Multiple Job-Holding Among Male Workers in Greece

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Abstract

This paper studies the incidence of multiple job-holding in Greece and contributes to the literature by examining its determinants, its variance across different regions and the effect of the business cycle on its occurrence. The empirical analysis highlights the importance of both pecuniary and non-pecuniary motives behind multiple job-holding, and reveals significant variations in its incidence across regions, with areas that have a large primary sector having higher multiple job-holding rates. Finally, multiple job-holding is found to be pro-cyclical, with the probability of holding a second job estimated to increase during economic expansions.

Keywords: Multiple-job holding, Greece, regions, business cycle

JEL Classification: J22, R23

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1. Introduction

Multiple job-holding is an area of economics that despite having attracted considerable attention over the last decade, still remains relatively under-researched. Holding more than one job is a very common practice in Greece as individuals often need to supplement the income they receive from their first job as wages in Greece are amongst the lowest in the European Union, (EU15)[1]. As BALDWIN-EDWARDS and SAFILLIOS-ROTHSCHILD (1999) note "there is an endemic tendency towards multiple job holding [in Greece]" (p.297). A paradigmatic example is the group of teachers for which taking a second job of private tutoring in a very common practice for supplementing their income (KANTAS and VASSILAKI, 1997). However, there is very little empirical evidence of its occurrence in the Greek labour market[2].

This paper, using data from the Greek Labour Force Survey, aims to contribute to the existing literature in three main ways. First of all, it is the first economic examination of multiple job-holding in Greece. Second, it examines how its incidence and intensity (hours supplied in second job) varies across different regions, which remains a relatively under–explored area within labour economics. Third, it investigates the cyclicality of multiple job-holding focusing on how the business cycle, reflected at the current and lagged levels of regional unemployment, affects its occurrence and intensity. Greece seems to be an interesting case for investigating the above due to large employment and income regional disparities, the structures of the local labour markets, and the demographic composition of the labour force.

The structure of the remainder of the paper is as follows. Section 2 provides a brief review of the available literature on the economics of multiple job-holding. Section 3 presents the regional features of the Greek labour market, and Section 4 discusses the data. Section 5 outlines the empirical strategy and discusses the main empirical results. Finally, Section 6 concludes.

2. Theoretical Considerations of Multiple Job-Holding

Individual motives

Economic theory offers two main motivations for multiple job-holding. These are: hours constraints on the primary job, and heterogeneous jobs. According to the first motivation an individual may face a constraint on the number of hours that she or he can work in the primary job that in turn limits the earnings levels of this job. Thus, since the employer is unable to offer enough hours on the primary job, the individual may choose to start a second job in order to achieve his/her required income level.

According to the second motivation (heterogeneous jobs) individuals may also decide to take up a second job even though they do not face any hours-constraints on their main job. In that case, multiple job-holding may arise because the hours of labour supplied to the two jobs are not perfect substitutes, and thus individuals choose to take up a second job for reasons that are not connected to primary job hours or earnings. These reasons might include: learning about new occupations or gaining training, engaging in activities of interest, gaining job satisfaction not received from the primary job, gaining credentials and experience to acquire a higher paying second job; or maintaining flexible work schedules.

Standard economic theory assumes that an individual's labour supply decisions, on both the primary and secondary jobs, are based on utility-maximising behaviour. An hours-constrained employee works less hours in his/her primary job than the required in order to reach the optimum income level that maximises his/her utility. For the hours-constrained employee, the hours of work in the primary job are no longer a choice, and thus there is no alternative to starting a second job (CONWAY and KIMMEL, 1998).

Early empirical work on multiple job-holding was primarily focused on the hours constrained motivation. The first theoretical and empirical treatment was carried out by SHISKO and ROSTKER (1976) who found that the supply of labour to a second job fell as primary job earnings increased. Similarly, HAMEL (1967) found that the level of a worker's earnings determines the propensity of multiple job-holding and as the level of earnings rises the incidence of multiple job-holding declines. GUTHRIE (1969) investigated moonlighting among teachers in the U.S. and found evidence consistent with the general belief that multiple job-holding serves primarily to improve living standards. Moreover, KRISHNAN (1990) found that longer hours and higher income in the primary job deters multiple job-holding, adding further support to the hours constraints motive for moonlighting.

