997), who report an average wage difference of about 28 percent, which is reduced to about 3 percent when observable and time-invariant unobservable characteristics are considered. (See also, among others, Blank [1998] or Nollen [1996].)

Workers may accept lower wages in THS firms because the employment in these firms allows a subsequent job match with better pay or more stable careers. Autor and Houseman (2005), using random placement assignments, do not find that THS work is associated with stable careers in post-THS employment. For welfare recipients, however, Heinrich, Mueser, and Troske (2005) find that work in THS is associated with better outcomes than not working at all.

The evidence for European countries is mixed. For example, Forde and Slater (2005) report a wage penalty of about 11 percent for men and 6 percent for women in THS in contrast to comparable workers in the United Kingdom. Zijl, van den Berg, and Heyma (2004) find for the Netherlands that THS work is associated with subsequent stable employment spells. Similarly, Amuedo-Dorantes, Malo, and Muñoz-Bullón (2006), for Spain, Booth, Francesconi, and Frank (2002), for the United Kingdom, and Ichino, Mealli, and Nannicini (2006), for Italy, find that THS work is associated with subsequent stable employment. However, Kvasnicka (2005) finds for Germany that THS work does not improve the subsequent careers of such workers, and Antoni and Jahn (2006) find that THS workers in Germany are increasingly found in repeated spells of THS work.

We use linked employer-employee data, obtained from the Ministry of Employment in Portugal, to analyze wages of workers in THS. These administrative data cover the universe of Portuguese workers in the private sector

for the period 1995 to 2000. The panel dimension of these data allow us to control for worker and industry specific effects.

The purpose of the chapter is twofold. We analyze, first of all, if THS workers earn lower wages than comparable workers in other sectors, by estimating wage regressions. Because participation in THS work is not random, we control for workers' fixed effects in our estimations, taking advantage of the longitudinal nature of the data. We perform the analysis separately for men and women as well as for younger and older workers, since these groups tend to fare differently in the labor market. (We also perform the analyses on the pooled sample.) Secondly, we analyze workers' wages before and after spells of THS. On the one hand, we want to assess if THS work leads to lower wages in subsequent employment—that is, evidence of a stigma effect. On the other hand, we want to investigate if workers experienced a particular wage development before entering THS. For example, their wages could be deteriorating relative to similar workers, in which case the adverse labor market conditions would provide the motivation to search for a THS job.

Our empirical results suggest that THS workers earn about 1 percent less than similar workers in other firms, once their observable and unobservable attributes are controlled for. However, disaggregation of the sample by age and gender reveals interesting differences across groups of workers. Younger workers, both men and women, earn higher wages in THS firms than their peers in other firms. Prime-age workers, in particular men, earn a lower wage in THS firms than similar workers in other firms. Also interestingly, for young workers, THS is not associated with a stigma that slows their wage progression after they start to work in the THS sector. In contrast, for prime-age and older workers, in particular males, wage progression after entering THS is slower than for similar workers not engaged in THS. Before entering THS firms, prime-age workers, both men and women, see their wages deteriorate relative to their peers, suggesting that adverse labor market conditions might motivate them to search for a THS job. For young workers, we do not detect any pre-THS wage trend.

9.2 Background

9.2.1 The Association between THS Work and Wages

The distinguishing feature of work for a THS firm is the tripartite nature of the relationship and the commercial nature of the contract signed between the THS firm 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 THS workers earn lower wages than comparable workers, in particular in countries where labor legislation is not stringent or trade union coverage is low, there are also reasons, and evidence,

that point to the opposite direction. Temporary help service workers may earn a higher wage, which would compensate for the risk of a more variable income stream than comparable workers. It is also sometimes stressed that THS firms have difficulty recruiting workers and need to offer favorable conditions to attract them. Storrie (2002) reports that at the upper end of the pay scale, for instance in the health sector, THS workers seem to enjoy better pay and possibly better working conditions than regular workers. The wages in THS firms is thus an empirical issue that we will address in more detail in the following.

Some THS firms may choose to offer free general training instead of higher wages to attract more workers and to identify better-quality workers (Autor 2001). 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 THS firms may provide more training than legally required. Such training could result in higher wages in post-THS employment.

On the contrary, Storrie (2002) reports evidence of circumvention of employment standards for THS workers, especially in terms of pay and working time regulations, and also evidence of other, illegal abuse. The short employment spells, possibly combined with low investment in human capital, and fewer workers' rights due to lower coverage by trade unions, are typically factors that characterize poor career prospects.

9.2.2 Legal Setting in Portugal

The market for THS is tightly regulated in Portugal.[1] Permission to operate as a THS firm 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 of running human resources and supporting administrative staff), as well as a sound financial situation.[2] Temporary help service firms are allowed a wide range of activities, which include recruitment and selection of personnel, vocational orientation, training, consulting, and human resources management. The operation of the firm is regularly monitored by the Bureau of Labor Inspection and it must present records of workers hired out to using firms every six months.

The work contract is signed between the THS firm and the worker. The formal employer is thus the THS, 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 percent of the total turnover to training. (The

1. Decree-Law 358/89, Law 39/96, and Law 146/99.

2. 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.

THS firm 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 THS can be open ended or of limited duration. If open ended, the worker is entitled to pay, even in periods when she or 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 have to 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, or to bridge recruitment gaps, while the process to fill a vacancy is taking place.

