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Working Paper

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IZA Discussion Papers, No. 6504

Provided in Cooperation with:
IZA – Institute of Labor Economics

Suggested Citation: Anagnostopoulos, Achilleas; Siebert, W. Stanley (2012) : The impact of Greek labour market regulation on temporary and family employment: Evidence from a new survey, IZA Discussion Papers, No. 6504, Institute for the Study of Labor (IZA), Bonn, https://nbn-resolving.de/urn:nbn:de:101:1-201208096157

This Version is available at:
https://hdl.handle.net/10419/58538

DISCUSSION PAPER SERIES

IZA DP No. 6504

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IZA Discussion Paper No. 6504
April 2012

ABSTRACT

The Impact of Greek Labour Market Regulation on Temporary and Family Employment: Evidence from a New Survey*

This paper uses an original dataset for 206 workplaces in Thessaly (Greece), to study consequences of Greece's employment protection law (EPL) and national wage minimum for temporary employment. We find higher temporary employment rates especially among a "grey" market group of workplaces that pay low wages and avoid the national wage minimum. A similar factor boosts family employment. We also find that EPL "matters", in particular, managers who prefer temporary contracts because temps are less protected definitely employ more temps. We discuss whether temporary and family work is a form of escape from regulation for less prosperous firms.

JEL Classification: J38, J41, J81

Keywords: temporary work, Greece, employment protection, national wage agreements

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* We are grateful to the European Social Fund and Greek Ministry of Education for supporting this project under the Archimedes framework. We are also grateful for helpful comments from John Addison, Rebekka Christopoulou, Vassilis Monastiriotis, Mary O'Mahony, and Konstantinos Tzioumis, but remain entirely responsible for the analysis and interpretations presented. The TERS data and questionnaire are downloadable at http://teilar.gr/dbData/ErErgo/TERS_FFE.rar

1. Introduction

The role of labour regulation in protecting insiders at the expense of outsiders is an important topic for economists. Greece provides a good case of heavy regulation with high wage and working conditions floors. As an indicator of how firms react to legal constraints, we focus on temporary worker hiring rates, which might represent an "escape route" for the poorer firms. To cast light on these issues we bring forward an original survey of employment relations in the Greek province of Thessaly in 2006-7, the Thessaly Employment Relations Survey (TERS). This survey was based on the UK's Workplace Employment Relations Survey (WERS), with additions to address specific issues of Greek labour regulation.

The years of the survey 2006-7 were years of comparative prosperity, yet the Greek labour market was performing badly even then, which gives urgency to the search for causes. A comparative picture for unemployment among the OECD group in 2006 is given in Figure 1. We show measures for two important outsider groups, the long-term unemployed, and youth unemployed (youth aged 20-24). The countries are arranged in order of the proportion long-term unemployed in total unemployment. This proportion varies from a high of 70% in the Czech Republic, down to around zero in Korea. As can be seen Greece is fourth worst, comparable with Germany which was exceptional due to reunification problems. As regards youth unemployment (black bars), Greece is again one of the worst, third behind Poland and the Czech Republic.

The central empirical contribution of our paper will be an estimation of the determinants of temporary work and family work among the firms in Thessaly, a central province in Greece. Temporary and family work are important avenues of labour flexibility for Greek businesses. In concentrating on temporary work in Greece, we are following in the footsteps of of Voudouris (2004) who studied temporary and subcontracting work in 75 large mainly manufacturing companies and Mihail (2003) who studied 30 large organisations, including the public sector. Our focus will be on the legal constraints that businesses face, particularly national wage agreements and employment protection legislation (EPL), and we hypothesise that temporary or family work is resorted to when these regulatory constraints bite. In other words, "poor" firms, which cannot afford the national wage rates or the EPL standards, attempt to escape these standards by employing temps, or alternatively, family workers. This hypothesis can be seen as a variation of Almeida and Susanli (2011) that EPL causes firms to choose a smaller size. The strong point of our empirical research is that it includes a representative sample of micro-enterprises as well as small and medium enterprises,

The plan of the paper is as follows. In the next section we will discuss theoretical determinants of temporary and family worker hiring. Then we outline the labour regulation framework in Greece. In section 4, we give details of the TERS Survey. Then in sections 5 and 6 we present the results.

2. Theoretical considerations

Our hypothesis is that temporary and family work is resorted to when regulatory constraints concerning wage and working conditions floors bite. The standard model is outlined by Kahn (2007 and 2010). In this model all entry level jobs begin with the same labour productivity, and after a period the firm decides either to turn the job into a permanent one, or to dismiss the worker and replace him/her with another

temp. The firm's optimal policy here is to permit only those workers exceeding a productivity hurdle y* to become permanent.

The model predicts that higher permanent worker EPL firing costs raise the productivity hurdle y*, reducing the chance that jobs will become permanent which is plausible. International evidence (Kahn 2007; Booth, Dolado and Frank 2002) generally bear out this prediction. Admittedly, business recession also seems to increase temp employment (Kahn 2010), presumably because the option of easy dismissal of a temp worker becomes more valuable in recession. Furthermore, laws "protecting" temp workers, for example, by restricting the circumstance in which temps are employed should have an opposite effect, by blocking the temp worker "escape route" (though as Booth, Dolado and Frank (2002) note, these laws are paradoxically related to increases in temp employment, perhaps because of contradictory aims). At any rate, given aggregate business conditions - as our focus on cross-sectional comparisons between firms will permit - standard theory predicts that stricter (regular) worker EPL makes temp employment more likely.

A further factor which needs to be taken into account is wage flexibility (Lazear 1990; Addison and Teixeira 2003 review) which in principle would allow the parties to contract around strict EPL by lowering wages. Wage floors can prevent such wage adjustment from occurring and so promote temp employment given EPL. Wage floors are pushed upwards by extended collective agreements, strong unions, higher welfare payment replacement ratios, and also higher taxes (which raise replacement ratios). The effect should be greatest for unskilled workers whose wages are closest to the wage floor and so least able to flex downwards. Indeed, research (Bertola, Blau and Kahn, 2007) has shown that union wage compression is linked with less employment of unskilled workers at the bottom of the wage distribution. Such "marginalisation" should also mean that unskilled workers are pushed into temporary rather than permanent work. In sum, wage inflexibility and compression lead us to expect temp work to be particularly an option for the marginal unskilled worker group, given EPL.

