The impact of Greek labour market regulation on temporary employment – evidence from a survey in Thessaly, Greece

Anagnostopoulos, Achilleas D.; Siebert, William

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Achilleas D Anagnostopoulos[a] and W S Siebert[b c *]

[a] School of Business and Economics, TEI of Larissa, Larissa, Greece; [b] Business School, University of Birmingham, UK; [c] IZA, Institute for the Study of Labour, Bonn

This paper uses an original dataset for 186 workplaces in Thessaly (central Greece), to study consequences of Greece's strict employment protection law (EPL) and national minimum wage for temporary employment. We find higher temporary employment rates among workplaces that pay low wages close to the minimum.. We also find that EPL "matters", in particular, managers who prefer temporary contracts because temporary workers are less protected definitely employ more. Our findings thus support the view that a firm's HRM decisions regarding internal versus external allocation of tasks are influenced by labour regulation.

JEL Classification: J38, J41, J81

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

*Corresponding author. W.S. Siebert. Email: w.s.siebert@bham.ac.uk

1. Introduction

The role of labour regulation in protecting insiders at the expense of outsiders is an important consideration for policy. Greece provides an instructive case of *de jure* heavy regulation with high wage floors, and strict employment protection laws (EPL). Greece also has many SMEs, which might aim to avoid the regulation by externalising employment relationships, for example by hiring workers on temporary contracts, or as supposedly independent contractors. Fundamentally, our research treats the basic question in strategic HRM raised by Lepak and Snell (1999) as to a firm's "internal" (i.e., core, permanent) versus "external" (peripheral, temporary) allocation of work. In particular, we explore whether firms change their mix of permanent and temporary contracts in response to Greece's strict labour regulation, basing our analysis on an original survey of employment relations in nearly 200 private sector businesses in the Greek province of Thessaly in 2006-7.

While there are several types of temporary contract (see Cappelli and Keller 2013), we take them together since all remove from the firm the responsibility of offering security of tenure. Holders of temporary contracts have fewer employment rights, and are less able to enforce them. We follow Eurostat and the OECD by defining "temporary" jobs as dependent employment of limited duration (OECD 2002 Annex 3A; OECD 2014 Box 4.1). The list of job types includes fixed-term contracts (with a defined end date), seasonal work, on-call contracts of limited duration, project contracts, training contracts and temporary work agency (TWA) contracts (though at the time of our survey TWAs were effectively banned in Greece).[1] In sum, we focus on why firms use any type of the above temporary contract, since any of them might represent an "escape" (Olsen and Kalleberg 2004) from regulation

The Greek labour market has been performing badly, which gives urgency to the search for causes. Table 1 gives a comparative picture of labour conditions in panel A, and measures of the regulatory environment in B. The labour conditions statistics are averages for 2000-06, with the aim of giving the long-run position, well before the recession. Panel A shows severe youth and long-term

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[1] The main definitional problem is deciding whether the contractor (or subcontractor or free-lancer) is more a regular than a temporary worker. In our survey, we solve this problem by specifically asking for numbers of temporary contractors and subcontractors..

unemployment, both almost twice the OECD average, and within this context, the organisational flexibility provided by temporary work is important for job creation.

[Table 1 near here]

The table also shows that Greece's firms make considerable use of temporary work arrangements, which covered 10.5% of the workforce (and 22.6% of the unskilled) in the early 2000s. Of course, we might expect high temporary employment prevalence in Greece where the seasonal tourist industry is so important, and indeed, the Greek figure is similar to the OECD average of 9.3 (and remains similar at about 10% in 2011 - see OECD 2014). However, we must remember that there are severe obstacles to temporary employment in Greece, including a ban on temporary work agencies (only lifted in 2012 – see below), which will act as a brake on temporary employment[2]. Moreover, we see that a higher proportion of unskilled workers is on temporary contracts in Greece than the rest of the OECD, suggesting a two-tier market. Thus, concerns remain.

A tendency to use temporary contracts links to the literature (e.g., Kalleberg 2000, Kahn 2007, 2010) on the consequences of strict EPL for regular jobs. Greece indeed has strict regular worker EPL (Panel B), which could make firms reluctant to hire new entrants into regular jobs, but instead to place them in temporary jobs – despite the obstacles. Greek firms might indeed have a "repressed" demand for temporary workers, which are then not a means of bringing in valuable performance-enhancing knowledge (Matusik and Hill 1998) but simply a means for micro-firms to survive. Issues of whether such workers have much prospect of moving on to permanent employment naturally arise (for similarities with Spain, see Ruiz-Santos et al, 2003, and Roca-Puig et al 2012). Ultimately, the issue of whether firms manage to use temporary workers despite the laws (or perhaps ignoring them, especially for small firms) is empirical, and we will put forward tests below.

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[2] An instructive further obstacle is the law 1346/1983 requiring re-hiring of hotel seasonal workers. Hotels must re-hire at least the average number of employees hired over the last two seasons. A sliding scale for hiring according to hotel occupancy is permitted, thus, only 1/3 of the employees need be rehired if the hotel has only 20% occupancy, rising to all employees if there is 80%. The process is to be monitored by the Labour Inspector. Clearly, this law will reduce a hotel's hiring of seasonal workers, by imposing obligations for future seasons.

Greece's exceptional regulation is shown in panel B, starting with the World Bank's "ease of doing business" index. We see that in 2006, the time of our survey, Greece ranked only 109 overall in the ten business policy areas measured, much lower than the OECD average[3]. Then, the second row shows that the Greek minimum wage floor is higher than the OECD average. The difficulty that the high minimum poses for Greek SMEs has long been recognised (see e.g., Kufidu 1999), but an additional point is that a wage floor may exacerbate the effects of EPL on temporary work as we argue in a simplified model below.

The bottom three rows of Panel B take up the pressure of EPL itself, starting with the OECD indices for regular (i.e., open-ended contract) worker EPL and temporary worker EPL. We see that EPL in Greece is higher both for regular and particularly for temporary workers. The last row then shows the World Economic Forum hiring and firing practices index, which is useful because it is based on managers' views, and so should be closer to the *de facto* position (though employer perceptions have been found to be consistent with *de jure* regulations, see Gaelle and Scarpetta 2006). Again, we see that Greece is judged much more on the "impeded" side than the average OECD country.

While panel B indicates Greece's high labour regulation, the question of enforcement is controversial. For example, Matsaganis (2007, 542) states that amongst SMEs " informal employment is the norm, enabling many employers to flout regulatory constraints on dismissal protection, minimum wage and social insurance". Mihail (2004, 552) even believes that labour law enforcement is "obsolete". Others (e.g. Seferiades 2003, Psychogios and Wood 2010, Kretsos 2011) make a similar point. Indeed, our own survey (Table 5 below) provides good evidence that minimum wages are avoided.

On the other hand, a body of literature supports the view that Greece's regulation has some effect. For example, Kufidu and Mihail (1999. 492) state that fixed term contracts are a means of "circumventing one of the most rigid legislative regimes concerning employment protection in the EU". A similar argument is also

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[3] Zambarloukou (2006, 215) even classifies the Greek system as "state capitalism". On the other hand, Seferiades (2003) strongly criticises the concept of ease of doing business, pointing out, for example, that Greece is a leader in starting businesses.

made by Voudouris (2004, 132). In fact, both sides could be right, because while the law may be evaded, so long as there is some chance of penalties, firms will react. Moreover, the law is more likely to be evaded by the micro (very small) firms, and so a distinction between micro and other firms should be informative. The matter is therefore testable in principle with our data.

Our research below tests for whether there is a link between managers hiring temporary workers, and their views on EPL and the Labour Inspectorate, controlling for other important factors such as the firm's pay and it size. We will hypothesise that temporary work is resorted to when these job security and wage regulations or "floors" bind in the manager's view. A particular example is the case of a lower paying firm, which cannot afford the national wage or EPL standards, and so may attempt to escape these standards by employing temporary workers. For a firm at the edge, as it were, the gains to using a temporary contract rather than a permanent are greater.

The plan of the paper is as follows. In the next section, we outline the labour regulation framework in Greece. We then discuss theoretical determinants of temporary worker hiring. The empirical sections follow, where we first give details of the Thessaly workplace survey, and then present our measures of the main variables. In the last sections, we present the regression results and derive implications for the impact of EPL and wage floors, and finally draw some policy conclusions for Greece's post-crisis situation.