More recent studies begun to recognise different motives and other issues of interest. For instance, the dynamics of moonlighting were investigated by KIMMEL and CONWAY (2001) for the U.S. and BÖHEIM and TAYLOR (2004) for Great Britain. They argued that these who have more than one jobs due to hours constraint would be expected to have shorter "moonlighting spells" compared to those with a different motives (e.g. those who have heterogeneous jobs). Their study revealed evidence of multiple motives with the constraint motive being the most common. In addition, they also found that

multiple job-holding is persistent over time and concluded that hours constraints is unsatisfactory as an explanation for moonlighting.

PAXSON and SICHERMAN (1996), examined the patterns of mobility into and out of second job and concluded that multiple job-holding is a dynamic process with most workers experiencing it at some point in their working lives, as well as that the hours constraints explanation for moonlighting fails to account for the fact that over time workers can avoid hours constraints by searching for new jobs.

AVERETT (2001) investigated gender differences, but did not find any substantive differences in the factors causing males and females to have multiple jobs. BELL *et al.* (1997), examined the idea that multiple job-holding acts as a "hedge" against unemployment but little evidence was found to support this motive. Finally, KRISHNAN (1990) investigated whether a husband's decision to moonlighting is affected by his wife's decision to work, and concludes that increased labour force participation by wives deters moonlighting.

Finally, PANOS ET AL. (2009) examined the inter-related dynamics of dual job-holding, human capital and occupational choice between primary and secondary jobs. Their analysis suggested that multiple job-holding, in addition to being a temporary response to hours-constraints, increased labour market uncertainty, and financial shocks, contains a permanent labour market element as it appears to be persistent over time. In addition, multiple job-holding is estimated to be an important determinant of job mobility decisions. Dual job-holders are estimated to be more likely to become self-employed or to get a new job, and less likely to become unemployed or inactive, than to remain in the same job. Their evidence also suggested that individuals may be using dual job-holding as

a conduit for obtaining new skills and expertise and as a stepping stone to new careers, particularly ones that involve self-employment.

The regional aspect of multiple job-holding

An area that has been relatively under-researched in the literature is the effect of region of residence on multiple job-holding. There are various theoretical reasons relating region of residence and number of jobs. For instance, less populated areas are often lacking in economies of agglomeration pushing their workers to rely on job alternatives (LEVETAN and FELDMAN 1991). Similarly, lower wages, public spending and demand for labour make multiple job-holding a strategy of vital importance (MILLER 1987). Thus, the distinctive character of regional labour markets constitutes an important factor in explaining dual job-holding. MONK and HODGE (1995) argue that urban and rural areas behave differently due to their distinctive economic structures, such as differences in transportation systems, wage levels, and the propensity for part-time work.

However, the most crucial aspects of regional labour markets are the employment opportunities and options available to workers as well as the efficiency of institutional mechanisms on disseminating job-related information and providing human resource related programs (BRIDDS 1986). In general, rural regions have narrow industrial bases, smaller numbers of employers, and higher levels of self employment (HODGE 2002). Similarly, GREEN (1997) suggests that individuals without higher qualifications are those whose employment is most affected.

These regional and urban-rural differences have important implications regarding the incidence of multiple job-holding. DICKEY and THEODOSSIOU (2006) suggest that dual job-holding is more relevant to self-employed workers as a way of optimising over

the mean and variance of income. Thus, it is worth investigating how the incidence of multiple job-holding varies across regions with different economic and employment structures.

Multiple job-holding and unemployment

At a macro level there are various studies examining the cyclicity of multiple job-holding in general and how it is affected by the levels of unemployment in particular. From a theoretical standpoint there is no a priori reason why multiple job-holding should either be expected to be pro-cyclical or counter-cyclical (AMUEDO-DORANTES and KIMMEL, 2005). From a demand-side point of view one would expect multiple job-holding opportunities to be restricted during an economic recession, whereas from the supply side one may anticipate that individuals may decide to get a second job in order to ensure an uninterrupted and continuous flow of income during a downturn of the economy. This ambiguity is reflected in a number of empirical studies that present mixed evidence, arguing that multiple job-holding shows both pro-cyclical and counter cyclical patterns. On the one hand there is evidence that the rates of multiple job-holding drop during periods of low unemployment (EMPLOYMENT POLICY INSTITUTE[3], 1999), and on the other hand other empirical evidence (AMUEDO-DORANTES and KIMMEL, 2005) suggests that the chances of multiple job- holding increase during periods of economic expansion as there is higher job availability.