The contract between the THS firm 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 its workers who perform similar tasks, and the amount paid to the THS firm. A THS worker is entitled to the wage set by collective bargaining for THS 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 THS workers, we would expect to see no, or a moderate, pay differential between THS and regular workers. Over 90 percent of the THS workers are covered by a collective bargaining contract, signed between trade unions and employer representatives.[3]

The regulations are monitored and enforced by the Bureau of Labor Inspection. However, situations of noncompliance with the law are frequently discussed in the press, where THS owners associations demand stricter controls by the Bureau, arguing that law-obeying firms are subject to unfair competition by firms that do not fulfill the law, especially the payment of taxes and Social Security contributions. Trade unions, on the other hand, claim that workers' rights are not always respected and also demand stricter monitoring. Finally, the Bureau of Labor Inspection claims that the firms in the sector are subject to close scrutiny and argues for higher legal sanctions to increase compliance.

Although the legalization and regulation of this type of work took place relatively early in comparison to other European countries, the use of THS is not as widespread in Portugal as in other European countries. In 1999, it comprised about 1 percent of total employment, below the European Union average of about 1.4 percent. 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, 23).

3. In Portugal, a contract signed between workers' and employers' representatives is often extended to all workers in a sector or firm, irrespective of their union membership status.

9.3 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 services in the private sector; 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, date of admission into the company, monthly earnings, and duration of work. We use data from 1995 to 2000, since identification of THS work was not possible for earlier years.

The Portuguese Classification of Industries reports, under code 74500, firms in "labor recruitment and provision of personnel."[4] This is the definition we use to identify temporary help service firms and their workers.[5] Given the relevance of the distinction between stocks and flows for this activity (with high worker turnover), it should be stressed that the data refer to the stock of workers at a reference week in October each year.[6] Wage earners aged sixteen to sixty-five years were selected for analysis. We consider only the worker's main job, defined as the job where the most hours were worked per month. 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 (details on the procedures followed to clean the panel can be found in Cardoso [2005]).

The administrative nature of the data and the legal requirement for the firm to post the data in a space public to its workers 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 them over time, as long as they work in the private sector. If they are missing from the database, the workers could be, among other situations, unemployed, inactive, employed in the public administration, or self-employed without dependent workers, and we cannot ascertain the employment status.

In the analyses that follow, we will keep the whole population of workers who ever had a THS job, while limiting the data on workers who never had a THS job to a 10 percent sample, so as to keep computations manageable. For each worker sampled, all the available observations on his or her work history were kept for analysis. We report results on the overall sample, as well as separately for women and men of sixteen to twenty-five years of age and for women and men of twenty-six to sixty-five years of age.

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

5. This definition has the disadvantage that we cannot distinguish between managers and clerical staff that operate the THS and the workers who are hired out to using firms.

6. Because of the timing of observations, we do not analyze the job tenure with THS firms because not all jobs of short duration are captured in the data.

Gross hourly wages were computed and were deflated using the Consumer Price Index (with the year 2000 as the base period). Wage outliers, that is, hourly wages of less than half the first percentile or above twenty times percentile 99, have been dropped from the analysis.

9.4 Descriptive Evidence on the Labor Force of THS Firms and Their Career Prospects

The number of firms and workers in the THS sector increased from 1995 to 2000, and we observe a rising share in overall employment, from 0.5 to 1 percent. (These figures are a lower bound on the overall number of THS workers, as short spells are underrepresented because of how the data are collected.) The number of firms, although increasing in absolute numbers, had a share of about 0.1 percent of all firms in the private sector. (A tabulation of the development over time is given in the appendix, table 9A.1.)

Table 9.1 provides the descriptive statistics of our estimating sample, by THS status. On average, THS workers had a wage lower than other workers, with a mean hourly wage difference of about 23 percent. We also see that the dispersion of wages is lower for THS workers, a finding also evident in figure 9.1, where we plot the two wage distributions, pooling the observations from the six years. The graph shows that the distribution of wages for THS workers is more concentrated, with a higher peak and a thinner upper tail.

We observe a similar percentage of women in THS firms as in other firms in the private sector (about 42 percent). Temporary help service workers are, on average, four years younger than workers in the rest of the private sector, who are, on average, thirty-six years old. Temporary help service workers are, on average, slightly better educated than other workers (about 50 percent of THS workers have six school years or less, compared to 61 percent in other sectors; nevertheless, there are fewer workers with a higher-education diploma in THS firms than in other firms; i.e., 4 versus 6 percent). There are also more low-skilled and administrative workers in THS than in other firms. We see that workers in THS have short tenures with their firms, with 68 percent of THS workers having 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 18 percent. The incidence of part time is higher in THS firms than in the rest of the economy (25 percent versus 9 percent).

Temporary help services firms are concentrated in the Lisbon region (78 percent, as opposed to 42 percent for the remaining sectors).[7]

For 2000 only, data on the type of contract are available, indicating that

7. 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 remained stable at about 33 percent (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 THS is least concentrated in Europe; only the United Kingdom and Germany have a lower market concentration.

Table 9.1 Descriptive statistics

	THS workers		Regular workers	
Variable	Mean	Standard deviation	Mean	Standard deviation
Hourly wage (log)	6.416	(0.390)	6.519	(0.563)
Hourly wage (PTE)	673.784	(458.229)	831.341	(829.515)
Female	0.416		0.421	
Lisbon	0.777		0.418	
Education				
Four years	0.304		0.378	
Six years	0.207		0.232	
Nine years	0.185		0.148	
Twelve years	0.253		0.161	
Sixteen years	0.040		0.061	
Age	31.514	(10.383)	35.879	(11.142)
Occupation				
Profes., scientists	0.009		0.031	
Middle manag.	0.044		0.097	
Administrative workers	0.257		0.159	
Service and sales workers	0.104		0.134	
Farmers	0.005		0.003	
Skilled workers and craftsmen	0.275		0.266	
Machine operators, assembly workers	0.100		0.132	
Unskilled workers	0.198		0.153	
Tenure				
$<$ 1 year	0.680		0.177	
$1 \leq$ tenure $<$ 2 years	0.125		0.115	
$2 \leq$ tenure $<$ 3 years	0.052		0.083	
Part-time	0.246		0.085	
Available for 2000 only:				
Fixed-term contract	0.736		0.145	
N	83,022		1,074,162	

74 percent of THS workers have a fixed-term contract, which compares to 15 percent of the workers in the rest of the private sector.