In the TERS context, our data refer to firms rather than individuals, so we need to look for marginal firms rather than marginal workers to assess temp worker responses. In empirical terms, the marginal firm it likely to be one that is performing badly, for example, paying low wages, or making redundancies. Such firms will be less able to afford to pay the collectively agreed wage than the prosperous firms, and hence are more likely to employ workers on a temporary basis. Basically, our hypothesis is based on the idea that if a firm feels constrained by EPL, or by national wage agreements, it is more likely to adopt flexible forms of employment which provide an escape route.

3. The framework for labour regulation in Greece

The main floor under wages in Greece is provided by extended collective agreements. Greece has had this type of system since the dictator Metaxas in the 1930s subsidised and subordinated the trade unions (see Kritsantonis 1998:514; on Greece's "neo-corporatism" see Sotiropoulos, 2004:273). The two main union federations (Ioannou 2005) are still funded by the state. There is an annual National General Collective Agreement (NGCA), which is meant to set a national minimum wage for private sector employees (Koutsogeorgopoulou, 1994), and this agreement can be supplemented by sectoral agreements.

Coverage of collective agreements is estimated at 65% by the European Industrial Relations Observatory (see also Table 2 below), and centralisation is 0.39 on the Visser (2009) index. These figures are somewhat higher than the EU average (EIRO, 2007), but union density (Matsagannis, 2007) in most of the private sector is low, and indeed is negligible in the firms in the TERS sample. Despite attempts in the 1980s and particularly with Law 1876 of 1990 to stimulate workplace union representation and company agreements (Kritsantonis, 1998:520), the centralised wage setting system has continued.

As noted, centralised wage-setting is important because the less prosperous firms may worry about whether they can afford permanent workers at these wage rates. It is possible that high wages – suitable perhaps for Athens, but too high for provincial labour markets – cause businesses not only to resort to temp employment, but also to remain small and family-based. Therefore, one aim of the TERS is to ascertain to whether the firm is close to the national and/or sectoral collective agreement floor. Hence, in addition to objective information on pay rates, the TERS also surveys whether the business pays wages according to the national collective agreement.

As regards floors under working conditions, these are many (see Demekas and Kontolemis 1997, Kufidu and Mihail 1999, and Mihail 2003), including rules for compensation for individual and collective dismissals (EPL), for licensing overtime and shift-work, and for approving temporary and part-time contracts. In fact, temporary contracts are only permitted when there are "objective" reasons such as seasonal work, and temporary work agencies are effectively illegal[1]. Thus, the temporary worker escape route is not meant to be an easy option in Greece. Moreover, a detailed official annual return is required by the labour inspectorate, covering numbers employed, hours, wages and permanent-temporary contract status. In addition, any substantive change, including any new hires or workforce reductions, must be notified to the Public Employment Service within 8 days, these details then being passed to the Labour Inspectorate within 15 days.

The Labour Inspectorate is an important institution with a long history, being set up initially (Avdela 1997), by the Venizelos government in 1910. Admittedly there are few inspectors, only about 400 in 2008 (Labour Inspectorate 2008). However, they retain considerable power (EIRO 2001)[2], not least because of the stringent reporting requirements. Obviously, it is a criminal offence for firms to allow their information to be incorrect. That these reporting duties are taken seriously is indicated by the Annual Reports of the Inspectorate. Thus, in 2008 (Labour Inspectorate 2008), about 30,000 inspections were conducted, €10m of fines levied, and about 800,000 staff lists in respect of 2.4m staff were received. The 2.4m figure probably accounts for the large majority of relevant Greek employees – remembering the high number of single-person firms, to which the provisions do not

[1] The OECD's (1999: pp 62, 66) survey of temporary work protection gives Greece a high score of 4.8, on a 0-6 scale, while the UK for example is rated only at 0.3.

[2] In the OECD's (1999: pp 55 and 66) survey of strictness of employment protection for regular employment, Greece scores 2 on a 0-3 scale for "regular procedural inconveniences", which is higher than Italy, for example (1.5) or the UK (1.0). Unfair dismissal compensation at 20 years tenure in Greece is 16 months pay, lower than Italy's 33 months, but much higher than the UK's 8 months. Greece's overall score for protection of regular employment is 2.4, similar to Italy's 2.8, and much higher than the UK's 0.8.

apply. In comparative terms, according to the World Bank's (2010) Doing Business Report, Greece ranks as low as 147th out of 183 countries on the employment index of rigidity, with a similar low level in the executive opinion surveys collected in the World Economic Forum (WEF, 2010) report. The TERS therefore contains several questions probing effects of the Labour Inspectors on employment decisions.

4. The Survey

The TERS is based on a representative sample of 206 workplaces interviewed in 2006-7. Public sector workplaces are excluded, as is agriculture. The Survey includes very small workplaces, down to those employing only one worker. The sampling frame was the register of businesses maintained by the Thessaly Chamber of Commerce and Industry. 293 workplaces were visited, and 206 full questionnaires achieved based on face-to-face interviews with the manager/owner/accountant. Since workplace size was not fully under our control in the sampling process due to lack of prior information on the size of some workplaces, we then constructed weights. Our weighting objective was to replicate Thessaly's population distribution of workplace sizes in the Employment Observatory Research-Informatics (PAEP 2003) survey.

Details of the sample by workplace size are given in Table 1 (geographic information and industry composition is given in the Appendix). The distribution of workplaces according to the population is given in the first column, and the sample achieved in the second column. As the first column shows, the large majority of private sector workplaces in Thessaly's population of firms (and in Greece generally) are very small, 97% being under 10 employees in size. Indeed, in the whole of Greece, only 0.3% of private workplaces employ more than 50 workers[3]. Our oversampling of the larger workplaces is natural in this type of survey (for example, the WERS), and is necessary if an adequate picture is to be achieved of the larger workplaces, but is counteracted via our weights.