2. Labour regulation in Greece
Let us consider regulation of wages and working conditions in turn. As regards the minimum wage, note that we are interested in its effects on HRM decisions within a firm rather than wider effects, for example on unemployment (results for Greece point to moderate unemployment effects, see Karageorgiou 2004). Within a firm, a rise in the minimum wage may prompt a move to save on costs by reducing the value of working conditions (see Simon and Kaestner 2004). A high minimum could thus be accompanied by lower training, workplace safety, pensions, and also low job security. Lower job security could in turn imply substitution of temporary for permanent contracts, our focus.

Here, as with much minimum wage research, the international evidence is mixed[4], but there are at least signs (Kahn 2007) that minimum wages can induce substitution of temporary for permanent jobs. The reason is simply that minimum wages can intensify the problems associated with EPL by restricting parties' freedom of manoeuvre (see Lazear 1990). In other words, when EPL imposes a legal requirement for job security, wages would be expected to fall (Summers 1989), but if this fall is prevented, then other cost-saving adjustments may be sought. One such adjustment could be the replacement of permanent by temporary jobs.

In fact, Greece has long had a system for setting high minimum wages via extended collective agreements (see Kritsantonis 1998; also see Sotiropoulos, 2004 on Greece's "neo-corporatism"). Though there have been recent changes due to the recession (see below), the laws prevailing at the time of our survey meant that there was a National General Collective Agreement, which set national minimum wages every two years, and this minimum could be supplemented by sectoral agreements (Zambarloukou 2006, OECD 2011a). The minimum has tended to be high relative to average wages by international standards (Table 1), perhaps because provincial conditions are not reflected in the negotiations given weak unionisation at local level (Matsagannis, 2007; see also Kufidu and Mihail 1999). At the same time, the central union movement appears politically influential but not representative, since the main union federation (Ioannou 2005) is funded by the state, with tiny member contributions. For its part, the employers side has had centralised organisations too (see Krisantonis 1998), which are also likely to be unrepresentative, given Greece's long tail of small producers in the provinces. While it is true that the high minimum wages have often not been paid, as we acknowledged above (and see Table 5), management may still be worried by paying illegally low wages, and hence react with extra temporary hiring. Therefore, it is worth gathering (indicative) data on whether a workplace's wages are close to the national and/or sectoral collective agreement floor, and testing for this reaction.

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[4] For example, Neumark and Wascher (2001) find that training is reduced when minimum wages increase, with Dustmann and Schonberg (2009) finding the opposite. As for pensions, Marks (2011) reports these are reduced as minimum wages increase, but Simon and Kaestner (2004) find little effect.

Turning to regular worker EPL, again worker protection has a long history, and is extensive as is to be expected given Greece's "Mediterranean capitalism" (Psychogios and Wood 2010) with its French civil law tradition. Thus, compensation for unfair dismissal was begun in 1920 (see Avdela 1997, Koukiadis 2009), at about the time that the Labour Inspectorate was established. At the time of our survey, Greece's regular worker EPL was strict (see Table 1), with high "procedural inconveniences" according to the OECD's measurements (2004, Table 2.A2.1), and a requirement for 6 months pay for compensation for unfair dismissal of long service (20 years) workers.. Moreover, protection began after only 2 months service (since raised to one year). Importantly, there was no lower firm size limit for these payments, so SMEs could also be liable if the employee brought a successful case.

Temporary workers have also long been protected, with laws dating from the 1920s providing for their contracts to become automatically open-ended after a given period (Koukiadis 2009). In addition, temporary contracts (EIRO 2001) have only been permitted when there are "objective" reasons such as seasonal or project work. Temporary work agencies have also been banned. Although the ban was lifted in theory in 2001 (Law 2656), large capital requirements and other restrictions effectively continued the prohibition. There are thus no temporary agency workers in our sample, and few in Greece as a whole to this day (see OECD 2014).A further deterrent law (see OECD 2011a, 120), is the requirement to pay a temporary employee whose job is terminated before the agreed time all the wages for the time remaining until the termination date. Thus, we must bear in mind that the temporary worker escape route has never been an easy option in Greece, and this factor needs controlling as we do below.

The enforcement of EPL cannot be tight since there are few inspectors, only about 400 for the whole of Greece in 2008 (Labour Inspectorate 2008). Indeed, as noted above, there has been criticism of enforcement (e.g. Mihail 2004; see also OECD 2014b for current criticism). Still, the organisation is by no means moribund, and was strengthened in 1998 (EIRO 2001) by Law 2639 which took it from local authority control into the direct control of the Minister of Labour. Hence, the Labour Inspectors are likely to retain considerable "negative" power, not least

because of their stringent reporting requirements 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 Inspectorate within 15 days.

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. Our survey therefore contains questions probing manager judgements on the effects of EPL on employment decisions which we can then test for actual effects.

3. Theoretical considerations

Our question is to what extent Greece's exceptional labour regulation influences business decisions on the "internal" versus "external" allocation of work. Following Lepak and Snell (1999), we can think of firms as allocating workers to a range of tasks, some of which are core to the firm's objective, and others which are peripheral. Core tasks require workers to invest in specific human capital, and these workers are trained and developed internally. Here, the full-time permanent contract is natural, and indeed, as Autor shows (2003) the worker's incentive to invest in specific skills depends on contractual permanence. On the other hand, peripheral tasks primarily support the core, acting as a screening ground from which core workers are selected, and in the main simply require routine public knowledge skills.

For the routine skills, higher labour turnover is acceptable, giving Atkinson's (1984) "numerical flexibility". Hence, "atypical" contracts including temporary contracts, agency work, sub-contracting and probationary agreements will be common. For specialist skills, bought-in experts or "alliances" are appropriate, and all our Greek firms indeed have alliances with accountancy and legal firms. The important point is that there is no "best practice" permanent-type contract covering all tasks (Lepak and Snell 1999, 42), and we expect a variety of contracts.

Building on this foundation, we can argue that a firm rationally decides on its most efficient mix of core and periphery tasks and their corresponding contracts, including temporary contracts. The mix should also respond to changes in labour regulation. Admittedly, there is controversy (e.g., Osterman 2011) over the extent to which organizations can truly manage HRM practices to maximise efficiency. Still, a basic prediction (see Heywood et al 2011; also Houseman 2001, and Abraham and Taylor 1996) is that temporary and other atypical contracts are used in practice to buffer the firm against change, and provide the numerical flexibility to protect the firm's core competences and its specific training investments in the core workers.

Our theory requires that a firm can change its mix of core and periphery tasks, which admittedly might be questionable for some contract types. In our work, we assume peripheral tasks can be allocated to workers subject to a variety of contract types, not only those on fixed term contracts, but also seasonal workers, temporary contractors/subcontractors, and trainees and workers on subsidised employment programmes. However, while it is reasonable to think of fixed term contracts (with a defined end date) as being changed for permanent if circumstances require, other contract types such as seasonal work or traineeships point arguably to more fixed circumstances. For example, a ski resort (Ainsworth and Purss 2009) is inherently seasonal, giving a low ratio of permanent to seasonal workers. The mix here appears "technologically determined" and difficult to alter. A similar case might be made for trainees (employed especially in construction, for example), who cannot simply be switched for skilled workers. This said, there are examples of permanent "tied" labour contracts in agriculture (for example, see Basu 2013), which is clearly also seasonal. The agriculture example shows that converting seasonal to full-year jobs is possible if there is enough incentive. Similarly, more trainees can be employed if subsidies increase. Our theory only requires marginal changes, which are certainly possible because Greek businesses in practice vary considerably in their mix of contracts, as we show below.

Change can be either unexpected, as with business cycle shocks, or expected, as with the need to cover for absences, or seasonal demand fluctuations. As regards business cycle changes, evidence is given in the time series studies of Holmlund and Storrie (2002) for Sweden, and Wenger and Kalleberg (2006) for the

US. Both show temporary and agency worker employment varies more over the business cycle than does regular employment, as buffering would predict. As for shocks due to absence, Olsen and Kalleberg (2004) link the greater use of agency work in Norwegian than in comparable US establishments to the need to cover for absences caused by Norway's generous leave laws. Furthermore, Heywood et al's (2011) study shows how firms adopting family friendly practices such as workplace nurseries that reduce absence, also reduce reliance on temporary work. Finally, even though seasonality is predictable, so seasonal work is more "permanent" in a sense, seasonal workers are precisely a buffer labourforce[5]. Hence, as noted above seasonal workers are categorised as temporary by the main statistical organisations such as the OECD and Eurostat, a procedure we follow. In sum, the theory that organisations rationally employ workers on temporary types of contract as a buffer receives support.