9.5 Lower Pay in THS Firms?

The comparison of mean wages points to a substantial and significant wage difference between THS and regular workers, despite the stringent legal requirements. In this section, we investigate in more detail if such wage differences are still evident once we control for the firm and worker characteristics.

Table 9.2 reports the estimated coefficients (and robust standard errors) of wage regressions where we estimate the hourly wages of workers in the private sector. We use several empirical specifications for men and women who are sixteen to twenty-five years of age and for men and women of

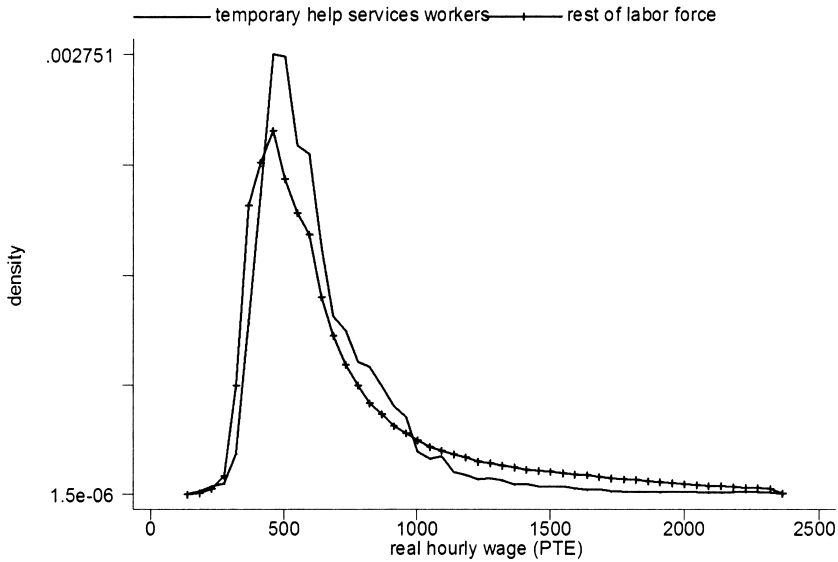

Fig. 9.1 Wage distribution for THS and other workers, 1995–2000

Source: Own computations based on Portugal (1995 to 2000).

Note: The graph plots the wage distribution of workers in the THS sector and in the rest of the economy, pooling observations from 1995 to 2000. Wages above the 99th percentile are not plotted. Wages are deflated to 2000 values using the Consumer Price Index.

ages twenty-six to sixty-five. (The full estimation results are provided in the appendix, where we also report estimation results for the complete sample.)

Specification 1 controls for location of the firm and age and education of the workers (and indicators for the year of observation). Specification 2 controls in addition for the workers' occupation, which is one of the following categories: senior managers, professionals or scientists: junior managers; administrative workers; service and sales workers; farmers; skilled workers and craftsmen; machine operators, assembly workers; and unskilled workers.

Because workers do not randomly choose to work for a THS firm, any observed wage difference between THS and other 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.[8] The estimated coefficients from these estimations are presented in columns (3) and (4) of table 9.2, where specification 3 (specification 4) has the same set of controls as specification 1 (specification 2).

8. 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 percent, 2 percent, 2 percent, and 1 percent, respectively, for workers initially observed with four, six, nine, and twelve years of education.

Table 9.2 Estimated wage differences for THS and regular workers

	OLS		Fixed-effects	
	Coefficient (Standard error) (1)	Coefficient (Standard error) (2)	Coefficient (Standard error) (3)	Coefficient (Standard error) (4)
Sixteen to twenty-five years of age				
Women	.077	.052	.050	.039
	(.003)***	(.003)***	(.005)***	(.006)***
Obs.	118,914	103,076	118,914	103,076
Men	.027	.021	.019	.013
	(.003)***	(.003)***	(.005)***	(.006)**
Obs.	134,774	112,916	134,774	112,916
Twenty-six to sixty-five years of age				
Women	–.135	–.118	–.006	–.010
	.003***	(.003)***	(.004)*	(.004)**
Obs.	367,492	346,779	367,492	346,779
Men	–.226	–.164	–.058	–.054
	(.003)***	(.003)***	(.004)***	(.004)***
Obs.	536,004	512,917	536,004	512,917

Note: The independent variable is (log) real hourly wages. Specifications 1 and 2 are based on pooled ordinary least squares (OLS) wage regressions and specifications 3 and 4 are fixed-effects panel wage regressions. All specifications control for location of the firm, age, and education of the workers, and the year of observation. Specifications 2 and 4 control in addition for the workers' occupation. The full set of estimation results are provided in the appendix, tables 9A.3 to 9A.6. Robust standard errors. Estimations based on Portugal (1995 to 2000).