A further aspect of Table 1 is the glimpse it provides of another important Greek institution, the family firm. In Greece, when referring to family businesses most are SME's. The family firm is treated leniently by the Social Security authorities – as are small firms generally (since there is a backlog of tax audits, the government permits small firms to pay lower tax in order to speed the process – OECD, 2001, 33). As can be seen, the employing of family members is common in all workplaces, only falling off in the very largest, 100+, category.

Tables 2 and 3 focus on the wage floor system. Table 2 shows that national/sectoral wage agreements are important for Thessaly workplaces and manager-set or individual wage agreements are correspondingly less important. As can be seen from the top row, the managers claim that 55% of workers in small workplaces are covered by the national general wage agreement. Individual and enterprise agreements account for most of the remainder with sectoral agreements unimportant. For larger workplaces, sectoral agreements are more important (21%) as might be expected. The last row gives an alternative workplace-based view: which shows that collective agreements cover the majority of workers in most workplaces.

[3] UK figures are much higher (BIS, 2010): of the 1.2m enterprises with employees in 2009, about 3% employed more than 50.

Nevertheless, while most managers claim that worker pay is determined by the national collective agreements, pay levels in many cases appear to be too low. As can be seen, from Table 3, the Survey reveals that 64% of workers in small workplaces are paid the national minimum (or more likely less), and a smaller though still substantial proportion, 36%, are paid the minimum in larger workplaces[4]. The whole pay distribution in fact is close to €11,000, with 89% of workers in small firms earning less than €13,500. Thus, the minimum wage in Greece seems very high, and it can only be possible for this system to continue because it is not in fact paid, at least in provincial labour markets such as Thessaly. This burden could act as an incentive for less prosperous employers to avoid the law, which is easier to do if the worker is a temp or family worker, since these workers are less likely to complain.

Turning next to what the Survey shows about working conditions floors, Table 4 introduces the legal pressures to which managers are subject. We see that a high percentage of managers seek professional advice on employee relations, particularly from external lawyers and accountants. Only 21% of small workplaces have not sought advice over the past 2 years, compared to 49% of their WERS counterparts (over the past year, admittedly shorter). Also, we see that small enterprises are less likely to approach the labour inspector. Only 20% do, perhaps aiming to limit any "collaboration" with the Inspectorate which is the most feared body since it can apply a variety of penalties.

Turning to Survey questions on the Labour Inspectorate, Table 5 suggests that the Labour Inspectorate is influential – despite its small size as noted already. As can be seen, a high percentage of workplaces, particularly those employing 11 or more consult the Labour Inspectorate when making workforce reductions. Also, many (45 to 52%) see the hiring and firing laws monitored by the Inspectorate as negative for recruitment, and only a minority (33 to 39%) find it easy to gain permission to employ temps. In addition, a small proportion of managers, 10%, believe that temporary contracts are to be preferred because temps are easier to fire. While this proportion is small, we will see below that the belief is important empirically. As might be expected, family workplaces (not shown) tend to be less affected by the Labour Inspectorate, though 50% even of these workplaces see the hiring and firing laws as problematic. We now turn to multivariate analysis based on these questions.

5. Methods

Basic measures. For temporary work in the i-th workplace, $temp_i$, our measure is the percentage of the workplace's workforce covered by fixed-term and seasonal work contracts, plus trainees and subsidised workers. It is thus a broad definition. .For family work in the i-th workplace, $family_i$, our measure is the percentage of family workers employed. A problem is that many firms do not employ temps or family workers at all. To circumvent this censoring problem, the estimation is carried out by means of a Tobit procedure (Cameron and Trivedi 2009 review; see Batt 2002 for an application). The tobit model can be summarised as follows:

$$temp^*_i = \boldsymbol{\beta}'\mathbf{legal_i} + \boldsymbol{\gamma}'\mathbf{controls_i} + \varepsilon_i$$

and, $temp_i = temp^*_i$ if $temp^*_i > 0$, or $temp_i = 0$ if $temp^*_i <= 0$,

[4] These figures are higher than official estimates (Koutsogeorgopolou 1994, p88) of 15-20%, in part because our €11,000 includes 16% for employee social security contributions.

where $temp_i$ is observed, while $temp^*_i$ is "latent", and ε_i is an iid N(0, σ^2) error term. $\mathbf{legal_i}$ is the vector of legal variables to be described, with a vector of $\mathbf{controls_i}$..The model is estimated by maximum likelihood which is inconsistent if the normality assumption for the error is not in fact correct, and we use a test proposed by Vincent (2010) to check the assumption. A similar equation is estimated with $family_i$.as the dependent variable. Means and correlations of the main variables are given in Table 6 which we now discuss.

Our legal variables under the heading of wage floors are, first, a dummy for whether the firm pays a majority below the gross minimum wage of €11,000 as set by the national wage agreement. The survey question underlying this variable has already been discussed in connection with Table 3. It is shown in row 4) in Table 6. This variable indicates generally low wages which characterise a "poor" firm. We therefore expect it to be positively linked to temp and family worker employment since such marginal firms are always likely to be at risk of changes in circumstance such as declines in product demand, or increases in legal requirements.

An alternative, second, variable is a dummy for whether a business claims to observe the national wage agreement, as already discussed in Table 2. Our measure is a dummy based on whether a majority of workers are paid according to the national agreement. This variable is 5) in Table 6, and can be seen to work in the opposite direction to the minimum wage variable (the correlation between the two is negative, -0.048). An explanation for this converse movement is that only the more prosperous firms are able truly to observe the collective agreement. As can be seen from the simple correlations, this variable links well with making hires (0.288), and size (0.128), both of which could mark prosperity..