Our next point is that organisations change their mix of core and periphery tasks in response to labour regulation. In particular, as we have discussed above, when EPL for regular workers becomes stricter and wages are rigid[6], core staff cannot offset their greater cost to the firm by accepting lower wages, and so firms have an incentive to hire more workers on unprotected temporary contracts. In fact, Autor (2003) predicts that stricter EPL will be felt most by the less skilled core workers, who cannot offset the extra costs of stricter EPL by investing in specific human capital and becoming more useful to the firm. He finds that 20% of the increase in temporary agency work in the US over 1973 to 1995 results from increases in regular worker EPL, due to restrictions on the employment-at-will doctrine. Other evidence seems consistent, for example with Booth et al's (2002: F184) cross-country research showing that higher regular worker EPL links with higher rates of temporary work. They conclude (2002: F184) that this finding is "a clear sign that temporary contracts act as a way of providing employment flexibility in those countries with severe EPL for permanent jobs."

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[5] This point is demonstrated, paradoxically, by the law 1346/1983 aiming to support continuity of employment of hotel seasonal workers. Hotels must re-hire at least the average number of employees hired over the last two seasons. A sliding scale for hiring according to hotel occupancy is permitted, thus, only 1/3 of the employees need be rehired if the hotel has only 20% occupancy, rising to all employees if there is 80%. The process is to be monitored by the Labour Inspector. The complex sliding scale shows just how difficult it must be in practice to make seasonal hotel work more stable.
[6] In a similar vein, Davis-Blake and Uzzi (1993: 197) have noted that the internal labour markets in large firms have rigid wage structures, so large firms may tend to bring in temporary contract workers to provide adaptability.

Turning to Greece, while studies of employment on temporary work contractd employment have given some prominence to issues of Greek labour regulation, results are inconclusive due to small samples, often of large companies. Voudouris (2004) is the only one to have used multivariate statistical methods with a sample of 75 large companies. Using a standard model (as in Abraham and Taylor 1996), she finds that a firm's output variability is most important in explaining temporary worker employment. At the same time, while noting (2004: 132) the Greece has a "rigid legislative regime", the research does not test this. However, in the case studies of Mihail (2003 and 2004) managers were asked directly about effects of labour law[7]. The results were mixed with managers in 30 very large firms employing over 200 (Mihail 2003: 484), being overall neutral as regards "fixed term contract restrictions" - though no question was asked regarding regular worker restrictions. In a similar vein, the other study of 16 SMEs (Mihail 2004: 559) concluded that "small entrepreneurs seem to feel that they enjoy sufficient workplace flexibility", given "the existing framework of informal employee relations". The implication is then that SMEs rely on informality to escape the rules, which we can test for below.

Our hypothesis is that workplaces resort to temporary contracts when regulatory constraints concerning wage and working conditions floors bind, holding other determinants of temporary work contracts constant. Admittedly, as stressed above, there are strict laws restricting the circumstances in which workers can be employed on temporary contracts (the role of Labour Inspectors in Greece). These restrictions could block the temporary contract "escape route". We have a question in the Thessaly survey to cover this type of protection, and so aim to allow for it. Furthermore, we have to take account of the possibility of evasion of the rules especially by small firms. The easiest way to make allowance is to analyse micro firms separately from the larger firms, and search for differences in behaviour, which we do.

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[7] The recent study by Gialis (2011) if industry in Thessaloniki concludes that numerical flexibility is important, but without finding a distinct cause.

In sum, holding other factors equal, standard theory predicts that stricter (regular) worker EPL makes employment on temporary contracts more likely. Therefore, our first hypothesis is:

Hypothesis 1. Workplaces that feel more constrained by regular EPL (based on answers to our survey questions discussed below), will employ more workers on temporary contracts.

A further factor that needs to be taken into account is wage inflexibility, which is relevant for Greece where wage floors are pushed upwards by minimum wages imposed by the national collective agreement as explained above. This constraint is likely to bear unequally on firms, since the minimum compresses wages at the bottom of the distribution as is usual with collective bargaining (see Bertola, Blau and Kahn 2007). Hence, high wage firms relying on skilled workers will easily pay the minimum, but less productive firms relying on unskilled labour will not find it so easy. These firms will then reduce jobs, either shutting unskilled workers out of employment completely, or putting them onto temporary contracts (Kahn 2007)[8].

It might also be the case that the minimum wage floor interacts with EPL to stimulate temporary employment. The reasoning here has been explained above. Briefly, that the minimum wage prevents the parties "contracting around" EPL by lowering starting wages. In this situation, EPL "bites" more strongly, thereby promoting employment on temporary contracts. Taking these effects together, we accordingly propose:

Hypothesis 2. Workplaces that pay wages closer to the wage floor will employ more workers on temporary contracts, given EPL.

For our empirical procedures, it is necessary to develop measures of the pressure of EPL and wage standards. For EPL, we survey employer opinion, which not only gives the de facto position, but is also specific to each workplace. Thus,

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[8] Abraham and Taylor (1996) originally proposed that high wage (productive) firms would be more – not less - likely to employ outside contractors.. They envisaged high wage firms as attempting to cut costs by out-sourcing unskilled work. In fact, the evidence from early US studies is not clear (see Houseman 2001 and Gramm and Schnell 2001), though Cappelli and Keller's (2013) recent work shows high wage and benefits firms to be less likely to use contingent labour, in line with our hypothesis. This said, the weight of regulation, which may attract low wage firms to temporary contracts in Greece, is less relevant in the US, which has much less regulation.

even though one law applies to all Greek establishments, we argue that it affects each workplace differently, depending upon how each business relates to "the system". For example, some managers will be more experienced in dealing with the bureaucracy, or been able to build up a better relationship with the Labour Inspector, than others have. Moreover, some firms will be in a better position to comply with the laws than others are, colouring the managers' views of the laws. As for wages, data on average pay in a workplace can in principle distinguish those workplaces that have little difficulty in paying the minimum, Admittedly, our wage data cannot be precise in Greek "grey market" circumstances where many employers may avoid the law (see below), but they are indicative.

4. The Survey

The Thessaly survey aims to investigate employment relations in workplaces in Thessaly. It is modelled on the UK Workplace Employment Relations Survey[9], but with modifications for Greek EPL and centralised wage agreements not relevant to the UK. It is based on a representative sample of nearly 200 workplaces interviewed in 2006-7. Public sector workplaces are excluded, as is agriculture. It includes very small workplaces, down to those employing only one worker (see Table 2)[10]. The basic sampling frame was the register of businesses maintained by the Thessaly Chamber of Commerce and Industry. However, since larger companies are registered outside of Thessaly, an additional sample was derived from the ICAP database of larger firms (also used in Mihail 2003).

We adopted several strategies to encourage response and maintain confidentiality. The 10 interviewers were carefully selected (graduates or Masters students from the TEI of Larissa and the University of Thessaly) and trained in a three day course. In addition, a pilot survey was conducted with 20 interviews in July 2006, which showed the importance of contacting owners/managers with plenty of time to arrange an interview appointment in advance, since the

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[9] See WERS (2005). The UK Workplace Employment Relations Survey is a large-scale nationally representative survey of employee relations in approximately 2,000 UK workplaces. The first survey was undertaken in 1980, and further surveys have been performed every 5 or 6 years since. The survey uses an extensive questionnaire directed at workplace managers covering all aspects of employee relations, and has been a productive source of material for much UK research on employee relations (for a publications list, see WIAS 2010).

[10] The recent work by Daoli et al (2013), only includes larger workplaces employing more than 10.

questionnaire[11] took about 45 minutes to complete. On initial telephone contact with the businesses, the support of the Chamber of Commerce was made known, and the nature of the survey questionnaire outlined. Confidentiality was stressed, and to avoid embarrassment we decided that questions on rates of pay could not be too detailed, and in particular the issue of wages paid below the official minimum wage had to be left open (see the discussion of Tables 2 and 3 below).