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

The ordinary least squares (OLS) estimations show that younger women who work for a THS firm receive a higher wage than women who work for other firms. We estimate that they receive a wage that is about 5 to 7 percent greater than similar workers in other firms. See columns (1) and (2) in table 9.2. The results from the fixed-effects regressions indicate that younger women who start to work in THS firms have a higher wage than they would earn in the regular sector. This difference in wage development is estimated to be around 4 to 5 percent. See columns (3) and (4) in table 9.2.

For younger men—while they earn, on average, a wage that is some 2 percent greater in THS firms than in other firms—these differences are not as pronounced as for young women. Young men's wages are estimated to increase by about 1 to 2 percent if they start to work in a THS firm. All these estimated wage differences are statistically significant at an error level of 5 percent or less.

Prime-age women working in THS firms earn about 12 to 13 percent less than similar women in other firms. According to our fixed-effects estimates, their wages are estimated to decrease on starting to work with a THS firm.

Although the penalty for starting in a THS firm is statistically significant at conventional confidence levels, the point estimate is at about 1 percent and thus not overly important from an economic perspective.

For prime-age male workers, we obtain coefficients from the pooled OLS regression that indicate a remarkably lower average wage in THS than in the regular sector. The wage penalty is estimated to be between 16 and 23 percent. In addition, controlling for fixed characteristics, these workers experience a wage decrease of about 5 percent upon starting with the THS firm.

9.6 Wages Before and After Working in THS Firms

We proceed placing the spells of THS employment in the context of the workers' careers. The wages of those workers who chose to work for a THS firm could have been deteriorating relative to similar workers prior to entering a THS firm. This relative wage loss could have been their motivation to start a THS job. A second issue concerns the workers' careers once they start working for a THS firm and their wage progression thereafter. Two different hypotheses on the wage development on entering the sector may be formulated. Temporary help service firms typically place workers in several firms—this improves their position to finding a good job match, possibly leading to being formally hired by a firm that already hired them through the THS firm. As such, a worker would have already accumulated some firm-specific human capital, and we then expect the worker to have a comparable, if not faster, wage progression than other workers on leaving the THS firm. Alternatively, working for a THS might be interpreted as a signal of lower ability by employers and would result in fewer and/or worse job offers than other workers would receive. This kind of mechanism would lead to poorer employment prospects for former THS workers and their wages would be lower than those of otherwise similar workers.

In the vein of Segal and Sullivan (1998) and Jacobson, LaLonde, and Sullivan (1993), we construct a set of dummy variables to capture the number of years before or after the start of the THS spell. For each worker, the dummy variable D_t^k is 1 if the worker at time t is k years away from the start of the THS spell. Because our data cover six years, we have allowed k to range between –2 and 2, with a negative (positive) k indicating the time before (after) the start of a spell of THS employment. If the worker works for a THS firm at time t, the dummy variable D_t^0 is equivalent to a dummy variable on THS work, similar to the one used in the previous specifications.[9] We report results including controls for location, age, education, and worker-fixed effects, and the year of observation (with and without occupation included). For this part of the analysis, we dropped workers who

9. We have also used dummy variables for the post-THS wages that indicate the time since the end of the THS employment. However, since most THS spells are of short duration, the interpretation of our findings changes little. These results are available at request from the authors.

had more than one spell of THS, which led to an exclusion of 7 percent of workers who ever had a THS spell.

Table 9.3 reports the estimated coefficients for the indicator variables that control for employment episodes before and after the start of the THS spell. Focusing on the estimated coefficient on THS, the estimations confirm the previous results—that is, young workers earn a higher wage than in regular contracts. In contrast, older workers earn lower wages in THS firms than in other firms, with the difference being smaller for women than for men.

Before entering THS, we observe that there are no differences in terms of wages for young workers between those who started to work for a THS firm and those who did not. The motivation to enter THS seems to be different for younger than for older workers, because we estimate that older workers, both men and women, see their wages deteriorate relative to similar workers before starting to work in a THS firm, suggesting that adverse labor market conditions may motivate prime-age workers to search for a THS job.

After the start of the THS spell, we estimate that young female workers enjoy higher wages than their peers, at least for the two years we are able to investigate, a wage difference of some 2 to 4 percent. We do not find this pattern for young male THS workers. For them, post-THS wages are not significantly different from similar workers in other sectors, after accounting for worker-unobservable quality. Older female workers are estimated to have about 1 percent lower wages than women who did not work for a THS firm, but the difference is smaller than in the years before the THS spell, where it amounted to some 3 percent. Older male THS workers receive about 4 percent less than comparable workers before and after their THS spell.

9.7 Conclusion

Using unique, linked employer-employee data from Portugal that cover the entire private sector, we investigate whether workers in THS firms receive a lower wage than workers who work for other firms. Despite the extensive legal protection of THS workers, we observe a wage difference of about 23 percent for THS workers in the raw data. Once we control for standard human capital indicators, the differential is estimated to be 9 percent. 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 our estimations. Controlling for this type of factors, the wage penalty of THS workers is reduced to 1 to 2 percent for the overall labor force.

However, interesting differences emerge across groups of workers: young and older, males and females. For young workers, working for a THS firm results in wages that are higher than other sectors. The difference is particularly high for women who earn about 4 to 5 percent higher wages in THS than elsewhere; for young men the difference is about 1 percent. In contrast, for older workers THS work is associated with a wage penalty, which is larger for males than for females.