Nevertheless, in both cases the incidence of multiple job-holding is affected by the state of the regional labour market. For instance, PARTRIDGE (2002) found evidence of pro-cyclicality and argues that 'moonlighting appears to be a regional labour market shock absorber' (p. 438). Thus, an interesting aspect of multiple job-holding is to investigate how its incidence is affected by the current and lagged levels of regional unemployment.

3. Regional features of the Greek labour market

One of the most distinctive characteristics of the Greek economy is the strong persistence of regional differences. In particular, the divergence of Greek regions is much stronger than other peripheral areas of Europe, such as Spain and Portugal. Nevertheless, research on the convergence hypothesis concludes in mixed results. A body of evidence (SIRIOPOULOS and ASTERIOU, 1998; TSIONAS, 2002) suggests lack of income convergence among Greek regions, and the existence of economic dualism between southern and northern regions. On the other hand, a study by MICHELIS *et al.* (2004) does not reject the idea of regional convergence. Regarding unemployment, rates vary greatly across regions of the country. The implications of regional variation of unemployment for the Greek economy are significant as Greece has the highest percentage (73%) of the labour force living in regions with an unemployment rate above the national average amongst OECD countries (OECD, 2005). The large regional unemployment disparities were explored in a study by Livanos (2010) that did not find evidence of wage rigidity, which is quite interesting since Greece has a rather inflexible labour market and one would expect the opposite. Livanos suggested that this is due the large regional disparities and the distinctive features of the local labour markets. All the above, suggest strong regional differences in the Greek economy. These differences, apart from problems of immigration and other sociological and historical explanations, have also been attributed to ineffective planning, which is mainly an outcome of lack of relevant experience in comparison to rich countries (SIRIOPOULOS and ASTERIOU, 1998).

[Figures 1 & 2 here]

The large regional unemployment disparities are in fact one of the most striking features of the Greek labour market. A study by PUGA (2002) classifies Greece in the group of

countries with the largest regional disparities in Europe. Figure 1 presents the regional unemployment rate for the period 1999-2004. As can be seen, the differences in regional unemployment are quite large[4]. To illustrate, Western Macedonia, on average, has an unemployment rate around two times higher than Crete. In general, unemployment is concentrated mainly on northern and central regions. Southern regions of Greece seem to be less affected by unemployment. The high rates of unemployment in Northern and Central Greece can be attributed to the contraction of the manufacturing and the agriculture sectors. This is evident in Figure 2 where in regions like Western and Eastern Macedonia, Thessaly and Central Greece there is a relatively large primary and secondary sector. Regarding manufacturing, the pressures of international trade and the attractiveness of the low paid workforce in countries of Eastern Europe have led many industrial units, operating mainly in regions of Northern Greece and Central Greece, either to close down or move elsewhere. This, together with the shrinkage of the agricultural sector, which has traditionally been a large part of the Greek economy, have resulted in the rise of unemployment in these particular regions over the last twenty years. Regarding Southern Greece, the levels of unemployment have remained at low levels as these regions rely heavily on tourism which remains at high levels while they have experienced high levels of economic growth over the last decades. Typical examples of such regions are Crete and Ionian islands that have a relatively strong tertiary sector (Figure 2).

[Figure 3 here]

Figure 3 shows how the regional workforce is distributed across self-employed, family workers, and employees (wage-earners). A key observation of Figure 3 is that regions (excluding the urban regions, i.e. Attica and Central Macedonia) where the level of family workers is fairly high (like in Eastern Macedonia, and Thessaly), unemployment rate is relatively high. This is indicative of the structures of the trends of the Greek economy,

where the role of self-employment and small family business is central and is often seen as a safety net against unemployment.

[Figures 4 & 5 here]

The multiple job-holding rates in the 13 regions are presented in Figure 4. Interestingly, there is notable variation on the incidence of dual job-holding across geographical areas, with a higher proportion of individuals in Crete, Eastern and Western Macedonia, Peloponnese, Thessaly and Central Greece having a second job. This is true for both male and female workers, although the rates are higher for males. The immigration levels across regions are also provided in Figure 5. It appears that Attica and Central Macedonia have a notably higher concentration of immigrants (above 10% and 9%, respectively) compared to the rest of the regions. The high level of urbanisation and the available employment opportunities may be the reason behind this.