Given this system, relatively few refusals were encountered. Of the 347 workplaces selected from the sampling frame and contacted, full questionnaires – apart from wage information - were achieved from 216 based on interviews with the manager/owner/accountant in the last quarter of 2006 and first quarter of 2007. 30 of these workplaces had to be dropped since they fell below our size limit of at least one employee, or would not provide wage information. Thus, our final sample was 186 with wage information, a response rate of 54%.

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 probability weights. Our weighting objective was to replicate Thessaly's population distribution of workplace sizes in the Employment Observatory Research-Informatics (PAEP 2004) survey as shown in Table 2.

[Table 2 near here]

Details of the sample by workplace size are given in Table 2. The first three columns show the sample achieved, together with the percentage of temporary workers, and the final column shows the population distribution of workplaces. As the final column shows, the large majority of private sector workplaces in Thessaly's population of firms (and in Greece generally – see Table 1) are very small, 97% being under 10 employees in size. (However, obviously these larger firms are vital since that about 40% of the workforce – see Table 1.) We also see a tendency for larger workplaces to employ a higher proportion of temporary contract workers, which shows the importance of controlling for workplace size, as we do.

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[11] The questionnaire is available in English and in Greek at http://teilar.gr/dbData/ErErgo/TERS_FFE.rar)

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5. Methods and measures

<u>Temporary work</u>. Our measure of temporary work includes the different temporary contract types shown in Table 3. As noted above, these types bear different relationships to a business, but none has security of tenure, and all – with time – have the potential of being switched into and out of the core as our theory requires. Thus, it makes sense to take them together, though we provide sensitivity tests for alternative definitions.

Table 3 shows average numbers in the various categories, and also percentages for the small workplaces employing less than 10 (approximately our sample median) and the larger workplaces. The first point to note is that we have no temporary agency work contracts since agencies were effectively banned at the time of our survey, as noted above. This said, temporary contract types are important, particularly in larger workplaces where they average 18.3% of the workforce, compared to 10.5% in smaller workplaces - a pattern generally in line with the literature[12]). Larger workplaces also have a different pattern of temporary work, with the fixed term contract being most prevalent. On the other hand, for smaller workplaces, fixed term contracts appear relatively unimportant, and most weight is placed on seasonal work contracts, and also use of subsidised workers.[13] The different temporary work patterns for large and small workplaces are largely a result of their different industrial sectors, with restaurants (and hence seasonal work) in the small-firm sector, and more manufacturing (and fixed term contracts) in the larger. The different sectors evidently have characteristic temporary worker types – which is a topic for future research. For our present purpose, they show the need to control for workplace size in testing our hypotheses, and also to run separate analyses for the small and large workplaces, which we will do. Overall, temporary work contracts can be seen to absorb a large segment of the Greek workforce, higher than the US for example, where recent comparable figures are only around 5% (Cappelli and Keller 2013, Table 2).

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[12] Cappelli and Kessel (2013) find strong size effects for the US, as does Houseman (2001) – but Davis-Blake and Uzzi (1993) do not. As for Greece, while Voudouris (2004) does not report size effects due to lack of size variation in her sample, Kufidu and Mihail's (1999) study of large companies (over 200 workers) shows a high proportion, 80%, used fixed term contracts, indicating a size effect..

[13] Typically, the subsidy is based on the employer share of social security contributions being paid on behalf of young workers by the public employment service (see, e.g. OECD 2005). Social security contributions are high, amounting to over 30% of gross pay, of which the employer pays about two-thirds (OECD 2005, p.103), giving a reduction in labour costs of 15-20%.

[Table 3 near here]

<u>The tobit method</u>. As Table 2 shows, even on our broad definition only one-third of the workplaces in our sample use temporary workers - though such workers are important when used, comprising 41% of the workplace's employees on average. To circumvent this "censoring" problem, estimation is carried out by means of a tobit procedure using Stata (Cameron and Trivedi 2009 review the Stata procedures; see Batt 2002 for an application). The tobit model can be summarised as follows:

$$temp^*_i = \beta_1 EPL_i + \beta_2 W_i + \gamma' \textbf{controls}_i + \varepsilon_i, \text{ and} \tag{1}$$

$$temp_i = temp^*_i \text{ if } temp^*_i > 0, \text{ or } temp_i = 0 \text{ if } temp^*_i <= 0,$$

where $temp_i$ is the percentage of workers on temporary contracts observed in the i-th workplace, while $temp^*_i$ is "latent", and ε_i is an iid $N(0, \sigma^2)$ error term. $EPL_i = 1$ denotes that EPL binds in the i-th workplace in some sense as described below, $W_i = 1$ denotes that the wage floor binds, and there is a vector of $\textbf{controls}_i$ as well. According to Hypothesis 1, EPL raises $temp^*_i$, so in this case we would expect $\beta_1 > 0$. Also, according to Hypothesis 2, W raises $temp^*_i$, so we would expect $\beta_2 > 0$. Since it is possible that the two constraints binding together have an additional effect, we could also experiment with a cross-product $EPL_i \times W_i$ in the equation, and a positive coefficient here would support both Hypotheses – though in practice we never found this effect to be important.

The tobit model's $\boldsymbol{\beta}$ coefficients need interpretation. First, a positive $\boldsymbol{\beta}$ for a variable means that the variable increases the percentage of workers employed on temporary contracts given that any are employed. The $\boldsymbol{\beta}$ coefficients need to be multiplied in our case by about one-third, the proportion of non-zero observations in the full sample, to show this effect. Second, the positive $\boldsymbol{\beta}$ also means the variable increases the likelihood that any workers will be employed on temporary contracts. While statistical software (see Baum 2006) is needed to calculate these separate effects, the sign of $\boldsymbol{\beta}$ shows their direction.[14].

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[14] It should also be noted that, the model is estimated by maximum likelihood, which is inconsistent if the normality assumption for the error is not in fact correct (Vincent 2010). We therefore use robust standard errors.

EPL measures. As regards Hypothesis 1, that EPL constraints raise $temp_i$, testing requires that we develop measures of these constraints. As noted above, we survey manager opinion (following WEF 2010), and so derive three workplace-specific indicators for perceptions of EPL within a workplace. The questions are shown in Tables 4 and 5. The first was a dummy for whether a manager agrees that hiring and firing laws (i.e., EPL) are an obstacle to employing more people (this question is used in the European Union's original survey of EPL – see Emerson 1988). An affirmative answer (dummy = 1) should signify a feeling of pressure from EPL (the indicator correlates positively with preferring to employ temporary contract workers because they are easier to dismiss, 0.187, see Table 7). It should therefore link positively with employment of workers on temporary contracts in that workplace. The second indicator was a dummy simply for whether the manager prefers workers to be placed on temporary contracts because they are easier to dismiss. An affirmative answer (dummy = 1) should directly pick up whether the manager feels that temporary contract workers are necessary to provide the flexibility that regular worker EPL denies. Again, we have a test for Hypothesis 1.

[Table 4 near here]

The third EPL indicator we developed from the question, shown in Table 5, on whether the manager had taken professional employment relations advice[15] on labour contract issues, that is, dismissals, discipline or renewal of contracts. If advice on any of these issues had been sought we set a dummy = 1. Seeking such advice might indicate that the manager feels greater constraints from EPL, and provide a test of Hypothesis 1. Admittedly, the simple correlation of this indicator is negative, -0.181, with the indicator for EPL based on the manager's preference for temporary contract workers because they are easier to dismiss (see Table 7). Still, this third variable is worth including because it shows the manager's real legal needs, and might have a role to play in a multiple regression.

[Table 5 near here]

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[15] Here we follow the Workplace Employment Relations Survey question on "whether you have sought information or advice on employment relations issues" from, e.g. external lawyers, external accounts or other professional bodies such as employers' associations or government Small Business Service.

Finally, it is necessary to control for temporary worker EPL, given Greece's strict legal restrictions outlined above. Our indicator (similar to Mihail 2003) is based on whether a workplace manager sees the Labour Inspectorate as strictly enforcing the restrictions, by not easily giving permission to employ temporary workers (final row of Table 4). In other words, if this dummy = 1, there is protection for temporary workers in the manager's judgement, so resulting in less employment of workers on temporary contracts.