We also combine these wage variables into a third "grey" variable which flags up workplaces with both pay some workers at or below the minimum, and do not observe the national wage agreement for most workers. These businesses are in a grey legal position, since the only lawful way to avoid the national agreement is by paying more, yet they are paying some of their workers less. This variable is given in row 3) which shows that 29% of workplaces fall into this most marginal category. As can be seen, this grey category correlates well with employing temps (0.188), even better with employing family workers (who are more or less outside the law, 0.295), and is composed of declining businesses as shown by the negative correlation with hires in the past 2 years (-0.211). These firms also tend to be small as expected (-0.078 correlation with employment).

We have three legal variables under the heading of working conditions floors. First, we construct a variable for whether the management has taken employment relations advice from either an accountant or a lawyer, as discussed already in connection with Table 4. This variable is given in row 6). We predict a positive link with temporary employment here, on the argument that taking legal advice is a necessary prerequisite for clearing the way for drawing up and/or renewing temp contracts. (This influence should presumably be less strong for employment of family workers which come outside the power of the Labour Inspectorate.)

A second legal variable relates to whether the manager finds the Labour Inspectorate easily gives permission to employ temps, an aspect discussed already

in connection with Table 5. This variable is shown in row 7), and should enter positively in the equation for temps. A third variable is simply whether the manager considers temps to be preferred because they are easier to fire (see Table 5). This variable should directly pick up whether temps are being hired to provide the flexibility which EPL denies – see row 8). We include all these variables in the family worker equation as well, even though the Labour Inspectorate has no direct interest in whether a business uses family workers. Our reasoning here is that a business which feels constrained by the Labour Inspectorate might nevertheless feel it is safer to employ family workers.

The Controls. Turning to the controls, here we follow mainly Voudrouris (2004), who builds on the classic Abraham and Taylor (1996) specification. In the first place, we require controls for variability of demand which obviously increases the use of temps. This aspect relates to the "buffering" role of temps (and perhaps family workers). For example, retailing and hotels/restaurants face large changes both annually and weekly which require a buffer. Hence we include a set of broad industry dummies. Hires and redundancies over the period (row 9 only shows hires but we also include redundancies) might also indicate demand variability – or alternatively, firm prosperity (see below). Similar controls (not shown in Table 6) are dummies for whether the firm has increased part-time or non-routine sub-contract work over the past 5 years.

We also look for controls for the specific training requirements of jobs performed in the workplace. The payoff to specific training of temps (and perhaps family workers) is low, so high training requirements should mean fewer such workers. Training requirements can be picked up by variables for the use of part-timers, and young and old workers (included, but not shown in Table 6), all of whom are likely to have less training and so indicate a business for whom temps may be more suitable. On the other hand, these groups, particularly part-timers, are to some extent substitutes for temps and family workers, which could give rise to a negative link with temps – we will see. Low paid workers are also likely to have less training, which gives an additional reason for the majority low-paid dummy linking positively with temps.

Furthermore, controls for difficulties monitoring the job, for "know-how", and for complex interactions with other people doing the work might be needed, since these too (Voudouris 2004) suggest processes for which temps might be unsuitable. To some extent these considerations conflict with the training variable for old workers – while older workers are not likely to be trained, many obviously have know-how. Hence the old worker variable could indicate task/monitoring complexity and be negatively associated with the demand for temps. However, low-paid workers should also have less complex and easy-to-monitor tasks, reinforcing the positive link between this variable and temp demand.

A further variable is the manager's assessment of workers' commitment at the workplace (see row 10) which could link to the demand for temps in two ways. First, a committed workforce is likely to signify an environment with more complex tasks (needing worker commitment) which will be less suited to temp workers. Indeed, a strong negative correlation (-0.228) can be seen between this variable and the percent of temps. Second, superior managers may themselves be able to engender commitment. Superior management will in turn mean greater firm

prosperity which then links to less temp employment via our basic hypothesis that prosperous firms have less need to use temp or family workers as escape routes.

Finally, we control for firm size (row 11) on the argument that larger firms may face a greater variety of problems, and thus may need more solutions, of which temporary workers could be one. For family workers, large firms must necessarily employ a smaller proportion, since families are of a limited size. Hence we would expect large firms automatically to employ a smaller family worker proportion.

6. Results

We now present the regression results, starting with temporary work in Table 7, then moving on to family work in Table 8. As regards weights, Cameron and Trivedi (2010, p113) advise that so long as the model has sufficient controls, and in particular includes determinants of the sampling frame, the most efficient estimator does not use weights. The TERS over-samples larger workplaces, as discussed, and all the regressions control for workplace size, so it is reasonable to use unweighted regression whose residuals pass the normality test. However, for completeness, we also report weighted results which do not pass the normality test, though we use robust standard errors (Baum 2006, p266) which are conservative to help overcome this problem.

Results for Temporary Workers. As noted, the temporary worker dependent variable is broadly defined to include seasonal workers. However, even this broad definition still leaves about two-thirds of firms at zero (see notes to Table 7), employing no temp workers of any sort, hence our Tobit model. To estimate effect sizes of coefficients here we need to multiply the tobit coefficients by the proportion of positive observations.

Going down the rows of Table 7, we start with the important wage floor variables. As discussed above, the variable for whether a majority of the workplace's workers is paid at or below €11,000 can be taken to indicate a low-wage, "poor" firm. The weighted first column results show that if this variable changes from 1 to 0 (in other words comparing a low paying to a high paying business) the proportion temp increases by 8 (=0.32×27) percentage points. The effect is somewhat smaller, about 6 points ((=0.32×19) if we take the unweighted result. This result fits with the argument that if a firm feels pressured by the minimum wage agreements, it employs on a temporary basis[5].

At the same time, the collective bargaining coverage variable in the next row shows that if the majority of workers are paid according to the national wage collective agreements the temp proportion decreases. In fact, if this variable changes from 1 to 0 (in other words comparing a business which pays a majority of its workers according to an agreement with one which does not) the proportion of temporary workers decreases by 8 (=.32×25) percentage points (7 points using the unweighted results). As noted above, a possible explanation for this result is that high collective bargaining coverage indicates a law-abiding and rich firm, which is not driven to employ temps.

[5] Regressions explaining the proportion low paid in a workplace show that the proportion is associated with decline (i.e. not hiring), and also with small size. For collective bargaining coverage, we find the opposite, indicating stronger firms.