Table 9.3 **Estimated wage differences before and after start of THS work**

	Age: sixteen to twenty-five				Age: twenty-six to sixty-five			
	Women		Men		Women		Men	
	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
Two yrs before start THS spell	–.008	–.005	.001	.005	–.032	–.031	–.008	–.006
	(.011)	(.013)	(.010)	(.012)	(.008)***	(.008)***	(.007)	(.007)
One yr before start THS spell	–.017	–.013	–.013	–.010	–.037	–.029	–.038	–.037
	(.011)	(.013)	(.011)	(.012)	(.008)***	(.009)***	(.008)***	(.008)***
THS work	.059	.053	.028	.022	–.014	–.014	–.065	–.059
	(.008)***	(.009)***	(.008)***	(.009)**	(.005)***	(.005)***	(.005)***	(.005)***
One yr after start of THS spell	.034	.036	.023	.012	–.009	–.007	–.035	–.036
	(.009)***	(.010)***	(.009)***	(.010)	(.005)*	(.005)	(.005)***	(.006)***
Two yrs after start of THS spell	.015	.017	–.001	–.005	–.013	–.013	–.037	–.037
	(.010)	(.010)*	(.009)	(.010)	(.005)**	(.006)**	(.006)***	(.006)***
Occupation	—	yes	—	yes	—	yes	—	yes
Obs.	117,732	102,058	133,097	111,502	364,573	344,148	530,175	507,626
Adjusted R^2	.675	.683	.646	.655	.873	.876	.873	.874

Note: The independent variable is (log) real hourly wages. All specifications control for location of the firm, age, education, and worker-fixed effects, and the year of observation. The full set of estimation results are provided in the appendix, tables 9A.8 to 9A.11. Robust standard errors. Estimations based on Portugal (1995 to 2000).

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

The wage developments before starting to work for THS are clearly different for young and older workers, which may result in a different motivation to start working for a THS firm. Before entering a THS firm, prime-age workers see their wages deteriorate relative to similar workers, suggesting that adverse labor market conditions motivate them to search for a THS job. For younger workers, we cannot detect any pre-TWA wage trend.

The impact of THS employment on the subsequent career is different for young and older workers, too. For young females, wages are higher one and two years after starting to work for THS than for comparable women in other firms. For them, the training, networking, or other skills provided by THS firms lead to a faster wage growth than for similar workers elsewhere in the economy. For young males, the results do not differ significantly between those who worked for a THS firm and those who did not. For older workers, we identify once again a detrimental impact of THS work, since after the start of the THS spell, their wages remain significantly below those of similar workers not in THS, particularly for males.

The evidence collected lends support to attempts (namely by the European Commission) to safeguard the workers in THS firms and their subsequent career progression, in particular for prime-age and older workers. For young workers, the evidence suggests that working for a THS firm can be an entry gate and stepping stone in the labor market.

Appendix

Table 9A.1 **THS firms and workers in Portugal, 1995–2000**

	Firms	Workers
1995	148	7,637
	(0.10)	(0.46)
1996	158	9,415
	(0.10)	(0.57)
1997	184	13,072
	(0.11)	(0.74)
1998	203	15,634
	(0.11)	(0.86)
1999	223	17,179
	(0.11)	(0.89)
2000	243	20,085
	(0.11)	(1.00)

Note: Own calculations based on MTSS, 1995–2000, Portugal. Values in parentheses indicate percentage of all private sector.

Table 9A.2 **Wage regressions, all workers**

	Coefficient (Standard error) (1)	Coefficient (Standard error) (2)	Coefficient (Standard error) (3)	Coefficient (Standard error) (4)
THS work	–.122	–.097	–.012	–.016
	(.001)***	(.002)***	(.002)***	(.002)***
Lisbon	.164	.165	.039	.040
	(.0008)***	(.0008)***	(.002)***	(.002)***
Female	–.241	–.207		
	(.0008)***	(.0008)***		
Educ: four years	.115	.073	–.035	–.039
	(.002)***	(.002)***	(.010)***	(.010)***
Educ: six years	.281	.190	–.035	–.043
	(.003)***	(.003)***	(.010)***	(.011)***
Educ: nine years	.478	.313	–.019	–.031
	(.003)***	(.003)***	(.011)*	(.011)***
Educ: twelve years	.650	.398	.006	–.004
	(.003)***	(.003)***	(.011)	(.011)
Educ: sixteen years	1.272	.766	.156	.132
	(.003)***	(.004)***	(.013)***	(.014)***
Age	.050	.039	.080	.072
	(.0002)***	(.0002)***	(.0006)***	(.0006)***
Age sq.	–.0004	–.0003	–.0005	–.0005
	(2.97e-06)***	(2.96e-06)***	(7.30e-06)***	(7.70e-06)***
Const.	4.999	5.927	4.410	4.678
	(.005)***	(.007)***	(.015)***	(.017)***
Occupation (eight dummies)	—	yes	—	yes
Worker-fixed effects	—	—	yes	yes
Obs.	1,157,184	1,075,688	1,157,184	1,075,688
R^2	.457	.516	.858	.862

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

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

Table 9A.3 **Wage regressions, women sixteen to twenty-five**

	Coefficient (Standard error) (1)	Coefficient (Standard error) (2)	Coefficient (Standard error) (3)	Coefficient (Standard error) (4)
THS work	.077	.052	.050	.039
	(.003)***	(.003)***	(.005)***	(.006)***
Lisbon	.108	.109	.019	.022
	(.002)***	(.002)***	(.007)***	(.008)***
Educ: four years	–.00008	–.010	–.167	–.226
	(.016)	(.018)	(.110)	(.122)*
Educ: six years	.052	.036	–.153	–.220
	(.016)***	(.018)**	(.108)	(.120)*
Educ: nine years	.129	.095	–.146	–.217
	(.016)***	(.018)***	(.107)	(.120)*
Educ: twelve years	.263	.190	–.118	–.185
	(.016)***	(.018)***	(.108)	(.120)
Educ: sixteen years	.718	.508	.036	–.057
	(.017)***	(.019)***	(.109)	(.122)
Age	.053	.012	.141	.075
	(.007)***	(.008)	(.009)***	(.011)***
Age sq.	–.0006	.0002	–.002	–.0005
	(.0002)***	(.0002)	(.0002)***	(.0003)**
Const.	5.096	5.965	4.165	5.129
	(.074)***	(.089)***	(.150)***	(.179)***
Occupation (eight dummies)	—	yes	—	yes
Worker-fixed effects	—	—	yes	yes
Obs.	118,914	103,076	118,914	103,076
R^2	.34	.374	.673	.681