4. Data and methods

The analysis presented in this section draws on micro data from the Labour Force Survey (LFS), and in particular, annual cross-sections for the years 2000-2004 (spring quarter). The Greek LFS is conducted by the National Statistical Service of Greece (ESYE). Since 1998, the LFS is being conducted four times per year in order to meet the standards set by Eurostat. The questionnaire used is comprised of approximately 100 questions and both the questions and the definitions used are based on the European LFS (see EUROPEAN COMMUNITIES, 2003). The sample of the survey is 30,000 households and includes 80,000 observations approximately. Since the LFS is a sample survey, ESYE follows weighting procedures that are accordance with EU guidelines[5]. The five individual datasets were pooled together into a unique one. For the purposes of our analysis only male individuals, aged 25 and over, who are either self-employed, employed

(wage earners) or family-business employees, both part-time and full-time, are utilized. This results to a sample of 89,374 observations.

The data on wages is available only for employed individuals and refers to the net income from individuals' primary job. The wage variable in the LFS questionnaire distinguishes 6 income bands for the years 2000, 2001 and 2002 and 8 income bands for 2003 and 2004. For our purposes the median wage of each band is calculated. Regarding the region variable, it adopts the 2 level Nomenclature of Territorial Units for Statistics (NUTS), and defines 13 Peripheries of Greece. NUTS-3 level detail, that would increase the variation in the sample, is not available in the Greek LFS micro-data due to the anonymization process of ESYE. Also, unemployment rate is considered at the NUTS-2 regional level. Finally, the weighted population variable, provided by ESYE, is applied to our analysis in order to obtain the total population of the labour market variables presented in this paper.

[Table 1 here]

Table 1 reports demographic and job characteristics for the sample of individuals, and for single job-holders and multiple job-holders separately. The level of statistical significance of the difference in the means of the two groups is also provided in the last column. The reported level of second job-holding is around 4%, which is well below the corresponding rates in other EU countries (see EUROSTAT LFS[6]). Two plausible reasons behind the low reported incidence of multiple job-holding in the Greek LFS may be the notably high level of unrecorded activity, which reasonably prevents individuals from reporting it during the LFS interview and the fact that the relevant question refers only to the week prior to the date of the interview.

According to *EUROFOUND* [7] (2007) un-recorded activity in Greece is very widespread and accounts for about 25% of the total economic activities. Similarly, previous studies of LIANOS *et al.* (1996) and KANELLOPOULOS (1992) estimated that the informal sector accounts for about 30-35% of GDP. These high rates of "hidden economy" can be explained by tax evasion, the high rates of unemployment, and the large share of people working in agriculture, which is an industry that employs a high proportion of undeclared workers (DELL' ANNO *et al.*, 2007). Similarly, the high rates of self-employment and unpaid family work operate in the same direction. Consequently, the levels of undeclared employment remain at very high levels, while the groups that are most affected are those with limited bargaining power in the labour market. In particular, the groups whose employment services are often not recorded are immigrants, young people, and low skilled workers who might agree to work without being recorded under the fear of unemployment. LAZARIDES and ROMANISZYN (1998), who analysed the extent of undocumented employment of Albanians and Polish in Greece, note that "the actual number of Albanian and Polish undocumented workers is difficult to estimate accurately and remains a topic of great controversy and speculation" (p.18).

In addition, the relevant question in the Greek LFS survey is phrased as "How many jobs did you have last week". As a result, it is expected that the recorded incidence will be lower than that in surveys that do not restrict the time period[8]. So, although a relative low proportion of individuals appears to have a second job, in reality a much larger part of the workforce may actually engage in multiple job-holding (either regularly, occasionally, or seasonally). According to the Fourth European Working Conditions Survey conducted in 2005, the overall incidence of multiple job-holding in Greece is 10.1%, with the majority of people having a second job occasionally (around 5%) or seasonally (about 2%) and only less than 3% having a second job regularly.

Multiple job-holders, compared to single job-holders, tend to be more senior, and are more likely to be married, heads of the household, and of Greek origin. Furthermore, a higher percentage of manual workers appears to hold a second job, while the opposite is true for the low-skilled non-manual workers. Interestingly, the reported incidence of multiple job-holding is higher among the individuals working in the primary and secondary sector and lower for those employed in the tertiary sector. Finally, there are important regional differences in the second job-holding rates, with more than 50% of the multiple job-holders residing in the regions of Crete, Central Macedonia and Peloponnese.