As a test of this interpretation, we use the "grey" workplace category variable detailed in Table 6 above. As noted, this variable indicates the workplaces which are (probably illegally) paying some of their workers below the legal minimum, and which are not covered by the collective agreements. These workplaces are therefore the least prosperous, and we expect them to feel most pressure from wage floors. Results are given in the third row which gives a highly significant effect. A firm in the "grey" category has 11 (=.32×.37) percentage points (10 points using the unweighted result) higher temp employment.

Next consider our three variables relating to working conditions floors. The first variable indicates legal difficulties with employment relations, via the taking of employee relations advice. We expect a negative coefficient here, but it is never significant as can be seen. However, the second variable for whether the firm does not have difficulties with the Labour Inspectorate over hiring temps, is significantly positive at least in the weighted columns. In other words, firms which feel that the Labour Inspector is no obstacle to employing temps do so, and conversely. The suggestion is, therefore, that the Labour Inspector can indeed form an obstacle to temp employment.

The last working conditions variable is for whether the firm prefers temps because they are easier to fire, and this variable produces the strongest results. As can be seen, its coefficient is positive and significant in three of the specifications. This result suggests that a factor promoting the employment of temps is indeed the simple fact that they are easy to fire.

We now turn to the controls. First, there is the variable for whether managers consider their workers committed. As we have noted, this variable could signify more complex tasks and/or a better managed, more prosperous firm which should point to less temp employment. Here, the results are mixed, with the unweighted regressions showing no reaction, though the weighted regressions are strongly negative, as expected. Interestingly, the simple correlation in Table 6 is also strongly negative (-0.228) which leads us to feel that there is some support for the argument.

Next there are the variables linked to labour flexibility in the workplace. These are (a) the part-time variable, (b) the family employment variable and (c) the variable for possible future flexibility in the workplace. The part-time variable indicates whether the firm employs any part-timers. We see that it is strongly negatively related to the percentage of temporary workers, suggesting that part-timers and temps are substitutes, which is plausible. In other words, a business which has managed to secure some part-time workers might not wish or need to go to the trouble of securing permission for temp worker contracts as well.

The family variable is based on whether the firm employs any family members. We might expect family members to provide an alternative source of flexibility- rather as part-timers do. In fact, the family variable is insignificant. Nevertheless, in other regressions (not shown here) explaining coverage by collective agreements, family members are significantly linked negatively with coverage by the collective agreements (see also the negative simple correlation -0.388 in Table 6) which we have already seen impacts on temps. In other words, we

may have already picked up the family worker effect via the collective bargaining coverage (or grey market) variables.

The last workplace flexibility variable indicates "the firm's expectations for the future about increases in part-time, temp and subcontracting employment". We see that expected future use of flexible forms of employment is only significantly linked with temporary work in the unweighted regression (the third column). In other words, there are signs, that current temporary employment indicates future temporary employment.

We also include variables for the workforce age composition. As noted, older workers might be associated with skilled work, which is more difficult for temps to do, and younger workers are the converse (young workers are also a typical outsider group, likely to be more associated with temps). In fact, as can be seen, higher percentages of older workers are negatively linked with temp work and conversely for younger workers. While these coefficients do not quite gain significance given our conservative testing standards, there is some confirmation of this reasoning.

In addition, we include variables for whether the firm has hired workers, or made redundancies. These both strongly indicate that expanding firms (fewer redundancies and more hires) are more likely to hire temps. The future seems to be temps, therefore.

Finally there is the control for workplace size (number of employees). Here, the unweighted regressions in the third and fourth columns indicate that larger firms employ more temps perhaps because they face more variable tasks. However, the weighted regressions in the first two columns overturn this result, and show signs of a negative link. It might be that the weighted results which emphasise the small firm group are showing how larger size (within this group) means less need of the temp worker escape route. Be this as it may, the firm size effect is small either way given our other controls.

Analysis of Family Employment

We now use the tobit model to explain the percentage of family workers employed in the workplace. On the right hand side, we use most of the same variables used in the temp worker regression. Starting as before with the wage floor variables, we see that while family employment is not significantly linked to the majority on low pay variable, it is strongly negatively linked to coverage by collective agreements. This finding is in line with the temp worker finding that prosperous firms (which follow national agreements) are less likely to employ temps. In other words, family workers are also a form of flexible employment and richer firms which are less at the mercy of changes in the market may consequently be less in need of family and temporary workers.

Backing up this argument, the "grey" category variable is strongly positive. Hence, we see that workplaces in the grey category, paying low wages probably below nationally agreed rates, are more likely to employ a high percentage of family workers, other things equal. As was the case for temp workers, we conclude poorer firms are more likely to favour family workers because they are easy to lay off, and less likely to complain about low wages.

Turning next to variables which relate to employment regulation and labour inspectorate issues, the strongest results are for the variable for feeling temps have low EPL (0.25 in the first column). While this variable relates to temps, not family workers, our interpretation is that it indicates that firms employing family workers are conscious of EPL. Such consciousness could thus be a factor in their sticking to family workers for whom EPL also does not apply.

Regarding variables which deal with hiring, and redundancy, we see that the hiring variable tends to be negative and redundancies positive. This result indicates that firms that employ family workers are less likely to grow. Additionally, it is worth noting the large negative coefficient (-0.75 in the first column) on the percentage of young workers, which goes along with the conservative, non-growing nature of Greek family firms.

As regards variables with a flexibility character, part-time employment and temporary employment, we see that both these variable have negative signs indicating substitutability, though significance depends somewhat on specification. We expect substitutability since temps, family workers and part-time workers are alternative pathways to flexibility. Finally, the firm size variable is significant and negative in all specifications, simply indicating that firms run out of family members to employ as they grow which is natural.