Wage floor measures. To test Hypothesis 2, that wage floor constraints raise temporary work, we developed two wage variables. First, we formed a dummy for whether the workplace paid a majority at (or below) the gross minimum wage of €11,000 as set by the national wage agreement. The survey question underlying this variable is based on the UK Workplace Employment Relations Survey (2005), as shown in Table 6. As noted above, for reasons of confidentiality we could not ask directly whether the workplace paid below the minimum, and so the bottom of the distribution is truncated. In fact, Table 6 shows a surprisingly large percentage, 64% of workers in small workplaces are paid at the national minimum[16] (and hence many are likely to be paid less). Here we see concretely (Mihail 2004: 550) "the ability of Greek SMEs not to comply with labour law regulations". Nevertheless, even if the minimum wage floor is avoided in low productivity workplaces, as noted above it is still possible that management will be worried about detection, and react with extra temporary hiring in accordance with Hypothesis 2.

[Table 6 near here]

A further wage floor variable can be constructed (again following the Workplace Employment Relations Survey 2005), based on whether a manager states that pay in his/her workplace is determined by the national wage agreement. We found that managers in small workplaces stated on average that only 60% of their workers were paid according to national and sectoral agreements. "Individual" agreements, possibly (illegally) circumventing the national minimum, accounted for most of the remainder. However, for larger workplaces, the national and sectoral

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[16] These figures are higher than official estimates (Koutsogeorgopolou 1994, p88) of 15-20%, in part because we use a gross minimum adding on 16% to cover employee social security contributions, rather than a net minimum. In fact, international comparisons (Dolton and Bondiabene 2012) show Greece's wage minimum to be among the highest in the OECD.

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agreements were more important, with 90% paid according to national agreements, indicating closer adherence to the law. From these data, we formed a dummy variable indicating whether the national or sectoral agreements determined pay for a majority of workers. In the Greek environment, if this dummy = 1, it should also indicate the higher paying workplace that is better able to pay nationally agreed wages, and more. (Note that low paying workplaces are less likely to pay according to the national agreement as Table 7's negative simple correlation, -0.144, between these variables shows.) This type of workplace is therefore not close to its wage floor and should (Hypothesis 2) accordingly employ fewer temporary workers.

The controls. The controls are important since our two hypotheses about the effects of EPL and wage floors can only hold when the other factors determining temporary employment are allowed for. The controls are most easily discussed in terms of Table 7 which gives the means and correlations of the main variables and indicators.

[Table 7 near here]

In setting up our controls, we follow mainly the classic Abraham and Taylor (1996) specification. In the first place, we require controls for variability of demand, which as discussed above increases the use of temporary workers. Here we rely on the fact that some industries such as hotels and restaurants face large changes both annually and weekly which require a buffer. Hence, we include a set of industry dummies. Hires and redundancies over the period (row 10 only shows hires but we also include redundancies) might also indicate demand variability. Similar controls for longer term variability (for which we control but do not list), 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 temporary workers is low, so a business with high training requirements should employ fewer such workers. Training requirements can be picked up by variables for the use of part-timers, and young and old workers (again included but not shown in Table 7), all of whom are likely to be in jobs requiring less training and so indicate a business for

whom temps may be more suitable. The old worker variable could also indicate task/monitoring complexity and be negatively associated with the demand for temporary work contracts.

At the same time, some of these groups, particularly part-timers, are to some extent substitutes for temporary workers and family workers, which could give rise to a negative link with temporary workers. Low paid workers are also likely to have less training, which gives an additional reason for the majority low-paid dummy (row 7) linking positively (correlation 0.185 in the 7th row) with temporary workers.

A further interesting control is the manager's assessment of workers' commitment at the workplace (see row 11) which could link to the demand for temporary workers in two ways. First, a committed workforce is likely to signify a business with more complex tasks (needing worker commitment) which will be less suited to temporary work contracts. Indeed, Table 7 shows a strong negative simple correlation (-0.277) between this variable and the percent of temporary work contracts. Second, superior managers may themselves be able to engender commitment. Such management will in turn mean greater firm productivity and higher pay. Superior management then links in turn to less temporary employment via Hypothesis 2, namely that higher paying firms are further from the wage floor with more flexibility and less need to use temporary work contracts.

Finally, we control for firm size (row 12). This control is standard, though there are arguments both for and against large firms externalising work. On the one hand, larger firms are likely to face a greater variety of problems, and thus may need more solutions, of which temporary work contracts could be one. Larger firms' compliance with EPL and wage floors may also be monitored more strictly, thereby also prompting a move towards more temporary work contracts. On the other hand, larger firms can easily more cover for absences, and are also more likely to have unions and government contracts (see Davis-Blake and Uzzi, 1993) which could work against externalising work.

Continuing on the theme of firm size, differences between the means of small and large firms are shown in the means column of Table 7. Means for small

workplaces are shown above, and for large in square brackets below. Proceeding down the rows, first we see that small workplaces have lower percentages of temporary contract workers, as already noted. As for the EPL variables, we see that larger firms are more likely (18% vs. 10%) to prefer temporary contract workers because they are easier to dismiss which might indicate higher regulatory pressures on the more visible firms. Both size types agree that EPL reduces employment (about 50% each, in row 4). However, the larger firms are more likely to take contractual (discipline and dismissals) advice as well as wages and tax advice, as might be expected. As regards whether the labour inspector is an obstacle for employment of workers on temporary contracts, in this case the small firms appears more concerned (23% vs. 10%), perhaps because they lack the scale to build up the expertise, and can less afford legal advice.

Moving on to the minimum wage variables, we see a far higher proportion of small firms are low paying (55% vs 19), as might be expected. Also, a smaller proportion of small firms adhere to the national or sectoral agreements, again suggesting they cannot afford these. As for the other variables, we show in row 9 a tax variable [17]which shows that both groups believe that employer taxes reduce employment, but this belief is more prevalent (51% strongly agreeing) among the hard-pressed small firm group. As for hires, these are much more likely to have been made among larger firms, as expected. Finally, as for manager beliefs about worker commitment, these are very positive (about 75%) for both groups. Overall then, we see good grounds for distinguishing between small and large firms, and will do so below.

6. Results

We now present the regression results, starting with basic results in Table 8, then giving sensitivity tests in Table 9. We concentrate on unweighted results, where the tobit model passes the tests for normality and homoskedasticity[18]. In fact, Cameron and Trivedi (2010, p113) advise that so long as the model has sufficient controls,

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[17] Greece has high social security tax rates, as noted above. We collected manager views on whether such high NI taxes were an obstacle to employment in the manager's view. However, though most agreed that taxes were high as Table 8 shows, in our regressions the tax variable never had much effect.

[18] Vincent (2010) proposes a test of the tobit assumptions of normality and heteroscedasticity, which is available in Stata..

and in particular includes determinants of the sampling frame, the most efficient estimator does not use weights. Our survey over-samples larger workplaces, as discussed, and all the regressions control for workplace size, so it is reasonable to use unweighted regressions. However, for completeness, we also report a model below (Table 9) with weighted results, which are not substantively different.

Basic results. We start with parsimonious results. Column (1) gives a model with only the controls, to give an idea of how a basic model behaves. The significant controls are the industry dummies (not shown individually), the hiring rate, and workplace size. Increases in the hiring rate and in workplace size can indicate both increased variation in demand, and perhaps also more variability of tasks, so it is reasonable that the prevalence of temporary work contracts increases. Part-time work enters negatively, indicating substitutability of part-time and temporary work, which is plausible – though a similar substitutability with family work is surprisingly not exhibited. Also the workforce's commitment is not negatively linked with temporary employment, so the strong simple correlation (Table 7), does not survive. In the bottom panel, the McFadden pseudo-R^2 gives 0.123 of variation explained which is acceptable.

[Table 8 near here]

We now discuss the EPL and wage floor indicators. Column (2) includes only these indicators. Here we see that some EPL indicators by themselves have significant and large effects discussed in more detail below. The wage indicators are weaker, but are important in some specifications in the later columns. In this simple model, the explanatory power of the seven EPL and wage indicators as shown is 0.059, which is lower than the controls in column (1), but it must be remembered that this column has more controls, which include 9 industry dummies.

Moving to the full model in column (3), the first EPL indicator is based on whether the workplace's manager prefers hiring workers on temporary contracts because they are easier to dismiss (i.e., are not covered by regular EPL). Column (3)'s coefficient, 0.41, shows that comparing a workplace whose manager takes such a position (dummy = 1), to one whose manager does not (= 0), the percentage

temporary increases by 13 (=0.39×33) percentage points amongst workplaces employing temporary workers. (For this "uncensored" group we multiply the tobit coefficient by approximately one-third, as discussed.) To this effect, we should also add an increase in the probability of workplaces employing temporary workers in the first place, which we can calculate as 29 percentage points. Thus, managers' concern about ease of dismissal goes together with more temporary employment, which is in line with Hypothesis 1.