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

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

Table 9A.4 **Wage regressions, men sixteen to twenty-five**

	Coefficient (Standard error) (1)	Coefficient (Standard error) (2)	Coefficient (Standard error) (3)	Coefficient (Standard error) (4)
THS work	.027	.021	.019	.013
	(.003)***	(.003)***	(.005)***	(.006)**
Lisbon	.124	.123	.046	.050
	(.002)***	(.002)***	(.007)***	(.008)***
Educ: four years	.020	.015	–.009	–.018
	(.011)*	(.012)	(.034)	(.041)
Educ: six years	.069	.059	–.004	–.017
	(.010)***	(.011)***	(.034)	(.041)
Educ: nine years	.140	.120	.021	.013
	(.011)***	(.012)***	(.034)	(.042)
Educ: twelve years	.254	.199	.044	.038
	(.011)***	(.012)***	(.035)	(.043)
Educ: sixteen years	.728	.512	.190	.158
	(.013)***	(.015)***	(.042)***	(.049)***
Age	.131	.079	.220	.142
	(.007)***	(.008)***	(.009)***	(.012)***
Age sq.	–.002	–.001	–.003	–.002
	(.0002)***	(.0002)***	(.0002)***	(.0003)***
Const.	4.213	5.152	3.057	4.141
	(.074)***	(.090)***	(.108)***	(.145)***
Occupation (eight dummies)	—	yes	—	yes
Worker-fixed effects	—	—	yes	yes
Obs.	134,774	112,916	134,774	112,916
R^2	.28	.301	.642	.652

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

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

Table 9A.5 **Wage regression, women twenty-six to sixty-five**

	Coefficient (Standard error) (1)	Coefficient (Standard error) (2)	Coefficient (Standard error) (3)	Coefficient (Standard error) (4)
THS work	–.135	–.118	–.006	–.010
	(.003)***	(.003)***	(.004)*	(.004)**
Lisbon	.153	.149	.032	.031
	(.001)***	(.001)***	(.004)***	(.004)***
Educ: four years	.054	.025	–.021	–.021
	(.004)***	(.004)***	(.015)	(.015)
Educ: six years	.205	.125	–.022	–.025
	(.004)***	(.004)***	(.016)	(.016)
Educ: nine years	.454	.263	–.020	–.020
	(.004)***	(.004)***	(.016)	(.017)
Educ: twelve years	.638	.348	.003	.007
	(.004)***	(.005)***	(.017)	(.018)
Educ: sixteen years	1.250	.703	.100	.097
	(.005)***	(.006)***	(.022)***	(.023)***
Age	.049	.039	.058	.057
	(.0006)***	(.0006)***	(.001)***	(.001)***
Age sq.	–.0005	–.0004	–.0003	–.0003
	(7.44e-06)***	(7.15e-06)***	(.00002)***	(.00002)***
Const.	4.837	5.784	4.682	4.810
	(.013)***	(.015)***	(.029)***	(.031)***
Occupation (eight dummies)	—	yes	—	yes
Worker-fixed effects	—	—	yes	yes
Obs.	367,492	346,779	367,492	346,779
R^2	.451	.528	.872	.875

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

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

Table 9A.6 **Wage regression, men twenty-six to sixty-five**

	Coefficient (Standard error) (1)	Coefficient (Standard error) (2)	Coefficient (Standard error) (3)	Coefficient (Standard error) (4)
THS work	–.226	–.164	–.058	–.054
	(.003)***	(.003)***	(.004)***	(.004)***
Lisbon	.191	.188	.035	.040
	(.001)***	(.001)***	(.004)***	(.004)***
Educ: four years	.147	.087	–.039	–.043
	(.003)***	(.003)***	(.014)***	(.014)***
Educ: six years	.319	.206	–.044	–.048
	(.004)***	(.004)***	(.014)***	(.015)***
Educ: nine years	.561	.348	–.041	–.048
	(.004)***	(.004)***	(.015)***	(.016)***
Educ: twelve years	.759	.459	–.022	–.028
	(.004)***	(.004)***	(.016)	(.017)*
Educ: sixteen years	1.369	.849	.123	.105
	(.005)***	(.006)***	(.021)***	(.022)***
Age	.066	.054	.068	.065
	(.0005)***	(.0005)***	(.001)***	(.001)***
Age sq.	–.0006	–.0005	–.0004	–.0004
	(6.21e-06)***	(5.94e-06)***	(1.00e-05)***	(1.00e-05)***
Const.	4.591	5.546	4.635	4.783
	(.011)***	(.012)***	(.026)***	(.028)***
Occupation (eight dummies)	—	yes	—	yes
Worker fixed effects	—	—	yes	yes
Obs.	536,004	512,917	536,004	512,917
R^2	.422	.488	.870	.872