6. Conclusions

We have seen (Figure 1) that the Greek labour market was performing badly even in the pre-crisis period. The Greek labour market has long been highly regulated, with high wage and working conditions floors. It is hard not to conclude that these two facts are related. The purpose of this paper is to go to the micro level, using a mini-WERS constructed for Greek conditions (the TERS), to show with greater precision how legal constraints might affect firm decisions. In a sense we are using Greece as a case study to test the "escape route" hypothesis, and fortunately at the time our survey was conducted, there was no question of recessionary conditions affecting the results. Our focus has been on temporary employment which can be used as an indicator of the way in which firms react to legal constraints. Family work is also of interest as an escape route. The basic hypothesis is that temporary and family work are forms of insurance for the poorer firms which cannot cope with high wage and working conditions floors.

As regards the determinants of the demand for temps, we have two important results. First, there is the significant positive sign of the minimum wage variable – or the "grey" category variable. This sign fits our hypothesis in that where firms have a high proportion of workers on the minimum they are likely to worry about the possibility of a rise in the minimum, and hence will employ on a more temporary basis. Our second important result is the importance of labour regulation variables. We see that temp hiring decisions respond to manager judgements about the Labour Inspector's position about employing temps, and to judgements about whether temps are easy to fire. We take these results to signal both that employing temps is not easy (hence the need for knowledge about the Labour Inspector), and that their advantage is low EPL. Our results therefore suggest that labour law matters.

Findings for family worker employment are similar to temp worker employment in that the "grey" category variable is strongly positive. Workplaces in the grey category, paying low wages probably below nationally agreed rates, are more likely to employ a high percentage of family workers, other things equal. As was the case for temp workers, we conclude that marginal firms favour family workers because they are easy to layoff, and less likely to complain about low wages. At the same time, we also find some effects for EPL variables. In particular, we find a strong coefficient on the dummy for feeling temp contracts are advantageous because of temps' easier dismissal, indicating that firms that employ family workers are conscious of EPL. In general, we find substitutability between temps, family workers and part-time workers, which is reasonable, since these groups represent alternative pathways to flexibility. In sum, therefore, our results support the hypothesis stated at the outset, namely, that marginal firms, which cannot afford the national wage rates or the EPL standards, attempt to escape these standards by employing temps and/or family workers.

In conclusion, our findings provide grounds for supporting the OECD's (2007, p 98) view that, "This poor labour market performance in Greece is principally due to rigidities in labour market institutions". Our findings also provide support for Voudouris's (2004) view that extensive use of temporary contracts is a means of circumventing the rigid EPL regime. Again, our findings which come from a firm-level database support Kahn's (2007) result that EPL raises temp work based on a quite different database – aggregate cross-country data. That two such different approaches reach a similar result builds confidence.

It is worth concluding with some caveats, since these findings represent only a first attempt at a large-scale firm survey in Greece. We have aimed to develop a robust microeconometric evidence base, and provide data on employment and wages as well as management views of EPL and the Labour Inspectorate from a representative sample of Greek businesses. At the same time, this survey only covers one provincial area, namely Thessaly, and the evidence base should be broadened to cover more of Greece, including the important Athens area. In sum, the TERS results imply that Greece's national collective bargaining and EPL arrangements need revision. Such revision indeed appears to be in train in current crisis conditions. Still, the TERS needs to be substantiated by broader surveys, and furthermore, the possible form for the required legal revisions in collective bargaining and EPL needs further research. This said, our initial results support the case for these revisions.

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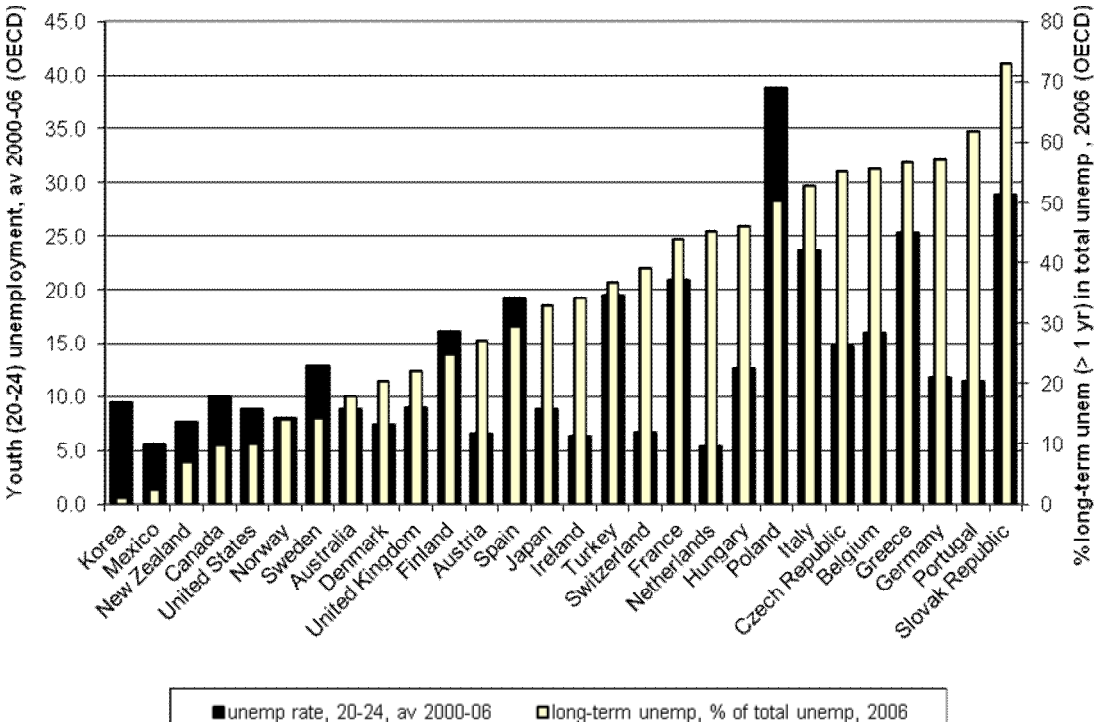

Figure 1: High Youth and Long-Term Unemployment in Greece

Table 1: Distribution of the Survey Sample by Workplace Size and Family Interest

How many employees are there in this workplace?	Weighted base (%)*	Sample(%)	Employs family members	
			No	Yes
1-5	179 (87)	73 (35)	36	64
6-10	21 (10)	53 (25)	51	49
11-19	2 (1)	34 (16)	56	44
20-49	2 (1)	37 (18)	62	38
50-99	0.2 (..)	3 (1)	33	67
100+	0.2 (..)	6 (3)	67	33
Total	206	206	37	62

Source: Sample figures are from the Thessaly Employment Relations Survey (TERS)
* Weighted base is calculated from the distribution of Thessaly workplaces with personnel as given in the Employment Observatory Research - Informatics (PAEP, 2003) survey.
Notes: Survey weights have been used to calculate the percentages of workplaces employing family members. The oversampling of larger workplaces in the TERS is seen as workplaces of size 50+ form about 5% of the sample but only 0.4% of the provincial population).