Considering the other EPL indicators, the second row gives effects for the dummy for whether the manager feels regular worker EPL reduces employment. We have argued above (Table 4) that this indicator should link to concerns about regular EPL and hence cause higher temporary employment in accordance with Hypothesis 1. However, this indicator has a negative coefficient (though insignificant) in the column (2), contrary to this hypothesis. Nevertheless, this indicator behaves differently for small and large firms (see columns 4 and 5) as we will discuss. This said, we see that the third row's EPL indicator for the manager taking professional dismisals/discipline advice links well to prevalence of temporary work contractst. Since the taking of this particular form of advice should indicate that EPL is imposing a constraint on the workplace, this finding is therefore in line with Hypothesis 1. On the other hand, the other advice variable, for whether the manager takes wage or tax advice works in the opposite direction (-0.21). One interpretation is that this variable is picking up the wealth of the company (Table 7 shows that it links significantly with hiring, and with being high paying). In this case the variable helps our Hypothesis 2, that richer, high wage companies have less need to resort to temporary work contracts.

The fifth row shows the result for our control for temporary worker EPL. We see that this indicator, based on whether managers believe the labour inspector is an obstacle to employment on temporary work contracts is negative as expected. Admittedly, the effect is weak in column 3, but gains strength in later columns, particularly for larger firms, which may be targets of enforcement efforts. Overall, there is some confirmation here that our indicator variables, which are based on manager views, correspond with manager actions in the expected direction, which is encouraging.

As for the wage floor variables, we see these gain significance when other controls are added in column 3. Our first wage floor variable indicates whether a workplace's average pay equals (in fact may be below) the gross annual minimum wage of €11,000. Such closeness to the minimum wage floor should have a positive effect on the proportion of workers on temporary contracts. We see a significant coefficient of 0.20, but there is again evidence in columns 4 and 5 that this effect is stronger for the micro firms, more of whom are at the minimum wage floor.

Results for our second wage floor variable, on collective bargaining coverage, are shown in the next row. We see that in workplaces where a higher percentage of workers are paid according to the national or sectoral wage agreements the proportion of workers on temporary contracts decreases. The effect is similar in size, but opposite to the low paying workplace variable. As noted above, this result makes sense in the Greek environment where high coverage is found in better paying workplaces that can more easily afford to abide by the national wage agreements, and is also consistent with Hypothesis 2 on wage inflexibility.

In columns (4) and (5) we contrast the coefficients for small and large firms. The final column gives the results of tests for whether these groups are significantly different. Significant differences appear for the first two EPL variables. We see that small firms are much more responsive (1.00 vs. -0.02) to managers' perceptions about easier dismissal of temporary contract workers. We have already seen that managers of the small firms are more likely to have this perception (Table 4's means show 18% vs. 9%), so the result makes sense. However, the second EPL variable is more difficult to understand. While the variable has the expected positive sign for larger firms, 0.21, indicating that the concern over EPL which this variable is meant to capture increases hiring of temporary contract workers, it has a significant negative effect (-0.27) for the small firms, whose managers are almost equally concerned (Table 4). This said, at least the third EPL variable, taking professional advice over discipline and dismissal matters, is significant and positive, 0.28 and 0.30, for both groups. The other advice variable, on wage and tax matters, is also negative for both groups, though more so for the micro group. Finally, the

variable for whether the labour inspector is perceived as enforcing temporary worker restrictions has the expected negative sign, significant for the larger workplaces, -0.37, which is consistent with them being monitored more closely.

As for the minimum wage variables, we see that these appear more important for the small firms whose pay is generally lower. Thus, being a low-wage small establishment attracts a coefficient of 0.18, compared with only 0.08 for the larger group. In fact, in a regression (not shown) without the wage and tax advice variable, the wage floor variable becomes larger and significant for the micro group, suggesting that small workplaces able to afford such advice are wealthier, and this less in need of the temporary worker buffer, in line with Hypothesis 2. We also see that abiding by the national agreement has more impact, --0.22 vs -0.00, for the small firms, again perhaps because they are generally lower paying.

Sensitivity tests. The results of four tests are shown in Table 9. In the first column we show results for a weighted specification. As noted, while the weighted specifications might be more representative, they fail the test for normality so need to be taken cautiously. Since the weighting is designed to increase the importance of smaller workplaces, the results for the weighted model are more like Table 8's column (5). The most important variables are the manager's perception that workers on temporary contracts are easier to dismiss, whether the manager takes advice on wages or taxes, and whether the workplace is low-paying. There is nothing substantively different in these results except the stronger positive effect of the low-paying workplace variable.

[Table 9 near here]

In the second column we modify the dependent variable to consider only hires - taking temporary worker hires as a percentage of total hires - since hires are important for the future composition of the workforce. The pattern is generally similar to that for the temporary percentage as a whole, with the minimum wage variables more prominent.

Finally, in the third and fourth columns we display results for a specification that excludes workers on seasonal contracts. As noted above, the seasonal

component of a firm's employment mix might be more difficult to change ("technologically determined"), and so it is worth analysing the remaining, more flexible, component separately. Here, we also break down the results by small and large workplaces, remembering that the seasonal component is more important for small workplaces (Table 3). We now see that for both workplace size types, the EPL variables remain important for the reduced group of non-seasonal temporary contracts. In particular, those managers in small workplaces who prefer temporary contracts because dismissal is easier are much more likely to hire on a temporary basis (1.0[19]). Interestingly, we now have stronger results for the variable indicating the labour inspector is an obstacle to temporary work, -0.37 for both micro and larger workplaces. This stronger result for the non-seasonal temporary contract group suggests that the labour inspector is more likely to object to non-seasonal temporary work, perhaps since it has less of an "objective" justification, which is plausible. The minimum wage variables now are less important, suggesting that they work mainly via influencing seasonal work. In other words, we have a warning that the low-pay factor might simply be picking up the fact that low-pay workplaces are more seasonal (even though we are controlling for service industries, which should control for this factor). On the other hand, we see that the variable for taking wage or tax advice (which we interpreting as a type of high-paying workplace effect) remains negative and significant for the micro group. Hence, Hypothesis 2, on how high-paying workplaces need temporary contracts less retains relevance.

Magnitude of effects. The tobit model's coefficients show how a variable affects both the proportion of workplaces employing any temporary contract workers (about one-third in our sample), and the percentage of temporary contract workers given that any are employed (about 40%). While the double effect is complicated, interpretation is simplified when we remember that both effects follow the coefficient, that is, are positive if the coefficient is positive, and conversely. The issue then becomes whether the movements are economically important.

Calculations indeed suggest important movements in the temporary-permanent contract mix if the EPL and minimum wage variables change. Our

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[19] The large coefficient implies smaller marginal effects when we allow for the fact that only 20% of small firms have workers on non-seasonal temporary contracts. Moving from 0 to 1 for the dummy implies an increase of 12 points in the percentage of temporary contract workers, assuming any are employed, and an increase of about 20 points in the probability that any are employed.

largest coefficients are generally associated with the EPL variable based on whether the manager feels temporary workers are preferable because they are easier to dismiss. We have already seen that changing this variable from 0 to 1 (i.e., changing EPL from non-binding to binding) increases the percentage of workers on temporary contracts given that any are employed by about 13 points (using equation 3 in Table 8). Further calculations show that the probability of any firms using temporary contracts would increase by about twice this amount. Of course, such a change in the effect of EPL is unlikely ever to be widespread, since only a small minority of managers (10%, see Table 4) prefer temporary contract workers because they are easier to dismiss. Still, the calculation shows that managers' opinions about EPL can have marked effects on their HRM decisions.

Minimum wage effects are smaller. The main minimum wage floor variable in Table 8's equation 3 implies that a minimum wage binding establishment has a 6 point ($=0.20{\times}33$) higher prevalence of temporary work contracts, given any such contracts – and also a higher probability (about 15 percentage points) of having these contracts. Still, while this effect is smaller, it is more likely, since many workplaces are subject to the minimum wage, as we have seen.