As highlighted above, one of the main drives behind dual job-holding is financial constraints. Multiple job-holding is viewed as a survival strategy for those who cannot earn sufficient income in their primary job. Indeed, multiple job-holders reported lower average earnings from their primary job, which is consistent with the financial motive for second job-holding. Furthermore, a higher percentage of individuals who hold a second job appear to prefer to work more hours in their current job, compared to single job-holders. An indication that hours-constrained individuals currently resolve to holding a second job in order to overcome possible labour supply restrictions they face in their primary employment. Finally, the comparison between the two groups of workers reveals that a lower proportion of second job-holders has a permanent contract, suggesting that individuals may hold a second job as a hedging strategy against job insecurity.

5. Empirical Analysis

The decision to hold a second job

The multiple job-holding decision is modelled and estimated here for all male workers[9]. The regressors used to explain multiple job-holding include individual characteristics (age, marital status, head of household, and nationality); job-related information (self-employed, family-employed, full-time/part-time job, preferences over working hours, public/private sector, industry sector, occupation); regions; regional unemployment (current and lagged) and year dummies. The model is estimated using a logit estimator with robust standard errors and the derived marginal effects are presented in Table 2 (column 1). A convenient way of interpreting the findings is to examine whether a specific characteristic makes an individual more likely to hold a second job. The results reveal some important findings regarding the reasons why individuals may get a second job, and the effects of regional unemployment and the structure of local economies on the incidence of multiple job-holding.

[Table 2 here]

Looking at the demographic profile of the people who are likely to hold a second job, the findings suggest that married individuals and those who are heads of the household are more likely to hold a second job. For those individuals it appears that multiple job-holding may be a way to deal with their increased family needs and financial commitments. Individuals aged between 35 and 44 are found to be more likely to have a second job, compared to young people (aged between 25 and 34), while for the other age groups there are no significant differences. This finding seems reasonable as individuals of the older group have more financial commitments, while individuals of the younger group often receive aid from their families, due to the strong family bonds in Greece, in order to face their financial constraints. Finally, immigrants are found to be less likely to hold a second job, compared to natives. Plausible explanations of this pattern may be that immigrants have a higher percentage of undeclared jobs or are less familiar with the

Greek labour market and therefore less likely to know the possible employment opportunities..

Regarding the characteristics of the primary job and the decision to hold a second job, individuals who would like to work more hours in their current job are more likely to have a second job, a finding in line with the hour-constraints motives. Full-time employees[10] exhibit lower multiple job-holding, probably because of time allocation restrictions they may face and possibly due to the job security they may enjoy. Compared to employed individuals, those working in family businesses and self-employed individuals are more likely to hold a second job. Typically self-employed and family business employees may be more vulnerable to a business cycle as they are usually not secured by contractual agreements. Therefore individuals in this kind of employment may hold a second job as a way to maintain a continuous flow of income and to minimise their exposure to the fluctuations of the economy. Furthermore, there is a large proportion of self-employed and family business employees who are working in the primary sector (35% of the self-employed and 58% of the family business employees, compared to only 1.5% paid employees) (Figure 6). Studies in Greece have shown high levels of multiple job-holding rates amongst farming families (DAMIANAKOS, 1986; KASIMIS, 1986; EFSTRATOGLOU-TODOULOU, 1989 and 1990). Also, the incidence of multiple job-holding is estimated to be higher among those employed in the public sector, compared to the private sector. This can be explained by the nature of the Greek public sector and its good working conditions, in terms of working hours, which may allow its employees to take up a second job. Furthermore, non-manual workers are more likely to hold a second job compared to manual workers. In line with the literature, individuals employed in the primary sector, compared to those employed in the tertiary sector, are more likely to hold a second job, followed by those working in the secondary

sector. Wages in agricultural jobs, fishery and aquaculture tend to vary significantly over time, due to external factors like the weather condition and production restrictions, introduced by the government or EU regulations. Therefore, multiple job-holding may be an important means to the individuals employed in these sectors of ensuring a stable flow of labour income. Furthermore, this finding can be explained if one considers the high levels of self-employment in the primary and secondary sectors.