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

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

Table 9A.7 Wage regression with additional regressors, all workers

	Coefficient (Standard error) (1)	Coefficient (Standard error) (2)
Two yrs before start THS spell	–.018	–.014
	(.004)***	(.004)***
One yr before start THS spell	–.038	–.034
	(.004)***	(.004)***
Year of start of THS spell	–.017	–.019
	(.003)***	(.003)***
One yr after start of THS spell	–.008	–.010
	(.003)***	(.003)***
Two yrs after start of THS spell	–.016	–.016
	(.003)***	(.003)***
Lisbon	.039	.040
	(.002)***	(.003)***
Educ: four years	–.034	–.036
	(.010)***	(.010)***
Educ: six years	–.035	–.042
	(.010)***	(.011)***
Educ: nine years	–.018	–.029
	(.011)*	(.011)***
Educ: twelve years	.007	–.001
	(.011)	(.011)
Educ: sixteen years	.158	.135
	(.013)***	(.014)***
Age	.080	.073
	(.0006)***	(.0006)***
Age sq.	–.0005	–.0005
	(7.32e-06)***	(7.72e-06)***
Const.	4.407	4.669
	(.015)***	(.017)***
Occupation (eight dummies)	—	yes
Obs.	1,145,577	1,065,334
Adjusted R^2	.860	.864

Note: Robust standard errors in parentheses. All regressions control for year of observation and worker-fixed effects. Estimations based on MTSS, 1995–2000, Portugal.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

Table 9A.8 **Wage regression with additional regressors, women sixteen to twenty-five**

	Coefficient (Standard error) (1)	Coefficient (Standard error) (2)
Two yrs before start THS spell	–.008	–.005
	(.011)	(.013)
One yr before start THS spell	–.017	–.013
	(.011)	(.013)
Year of start of THS spell	.059	.053
	(.008)***	(.009)***
One yr after start of THS spell	.034	.036
	(.009)***	(.010)***
Two yrs after start of THS spell	.015	.017
	(.010)	(.010)*
Lisbon	.019	.022
	(.007)***	(.008)***
Educ: four years	–.169	–.227
	(.111)	(.123)*
Educ: six years	–.157	–.224
	(.108)	(.120)*
Educ: nine years	–.152	–.222
	(.108)	(.120)*
Educ: twelve years	–.124	–.189
	(.108)	(.121)
Educ: sixteen years	.030	–.059
	(.109)	(.122)
Age	.141	.074
	(.009)***	(.011)***
Age sq.	–.002	–.0005
	(.0002)***	(.0003)*
Const.	4.171	5.138
	(.150)***	(.179)***
Occupation (eight dummies)	—	yes
Obs.	117,732	102,058
Adjusted R^2	.675	.683

Note: Robust standard errors in parentheses. All regressions control for year of observation and worker-fixed effects. Estimations based on MTSS, 1995–2000, Portugal.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

Table 9A.9 **Wage regression with additional regressors, men sixteen to twenty-five**

	Coefficient (Standard error) (1)	Coefficient (Standard error) (2)
2 yrs before start THS spell	.001	.005
	(.010)	(.012)
One yr before start THS spell	–.013	–.010
	(.011)	(.012)
Year of start of THS spell	.028	.022
	(.008)***	(.009)**
One yr after start of THS spell	.023	.012
	(.009)***	(.010)
Two yrs after start of THS spell	–.001	–.005
	(.009)	(.010)
Lisbon	.047	.050
	(.007)***	(.008)***
Educ: four years	–.009	–.018
	(.034)	(.042)
Educ: six years	–.006	–.019
	(.034)	(.042)
Educ: nine years	.019	.013
	(.035)	(.042)
Educ: twelve years	.043	.038
	(.036)	(.043)
Educ: sixteen years	.189	.160
	(.043)***	(.050)***
Age	.219	.141
	(.010)***	(.012)***
Age sq.	–.003	–.002
	(.0002)***	(.0003)***
Const.	3.069	4.151
	(.109)***	(.146)***
Occupation (eight dummies)	—	yes
Obs.	133,097	111,502
Adjusted R^2	.646	.655

Note: Robust standard errors in parentheses. All regressions control for year of observation and worker-fixed effects. Estimations based on MTSS, 1995–2000, Portugal.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

Table 9A.10 **Wage regression with additional regressors, women twenty-six to sixty-five**

	Coefficient (Standard error) (1)	Coefficient (Standard error) (2)
Two yrs before start THS spell	–.032	–.031
	(.008)***	(.008)***
One yr before start THS spell	–.037	–.029
	(.008)***	(.009)***
Year of start of THS spell	–.014	–.014
	(.005)***	(.005)***
One yr after start of THS spell	–.009	–.007
	(.005)*	(.005)
Two yrs after start of THS spell	–.013	–.013
	(.005)**	(.006)**
Lisbon	.031	.029
	(.004)***	(.004)***
Educ: four years	–.020	–.021
	(.015)	(.015)
Educ: six years	–.022	–.025
	(.016)	(.016)
Educ: nine years	–.022	–.022
	(.016)	(.017)
Educ: twelve years	.001	.005
	(.017)	(.018)
Educ: sixteen years	.098	.094
	(.022)***	(.023)***
Age	.058	.057
	(.001)***	(.001)***
Age sq.	–.0003	–.0003
	(.00002)***	(.00002)***
Const.	4.695	4.815
	(.029)***	(.031)***
Occupation (eight dummies)	—	yes
Obs.	364573	344148
Adjusted R^2	.873	.876

Note: Robust standard errors in parentheses. All regressions control for year of observation and worker-fixed effects. Estimations based on MTSS, 1995–2000, Portugal.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