7. Conclusions

Greece has typical Mediterranean high wage and working conditions floors, though with widespread avoidance. Yet, even floors which are avoided may cause anxiety and so chill management decisions and encourage precarious temporary employment contracts. The purpose of this paper is to go to the micro level, using a survey of businesses in Thessaly to assess how Greece's exceptional labour regulation affects firm decisions over the temporary-permanent contract mix. Essentially, we use Thessaly as a case study, and fortunately at the time we conducted our survey there was no question of recessionary conditions affecting the results.

Our two hypotheses are that temporary employment increases among workplaces, first, that are more constrained by regular worker EPL, and second, that are more constrained by a high (though porous) minimum wage floor - always controlling for other factors. To test these hypotheses, we develop workplace-

specific indicators of the pressures of these constraints. Our EPL indicators are based on manager judgements and actions such as whether the manager has recently taken professional advice over discipline or dismissal matters, and, in the case of wage floors, on information about wages paid in the workplace. Though these measures have to be reduced to simple zero-one dummies, in particular because of sparse wage information for workplaces in the Greek "grey" market, the results are generally consistent with our hypotheses. Indicators of both EPL and wage floor constraints are linked with significant upward shifts of temporary contract work in the employment mix, and movements that are economically important. . Hence it appears that Greek labour regulation, though doubtless avoided to some extent in many workplaces, does have a perceptible chilling effect on employment decisions; it is far from "obsolete".

In sum, our results support the view stated at the outset, namely, that a firm's strategic HRM decisions regarding internal versus external allocation of tasks is influenced by labour regulation. Our Thessally survey then provides another finding (following Olsen and Kelleberg 2004, and Heywood et al 2011) of temporary workers being used as a buffer. Indeed, for most Greek workers even at the time of our survey, in pre-recessionary 2006, the temporary job market was probably not really much of a stepping-stone to something better, but rather a long-term condition required if their employers were to survive. Furthermore, it is worth noting that our findings which come from a workplace-level database support Kahn's (2007) result that EPL increases the prevalence of temporary work contracts based on his quite different database – aggregate cross-country data. Kugler et al (2002) also find that a Spanish reform lowering dismissal costs for permanent contracts (i.e. EPL) shifted employment of young workers from temporary to permanent contracts. That these different approaches reach a similar result builds confidence.

Our results also have policy implications, in that they support the controversial relaxation (OECD 2011a) of minimum wages and EPL that has occurred in Greece since our survey. This relaxation has been controversial, with Greece's deputy labour minister resigning (Financial Times 2012). In particular, after consultation with the IMF and EU, the minimum rate set by the National General Collective Agreement was reduced by 22% in January 2012 (see the

LABREF database - European Commission 2014), and a youth sub-minimum (under 25s) adopted which was 32% lower. Also in 2011, extension of centrally negotiated collective agreements was suspended and "special firm-level agreements" with lower wages permitted. As regards regular worker EPL, severance payments and notice periods have been reduced, and the probationary period during which there is no right to dismissal compensation has been increased from 2 months to one year. As regards temporary worker EPL, in 2011 the maximum cumulated duration of fixed term contracts was increased from two years to three, and the permitted circumstances in which they could be renewed was widened. Also, at long last in 2012, the onerous Temporary Work Agency regulations were relaxed including the requirement for capital of €176,000 (see LABREF – European Commission 2014). Thus agency work contracts might now grow. The faster, better matching possible with agencies is likely to lead to a smoother transition from temporary to permanent jobs. Thus, paradoxically, making temporary contracting easier could reduce its prevalence.

Militating against these moves, however, the Labour Inspectorate is to be strengthened, and the electronic "labour card" (OECD 2014) concept is being reinforced to record each worker's hours (and enable contracts to be more easily enforced and taxed). A strengthening of the Inspectorate might help raise taxes, but business HRM policy will also be affected, as we have shown.

Some caveats are in order, since our findings are based on a first attempt to include micro firms in a large-scale firm survey in Greece. Our 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. Moreover, better "indicators" of the pressures of EPL could no doubt be devised. This said, the Thessaly survey results indeed imply that Greece's system of labour regulation shifts firms' personnel decisions in the direction of externalizing work.

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Table 1: Comparative Statistics on Greek Labour Conditions and Regulation, mid-2000s

A. Labour market conditions

Measure	Greece	OECD average	Notes and Sources
Temporary worker, % workforce aged 25-54 [% of unskilled workers]	10.5% [22.6] {29.3}	9.3 [15.3] (18.3)	OECD Statistics, (2000-06 average) – includes fixed term contracts, training contracts, seasonal workers, and agency workers [unskilled occupations only – OECD 2002 Table 3.3] {unskilled occupations, 2011 – OECD 2014b Fig 4.8}
Unemployment rate, youth 20-24	25.4%	13.6	OECD Statistics (2000-06 average)
Long-term unemployment as % of total unemp.	56.6%	33.6	OECD Statistics, (2000-06 average).
% firms employing <10	97% [58]	85 [25]	OECD (2011b; 2007 figure) [% of employment in firms<10]

B. Measures of business regulatory environment

Measure	Greece	OECD average	Notes and Sources
World Bank, Ease of doing business, rank 1-183	109	21	WB (2007). Index based on scoring laws[a] on the regulatory environment for business, with 10 indicator variable sets from 183 countries 1=least restrictive; 183=most
Minimum wage 2007, ratio to full-time median earnings	49%	41%	Low Pay Commission (2007, Table A4.2). Note a 22% cut in the minimum in 2012, plus establishment of a youth subminimum 10% lower
OECD employment protection law EPL index, regular employment, score 0-4	2.80	2.12	OECD Statistics (2000-06 average) Index based on scoring laws protecting workers against dismissal with 9 indicator variables including length of notice period, amount of severance pay, and procedural inconveniences. 0=least restrictive; 6=most
OECD restrictions on temporary employment index, score 0-4	3.89	1.54	OECD Statistics (2000-06 average) Index based on scoring laws regulating temporary employment with 8 indicator variables including restrictions on temp contracts to "objective" temp work, on the number of renewals, and on the setting up of temp work agencies which until recently have been banned in Greece. 0=least restrictive; 6=most
World Economic Forum, Hiring and firing practices, score 1-7	2.9	3.6	WEF (2008). Executive opinion survey: How would you characterise the hiring and firing of workers in your country? 1=impeded by regulations; 7=flexibly determined by employers (Table 7.04)

Note: [a]The laws cover 10 business areas including starting a business, dealing with licenses, employing workers, registering property, getting credit, tax rates, protecting investors, enforcing contracts and closing a business . Laws in each of these areas are assessed by local experts in relation to a standard case study.

Table 2: Distribution of the Survey Sample by Workplace Size

How many employees are there in this workplace?	Sample			Weighted base %
	Number	%	% temp workers	
1-5	60	32	11	87
6-10	50	27	15	10
11-19	33	17	14	1
20-49	34	19	16	1
50-99	3	2	1	0.5
100+	6	3	29	0.5
Total	186	100%	14%	100%

Source: Sample figures are from the Thessaly Employment Relations Survey.
Notes: The weighted base is calculated from the distribution of Thessaly workplaces with personnel as given in the Employment Observatory Research - Informatics (PAEP, 2003) survey. The Thessaly survey's oversampling of larger workplaces is seen since workplaces of size 20+ form 22% of the sample but only 2% of the provincial population.

Table 3: Prevalence of temporary workers, by contract type

Temporary contract type	Number employed per workplace	Percentage of average workplace employment	
		Small, < 10	10 and over
Fixed term contract	0.5	0.4%	9.4%
Seasonal contract	0.7	4.9	2.4
Temporary agency worker	0.0	0.0	0.0
Temporary subcontracting	0.4	0.9	3.3
Workers subsidised by Public Employment Service	0.6	4.1	0.4
Trainee contract	0.1	0.1	2.5
Total temporary contracts	2.3 people	10.5%	18.3%

Memo 1: 33% of the sample of workplaces employ any temporary workers, who make up 14% of the sample workforce (Table 2), and in workplaces employing any, on average make up 41% of the workforce.
Memo 2: temporary workers make up about 12% of new hires.

Notes: Survey weights are used to calculate all percentages - see Table 1.
Managers answered questions about numbers employed on a temporary basis (as seasonal, or fixed term or subcontracting workers), as trainees, as employees paid by Public Employment Service programmes, and as Temporary Work Agency employees.