[Figure 6 here]

The differences in the incidence of multiple job-holding across the industry sectors are reflected at regional levels as well. Areas with developed primary sector, like Crete, Eastern Macedonia, Thessaly, and Peloponnese (Figure 2), are found to have higher multiple job-holding rates, compared to the reference region of Attica that has a relatively small primary sector. This can be explained by the structures of the local economies, which are dependent on the primary sector. Businesses are generally organized along the lines of small family business that allow for distinctively high rates of self employment and family workers, which, as discussed above, have very high rates of multiple job-holding.

The effect of the business cycle on the incidence of multiple job-holding is explored with the inclusion of current and lagged regional unemployment in the estimated model. The results, in line with other studies in the literature (AMUEDO-DORANTES and KIMMEL, 2005; PARTRIDGE, 2002), suggest that multiple job-holding is pro-cyclical, since the probability of moonlighting is found to increase during economic expansions (lower unemployment rate). This may interpreted as an indication that job availability may play an important role in explaining multiple job-holding phenomenon.

In order to further explore the effect of industry sectors and regions on the probability of holding a second job, the model is re-estimated separately for each industry sector. The industry-regions interaction effects reveal some interesting patterns, particularly in the primary sector. The estimates on individuals working in the primary sector (Table 2, column 2) indicate that there is significant regional variation in the incidence of second job-holding. Individuals in regions with developed primary sector, like Western Greece, Peloponnese, Thessaly, Epirus and Eastern Macedonia, are found to be less likely to hold a second job compared to those in Attica (the region with the smallest primary sector). This finding seems to contradict the general feeling that multiple job-holding is more likely to occur in agricultural areas. However, it does not come as a surprise since these regions have considerably high rates of unemployment, and thus the employment opportunities are fewer than in Attica, which is the centre of economic activity in Greece. EFSTRATOGLOU-TODOULOU (1990) finds similar results when examining multiple job-holding among Greek farm household members. In particular, "pluriactivity is directly related to off-farm opportunities" (pp.411) and "the presence and extent of pluriactivity will be highest in areas where off-farm opportunities are high" (pp. 412). Another interesting finding for the individuals in the primary sector is the large effect of working in the public sector on the probability of holding a second job. Although, individuals in the public sector are found to be more likely to have a second job the effect is significantly larger for those in the primary sector. Regarding the individual estimates for those employed in the secondary and tertiary sector (Table 2, columns 3 and 4), the estimates are quite similar to the overall estimates (Table 2, column 1).

In the Greek LFS, information regarding some important aspects of the primary job (namely wages, length of contract and information on shifts) is available only for employed individuals and not for self-employed or those working in family businesses.

Therefore, in order to examine further the motivation behind this labour market behaviour, the decision to hold a second job is re-estimated with the focus restricted only on employed individuals (Table 2, last column). As expected, wages are estimated to have a negative effect on multiple job-holding, supporting the financial motives hypothesis. However, financial motives alone are not sufficient to explain multiple job-holding. Multiple job-holding may be seen as a hedging strategy against job insecurity. This is indicated by the fact that individuals with temporary or fixed contracts in their primary job, compared to individuals in permanent jobs, are more likely to have a second job. Finally, individuals working shifts in their primary job are found less likely to have a second job.

[Table 3 here]

In order to get a better understanding of the regional differences in the multiple job-holding patterns, the occupational choices of the individuals in their second jobs are mapped across regions and presented in Table 3. Overall, there appears to be a high concentration of people (around 54%) doing agricultural and fishery-related occupations in their second jobs. Crete and Eastern Macedonia have the highest rate of people in these occupations (73% each) followed by those in Ionian and North Aegean islands, Peloponnese and Central Greece. As expected, Attica is at the other end of the spectrum with less than 30% of the dual job holders in agricultural and other related jobs. The second most popular occupational choice is for managerial and administrative jobs. Attica and Central Macedonia exhibit the highest concentration of dual job-holders in these occupations with 30.7% and 23.6% respectively. Generally, a higher percentage of people residing in these two regions appear to have high-skilled non-manual second jobs (43% in Attica and around 36% in central Macedonia). The high level of economic growth, the degree of urbanisation and the development of the tertiary sector could probably explain these patterns.