Table 9A.11 Wage regression with additional regressors, men twenty-six to sixty-five

	Coefficient (Standard error) (1)	Coefficient (Standard error) (2)
Two yrs before start THS spell	–.008	–.006
	(.007)	(.007)
One yr before start THS spell	–.038	–.037
	(.008)***	(.008)***
Year of start of THS spell	–.065	–.059
	(.005)***	(.005)***
One yr after start of THS spell	–.035	–.036
	(.005)***	(.006)***
Two yrs after start of THS spell	–.037	–.037
	(.006)***	(.006)***
Lisbon	.035	.040
	(.004)***	(.004)***
Educ: four years	–.041	–.042
	(.014)***	(.014)***
Educ: six years	–.046	–.047
	(.014)***	(.015)***
Educ: nine years	–.040	–.045
	(.015)***	(.016)***
Educ: twelve years	–.021	–.025
	(.016)	(.017)
Educ: sixteen years	.126	.110
	(.022)***	(.022)***
Age	.068	.066
	(.001)***	(.001)***
Age sq.	–.0004	–.0004
	(1.00e-05)***	(1.00e-05)***
Const.	4.629	4.772
	(.026)***	(.028)***
Occupation (eight dummies)	—	yes
Obs.	530,175	507,626
Adjusted R^2	.873	.874

Note: Robust standard errors in parentheses. All regressions control for year of observation and worker fixed-effects. Estimations based on MTSS, 1995–2000, Portugal.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

References

Amuedo-Dorantes, C., M. Malo, and F. Muñoz-Bullón. 2006. The role of temporary help agencies in facilitating temp-to-perm transitions. IZA Discussion Papers no. 2177. Bonn, IZA. Available at: http://ftp.iza.org/dp2177.pdf.

Antoni, M., and E. J. Jahn. 2006. Do changes in regulation affect employment duration in temporary work agencies. IZA Discussion Papers no. 2343. Bonn, IZA. http://ftp.iza.org/dp2343.pdf.

Autor, D. H. 2001. Why do temporary help firms provide free general skills training? *Quarterly Journal of Economics* 116 (4): 1409–48.

Autor, D. H., and S. N. Houseman. 2005. Do temporary help jobs improve labor market outcomes for low-skilled workers? Evidence from random assignments. Staff Working Paper no. 05-124. Kalamazoo, MI: W. E. Upjohn Institute for Employment Research.

Blank, R. M. 1998. Contingent work in a changing labor market. In *Generating jobs: How to increase demand for less-skilled workers,* ed. R. B. Freeman and P. Gottschalk, 258–94. New York: Russell Sage Foundation.

Booth, A., M. Francesconi, and J. Frank. 2002. Temporary jobs: Stepping stones or dead ends. *The Economic Journal* 112:F189–F213.

Cardoso, A. R. 2005. Big fish in small pond, or small fish in big pond? An analysis of job mobility. IZA Discussion Paper 1900. Bonn, Germany: Institute for the Study of Labor. Available at: http://ftp.iza.org/dp1900.pdf.

European Commission. 2002. Proposal for a directive of the European Parliament and the Council on working conditions for temporary workers. COM/2002/0149 final–COD 2002/0072.

European Parliament and Council Directive (EIRO). 2002. Commission proposes directive on temporary agency workers. European industrial relations observatory. Available at: http://www.eiro.eurofound.eu.int/2002/04/feature/eu0204205f.html.

Forde, C., and G. Slater. 2005. Agency working in Britain: Character, consequences and regulation, *British Journal of Industrial Relations* 43:249–71.

Heinrich, C. J., P. R. Mueser, and K. R. Troske. 2005. Welfare to temporary work: Implications for labor market outcomes. *Review of Economics and Statistics* 87 (1): 154–73.

Houseman, S. N. 2001. Why employers use flexible staffing arrangements: Evidence from an establishment survey. *Industrial and Labor Relations Review* 55 (1): 149–70.

Ichino, A., F. Mealli, and T. Nannicini. 2006. From temporary help jobs to permanent employment: What can we learn from matching estimators and their sensitivity? IZA Discussion Paper no. 2149. Bonn, Germany: IZA. Available at: http://ftp.iza.org/dp2149.pdf.

Jacobson, L. S., R. J. LaLonde, and D. G. Sullivan. 1993. Earnings losses of displaced workers. *American Economic Review* 83 (4): 685–709.

Kvasnicka, M. 2005. Does temporary agency work provide a stepping stone to regular employment? Discussion Papers 2005-031. Collaborative Research Center 649. Berlin: Humboldt University.

Nollen, S. D. 1996. Negative aspects of temporary employment. *Journal of Labor Research* 17 (4): 567–81.

Portugal. 1995 to 2000. Quadros de Pessoal, Ministério do Trabalho e da Segurança Social. Data on magnetic media.

Segal, L. M., and D. G. Sullivan. 1997. The growth of temporary services work. *Journal of Economic Perspectives* 11 (2): 117–36.

———. 1998. Wage differentials for temporary service work: Evidence from admin-

istrative data, Working Paper WP-98-23. Chicago: Federal Reserve Bank of Chicago.
Storrie, D. 2002. Temporary agency work in the European Union. Technical report, Office for Official Publications of the European Communities. Luxembourg.
Zijl, M., G. J. van den Berg, and A. Heyma. 2004. Stepping stones for the unemployed: The effect of temporary jobs on the duration until regular work. IZA Discussion Paper no. 1241. Bonn, Germany: IZA. Available at: http://ftp.iza.org/dp1241.pdf.