Table 2: Pay determination

		Small, < 11	11 or more
a) Determinants of pay in workplace (% of workers in the workplace)†:	National general wage agreement	55	61
	Sectoral wage agreements	4	21
	Enterprise agreement	14	5
	Individual agreement	26	12
b) Percent of workplaces in which pay of majority is determined by national or sectoral agreements		52	81
Memo: Private sector union density is approx. zero			

Source and Notes: Survey weights have been used to calculate the percentages - see Table 1.
† The workplace manager was asked the question: "Looking at pay of employees in the largest occupational group, what proportion are paid according to…" the four alternatives listed in the table.

Table 3: Wage Distribution of Employees

	Gross wage categories‡(in 2006 Euros per year)	Small, < 11	11 or more
a) Distribution of pay in workplace (% of workers in the workplace)†:	11,000 (= gross minimum wage)	64%	36%
	11,001 – 13,500	25	42
	13,501 – 18,000	7	17
	18,001 – 23,000	0.5	1.5
	23,001 – 30,000	1.3	1.5
	More than 30,000	1.5	0.5
b) Percent of workplaces in which pay of some workers is at or below 11,000		65	31

Source and Notes: Survey weights have been used to calculate the percentages - see Table 1.
† The workplace manager was asked to "Fill in this card for the percentage of your employees who belong to the following categories…" as shown in the table. Note the gross minimum includes 16% for employee social security contributions.

Table 4: Advice on Employee Relations -TERS contrasted with WERS

(Percent of Workplaces)

Sources of Advice on Employee Relations	TERS - advice over past 24 months		WERS 2004-advice over past 12 months‡	
	Small, < 11	11 or more	Small, < 11	11 or more
Accountant	62	69	18	6
Lawyer	27	52	17	34
Management Consultants	4	17	9	17
Labour Inspectorate	20	58	NA	NA
Public Employment Services	37	49	NA	NA
Social Insurance Institute	24	44	NA	NA
Chamber of Commerce & Industry	21	19	NA	NA
DTI or govt dept	NA	NA	28	59
Employers' Association	5	12	3	4
Advisory and Conciliation Service	NA	NA	18	46
No advice	21	15	49	25
Sample numbers	126	80	278	1985

Sources: TERS 2006 and WERS 2004 .
Notes: Survey weights are used to calculate all percentages. Columns sum to over 100%, since more than one source of advice may be used.

Table 5: The Labour Inspector

(Percent of Workplaces)

	Small, < 11	11 or more
Workplace consulted with Labour Inspector before workforce reduction (% of workplaces with reductions)	24	52
Hiring/firing laws are an obstacle to recruitment (% strongly agreeing/agreeing)	52	45
Temp workers are to be preferred because they are easier to fire ((% strongly agreeing/agreeing)	10	10
Labour Inspector easily gives permission to employ temps (% strongly agreeing or agreeing)	33	39
Labour Inspector gives advice on dismissals (% of workplaces asking advice from inspector)	31	70
Labour Inspector gives advice on temps (% of workplaces asking advice from inspector)	29	38
Sample numbers	126	80

Sources: TERS 2006 - **Notes:** Survey weights are used to calculate all percentages.

Table 6: Means and Correlations of the Main Variables

Variables	Means	Correlations									
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1) Percent of workers temporary including fixed term contract and agency workers in workforce	12%	1.000									
2) Percent of family employees in workforce	33%	-0.118*	1.000								
3) "grey" category – some workers paid at or below the minimum, and majority uncovered by national or sectoral agreement, 1=yes	0.29	0.180***	0.295***	1.000							
4) majority paid at or below the minimum wage (11,000€), 1=yes	0.64	0.135*	0.154**	0.362***	1.000						
5) majority covered by national or sectoral wage agreement, 1=yes	0.53	-0.108	-0.388***	-0.790***	-0.048	1.000					
6) firm taking ER advice from both accountant and lawyer in last 2 yrs, 1=yes	0.25	0.079	-0.105	-0.220***	-0.200***	0.129*	1.000				
7) dummy for managers feeling LI no obstacle for temps, 1=strongly agree/agree	0.33	-0.014	0.012	-0.102	-0.136*	0.072	0.074	1.000			
8) dummy for manager feeling temps are preferred because easy to fire, 1=strongly agree/agree	0.10	0.168**	0.083	0.114	0.097	-0.040	-0.041	-0.105	1.000		
9) any hires in last 2 yrs, 1=yes	0.45	0.116*	-0.284***	-0.211***	-0.197***	0.288***	0.162**	-0.022	-0.211***	1.000	
10) managers considers workers quite or very committed, 1=yes	0.72	-0.228***	-0.132*	0.167**	-0.101	-0.112	-0.161**	0.005	-0.201***	-0.120*	1.000
11) number of employees	4.5	0.017	-0.117*	-0.078*	-0.097	0.123*	0.052	0.037	0.006	0.156**	-0.019