Table 4: Employment Protection
(Percent of Workplaces)

	Small, < 10	10 and over
Hiring/firing laws (EPL) are an obstacle to employing more people (% managers strongly agreeing or agreeing)	55	47
Temp workers are to be preferred because they are easier to dismiss (less EPL) (% managers strongly agreeing or agreeing)	9	18
Labour Inspector does not easily give permission to employ temps (temp worker EPL) (% managers strongly agreeing or agreeing)	23	10
Sample numbers	99	89

Notes: Survey weights have been used to calculate the percentages - see Table 1.
Rows are derived from questions of the form "I would like to find your views on aspects of labour regulation…", scored on a likert scale ranging, 1=strongly agree, 2=agree, …, 5=strongly disagree

Table 5: Important Employee Relations Issues
(Percent of Workplaces)

Employee relations issues for which professional advice† sought over the past 24 months	Small, < 10	10 and over
Disciplinary action	8%	26%
Dismissals or redundancy (e.g., compensation or reinstatement)	24	47
Fixed term contracts (e.g., new contracts or contract renewals)	23	41
Total with any advice on the above	38	72

Notes: Survey weights are used to calculate all percentages. † Managers chose from a list including the Labour Inspectorate, Public Employent Service, Social Insurance Institute, Employers Association, Accountants or Lawyers – the last two being the most frequent

Table 6: Wage Distribution of Employees

	Gross wage categories (in 2006 Euros per year)	Small, < 10	10 and over
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 high-paying workplaces, with average pay index above €11,000		41	79

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.
†† Index calculated using midpoints of categories, with 11,000 (33000) for bottom (top) cetagory.

Table 7: Means and Correlations of the Main Variables

Variables	Means, small [larger]	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1) Percent workers temporary in workplace incl. fixed term, seasonal and agency	10% [18]*	1.000										
2) Manager feels temps preferable because easier to dismiss, 1=strongly agree/agree	0.10 [0.18]*	0.246***	1.000									
3) Manager feels EPL reduces employment, 1=strongly agree/agree	0.55 [0.47]	-0.067	0.187***	1.000								
4) Manager takes dismissals or discipline advice in last 2 yrs, 1=yes	0.38 [0.72]***	-0.016	-0.181**	0.038	1.000							
5) Manager takes wage or NI tax. advice in last 2 yrs, 1=yes	0.50 [0.70***]	-0.180**	-0.077	-0.040	0.520***	1.000						
6) Manager feels LI an obstacle for temp employment, 1=strongly agree/agree	0.23 [0.10]**	-0.030	0.182**	0.196***	-0.189***	-0.154**	1.000					
7) Low pay establishment with annual wage index=€11,000	0.55 [0.19]***	0.185***	0.133*	0.070	0.009	-0.182**	0.222***	1.000				
8) Percent covered by national or sectoral wage agreement	0.58 [0.86]***	-0.070	-.020	0.090	0.078	0.092	-0.065	-0.144**	1.000			
9) Employer NI taxes a problem for employment, 1=strongly agree	0.51 [0.35]**	0.078	0.188***	0.147**	-0.058	-0.055	0.167**	0.209***	0.053*	1.000		
10) Any hires in last 2 yrs, 1=yes	0.49*** [0.91]	0.077	-0.250***	-0.095	0.351***	0.216***	-0.091	-0.144**	0.212***-	0.010	1.000	
11) Manager considers workers quite or very committed, 1=yes	0.76 [0.73]	-0.277***	-0.183**	-0.073	-0.215***	-0.096	0.121*	-0.090	-0.286***	-0.031	-0.188***	1.000
12) Number of employees	4 [21]	0.028	-0.001	-0.039	0.072	0.052	-0.058	-0.106	0.088	0.050	0.131*	-0.052

Notes: Survey weights are used to calculate all statistics. ***, **, * signify 1%, 5%, and 10% significance levels. In the column of means, significance levels are for the comparison of means for small workplaces (< 10 employees) versus larger.

Table 8: Regressions for Temporary Worker Employment

Dependent variable: Percent of temporary workers employed at the workplace
(includes fixed-term, seasonal work, temporary subcontracting plus trainees and subsidised workers, see Table 2).

Independent variable	Unweighted Coefficients					
	(1)	(2)	(3)	(4)	(5)	
				10 and over	small (<10)	Differ-ence
1) dummy for manager feels temps preferable because easier to dismiss		0.32^{**}	0.39^{***}	-0.02	1.00^{***}	***
2) dummy for manager feels EPL reduces employment		-0.15	-0.10	0.21^{**}	-0.27^{*}	**
3) dummy for manager takes dismissals/discipline advice in last 2 yrs		0.27^{***}	0.24^{**}	0.28^{**}	0.30^{**}	insig
4) dummy for manager takes wage or NI tax. advice in last 2 yrs		-0.18	-0.23^{**}	-0.06	-0.49^{***}	**
5) dummy for manager feels labour inspector an obstacle for temps		-0.22	-0.14	-0.37^{**}	-0.36	**
6) dummy for low wage estab. (av. wage <= €11,000/yr)		0.10	0.20^{**}	0.08	0.18	insig
7) proportion covered by national or sectoral wage agreement		-0.15	-0.21^{**}	0.00	-0.22	insig
dummy for manager considers workers quite or very committed	0.02		0.02**	0.03	0.01	insig
dummy for any family employees	-0.04		-0.09	0.01	-0.06	insig
dummy for any part-time workers	-0.18		-0.19^{*}	-0.24^{**}	-0.33^{*}	insig
dummy for any hires in last 2 yrs	0.28^{**}		0.33^{**}	0.23	0.51^{***}	insig
number workers employed x 10	0.02^{***}		0.02^{**}	0.03^{***}	-0.03	insig
McFadden† pseudo R^2	0.123	0.059	0.225	0.613	0.376	
F test of joint significance	2.11^{***}	1.88^{*}	3.31^{***}	7.52^{***}	4.88^{**}	
Observations (uncensored)	188 (62)	188 (62)	185 (61)	87 (35)	98 (26)	

Notes: The regression analysis was performed using Stata.
Regressions also control for percent young and old in establishment, non-routine subcontracting, past use of flexible workers, and industry (up to 9 dummies). ***, **, * signify 1%, 5%, and 10% significance levels, using robust standard errors . Tobit coefficients have to be multiplied by the proportion of non-censored observations , approximately one-third (=62/188), to give effects conditional on temp being positive.. .
† pseudo $R^2 = 1 - L_{fit}/L_0$ where L_{fit} is the log likelihood of the fitted model, and L_o is the log likelihood of an intercept-only model;

Table 9: Sensitivity Tests

(Dependent variable: Percent employed on temporary contracts – alternative definitions)

Independent variable	All temps, as Table 8, col (3), weighted	Temps as % of hires, unweighted	Temps excluding seasonal, unweighted	
			10 and over	Small (<10)
1) dummy for manager feels temps preferable because easier to dismiss	0.53[**]	-0.16	-0.13	1.0[***]
2) dummy for manager feels EPL reduces employment	-0.14	-0.45[*]	0.20[*]	-0.35[**].
3) dummy for manager takes dismissals/discipline advice in last 2 yrs	0.09	0.88[***]	0.30[**]	0.26[**]
4) dummy for manager takes wage or NI tax. advice in last 2 yrs	-0.29[**]	-0.60[**]	-0.00	-0.39[***]
5) dummy for manager feels labour inspector an obstacle for temp contracts	-0.08	-0.49	-0.37[**]	-0.37[*]
6) dummy for low pay workplace, average wage <=€11,000 per year	0.32[***]	0.52[**]	0.10	-0.16
7) Proportion covered by national & sectoral wage agreement	-0.20	-0.68[***]	-0.00	-0.13
dummy for manager considers workers quite or very committed	-0.18	-0.26	0.07	-0.11
dummy for any family employees	0.23	-0.33	-0.17	-0.15
dummy for any part-time workers	-0.32[**]	-0.31	-0.24[**]	0.46[**]
dummy for any redundancies in last 2 yrs	0.01	0.01	-0.18	-0.37[*]
dummy for any hires in last 2 yrs	0.26[**]	NA	0.06	0.94[***]
number workers employed	0.01	0.02	0.02[**]	-0.01
Industry dummies	YES	YES	YES	YES
McFadden† pseudo R^2	0.217	0.243	0.438	0.616
F test of joint significance	7.21[***]	5.97[***]	4.39[***]	5.11[***]

Notes: see Table 9