Table 7: Regressions for Temporary Worker Employment

Dependent variable: Percent of temporary workers including seasonal workers					
Independent variable		**Weighted Coefficient**	**Weighted Coefficient**	**Unweighted Coefficient**	**Unweighted Coefficient**
Majority paid at or below 11,000€ per year		0.27**		0.19**	..
Majority covered by national & sectoral wage agreement		-0.25**		-0.21**	..
"Grey" category – some workers paid <=11,000€, and majority not covered by collective agreement			0.37***		0.34***
firm taking ER advice from acct. or lawyer in last 2 yrs		-0.03	-0.06	0.05	0.06
dummy for managers feeling labour inspector no obstacle for temps		0.22*	0.19*	0.05	0.03
dummy for manager feeling temps preferred because easy to fire		0.33*	0.26	0.27**	0.26**
Managers considers workers committed		-0.19	-0.24*	0.01	0.03
any family employees		0.08	0.08	0.08	0.03
any part-time workers		-0.39***	-0.35**	-0.20*	-0.22**
percent old workers, >51		-0.26	-0.34	-0.25	-0.38
percent young workers, <21		0.37	0.38	0.28	0.35
any increase in subcontract or part-time workers over past 5 yrs		0.13	0.14	0.02	0.05
Any planned increase in subcontract or part-time workers over next 2 yrs		0.01	-0.00	0.15*	0.14
any non-routine subcontracting		-0.07	-0.10	-0.01	-0.03
any redundancies in last 2 yrs		-0.08	-0.10	-0.19*	-0.19
any hires in last 2 yrs		0.23**	0.20	0.32***	0.32***
number workers employed x 10		-0.02	-0.01	0.02***	0.02***
Industry dummies (9)		YES	YES	YES	YES
pseudo R^2		0.22	0.22	0.30	0.29
Test for normal and homoskedastic error	test value:	32.4†	30.2†	5.2	4.3
	5% critical value:	8.2	6.4	6.1	5.6

Notes: ***, **, * signify 1%, 5%, and 10% significance levels, using robust standard errors . Equations have 187 observations, 125 left censored at 0. Tobit coefficients have to be multiplied by the proportion of non-zero observations (0.32=62/187) to give effects conditional on being observed..

† Both these tests (Vincent 2010) fail, however they are fitted to the model without industry dummies since the test would not converge with the full model with weights. Hence robust standard errors (Cameron and Trivedi 2010, 540) are used to calculate significance values.

Table 8: Regressions for FamilyWorker Employment

Dependent variable: Percent of family workers					
Independent variable		**Weighted Coefficient**	**Weighted Coefficient**	**Unweighted Coefficient**	**Unweighted Coefficient**
Majority paid at or below 11,000€ per year		.07	..	.00	..
Majority covered by national & sectoral wage agreement		-0.14	..	-0.21***	..
"Grey" category – some workers paid <=11,000€, and majority not covered by collective agreement		..	0.15***	..	0.24***
firm taking ER advice from acct. or lawyer in last 2 yrs		0.08	0.08	0.02	0.02
dummy for managers feeling labour inspector no obstacle for temps		0.13	0.12	0.06	0.04
dummy for manager feeling temps preferred because easy to fire		0.25*	0.24*	0.16*	0.14
Managers considers workers committed		0.01	-0.09	-0.07	-0.06
any non-routine subcontracting		0.11	0.09	-0.02	-0.02
any redundancies in last 2 yrs		0.04	0.08	0.06	0.07
any hires in last 2 yrs		-0.08	-0.07	-0.05	-0.04
percent temp employees		-0.38	-0.31	-0.22	-0.26*
any part-time workers		-0.13	-0.12*	-0.08	-0.09
any seasonal workers		0.18	0.15	0.14	0.14
percent old workers, >51		-0.29	0.28	-0.03	-0.07
percent young workers, <21		-0.75**	-0.70[8]	-0.76**	-0.62**
any increase in subcontract or part-time workers over past 5 yrs		0.13	0.12	0.05	0.05
Any planned increase in subcontract or part-time workers over next 2 yrs		-0.19**	-0.18*	-0.07	-0.08
number workers employed x 10		-0.22***	-0.23**	-0.04***	-.04***
Industry dummies (5)		YES	YES	YES	YES
pseudo R^2		0.26	0.25	0.30	0.29
Test for normal and homoskedastic error	test value:	46.0	41.8†	6.8	6.7
	5% critical value:	4.4†	5.8	6.5	5.8

Notes: ***, **, * signify 1%, 5%, and 10% significance levels, using robust standard errors . Equations have 187 observations, 92 left censored at 0. Tobit coefficients have to be multiplied by the proportion of non-zero observations (0.51=95/187) to give effects conditional on being observed..

† The tests for normality fail for the weighted regressions, however they are fitted to the model without industry dummies since the test would not converge for the full model with weights. Hence robust standard errors (Cameron and Trivedi 2010, 540) are used to calculate significance values.

APPENDIX

Appendix Table 1: Comparison of Industry Composition, TERS and WERS 2004

Percent of Workplaces

Industry Category	TERS	WERS, private sector workplaces < 20
	Weighted percentages*	Weighted percentages
Manufacturing	9 %	11%
Electricity, gas and water	0	0
Construction	6	5
Wholesale and retail	50	30
Hotels and restaurants	20	10
Transport and communication	2	4
Financial and other business services	3	24
Education and health	1	10
Other community and personal services	10	6
Total	100 (Sample number=203)	100 (Sample number=483)

Sources: WERS 2004 and TERS.
Notes: * Survey weights have been used to calculate all percentages.

APPENDIX GEOGRAPHIC INFORMATION

As shown above, Thessaly is a region in North-central Greece. It has a population of approx 0.75 million out of Greece's 11m. Its employment is about 300,000 out of Greece's 4.5m. This region is Greece's flattest, with the country's largest single plain, but it also contains Greece's highest mountain, Mount Olympus (2 917 m).

Thessaly's economic development is centred around the cities of Larissa and the port of Volos, each of which has its own pattern of activity. There is a high level of manufacturing activity in Volos, which has traditionally been a centre of general and mechanical engineering.

Larissa on the other hand is mainly an educational and retail centre, with peripheral industrial activities linked mainly to agricultural processing. Outside of these cities, in the western part of the region (Trikala, Karditsa), economic activity is centred on agriculture, but there is also considerable tourism focused on the area's many hilltop monasteries.