The hours spend in a second job

The analysis so far has established the effect of various individual and workplace characteristics on the decision to hold a second job. The study now focuses on the amount of hours supplied in the second job[11] and it examines the effect of the same individual and workplace characteristics on the intensity of multiple job-holding (reflected by the hours worked in the second job). Specifically, Tobit regressions on the hours spent on the second job are estimated and the marginal effects, conditional on holding a second job, are presented in Table 4. Following the analysis above, the model is estimated for all workers (column 1), and then separately for those working in the primary, secondary and tertiary sector (columns 2,3 and 4) and for salary employees only (column 5). A convenient way of interpreting these estimates is to focus at the calculated marginal effect of each variable on the hours worked in the second job.

[Table 4 here]

Overall the estimates reveal some interesting patterns regarding the hours individuals spend in their second job. People with increased family commitments, captured by the marital status and household role, are estimated to work more hours in their second job, than their counterparts. Immigrants are found not only to be less likely to have a second job (Table 2), but to spend less hours in that when dual job-holding. As discussed above, a possible explanation of this pattern may be that immigrants underreport the time they spend in their second job. Interestingly, self-employed individuals and those employed in a family business appear to work more hours in their second job, compared to paid employees with second job. The only exception is those whose primary job is in the secondary sector, in this case on statistical significant differences are observed. This finding may reflect the fact that self-employed and family business employees may be more exposed to the business cycle, therefore more dependent to their second job to

ensure a continuous flow of income, or simply the fact that they may have more time available to them. Conditional on having a second job, individuals whose main job is in the primary sector are found to work one hour more than those whose primary job is in the tertiary sector. The effect is smaller for those in the secondary sector. Wages, full-time employment status, permanent contract and working shifts exert a negative effect on the hours spend in the second job. Also, individuals employed in the public sector and those who would prefer to work more hours appear to work more hours in their second job.

The analysis reveals some interesting regional differences as well. Multiple job-holders in all regions appear to work more hours in their second jobs, compared to their counterparts in Attica. For example, in Crete individuals spend on average 4 to 5 more hours weekly in their second job compared to those in Attica. The effects are of smaller magnitude for the other regions. However, for those individuals employed in the primary sector, the opposite is true in most of the regions, with people spending fewer hours in their second jobs compared to those in Attica (Table 4, column 2). Finally, regional unemployment is also found to have a negative effect on hours spend in the second job, probably reflecting the limited employment opportunities during that period.

6. Conclusion

This paper, using data from the Greek LFS, studied the multiple job-holding phenomenon among male workers in the Greek labour market. Dual job-holding is a largely unexplored area and Greece, due to the large regional disparities, the structures of the local labour markets, and the demographic composition of the labour force, provides an interesting framework for its investigation. This study contributes to the relevant literature by examining the determinants of both the incidence of dual job-holding and

the hours spend in the second job, their variance across different regions and the effect of the business cycle on them.

Several interesting patterns emerged from this investigation on the motives behind multiple job-holding and on its occurrence and intensity across regions. The empirical analysis highlighted the importance of both pecuniary and non-pecuniary motives behind multiple job-holding. In particular, individuals were found to hold a second job not only to ensure a continuous flow of income to their household and deal with financial hardships, but as a hedge against job insecurity as well. Also, self-employed and family employees appeared to be more likely to have a second job and to work more hours in that second job, compared to the employed individuals. A pattern that could be explained by the lack of contractual agreements and the greater exposure of self-employed and family employees to the business cycle. In addition, those working in the primary sector, followed by those in the secondary sector, have a higher probability of both getting a second job and working more hours in that job, compared to those employed in the tertiary sector. These industry effects are also reflected in the regional differences.

The study revealed significant variations in the incidence of multiple job-holding across regions, with areas with intense primary sector, like Crete, Eastern Macedonia, Thessaly, and Peloponnese, having higher multiple job-holding rates than non-rural areas, such as Attica and Central Macedonia, whose economic activity is oriented towards the service sector. A finding that highlights the importance of local economies and their structure in explaining multiple-job-holding patterns. Finally, this study investigated the cyclicality of multiple job-holding and found evidence that second job-holding increases as the levels of unemployment decline. Therefore, multiple-job-holding appears to be pro-cyclical as it

is related to the number of job opportunities that are available to workers. The labour market demand-side effect on multiple job-holding is also reflected on the negative effect that regional unemployment exerts on the hours individuals spend in their second jobs. The findings of this study emphasize the need for further regional development in Greece, aiming to reduce regional disparities in economic growth and employment opportunities.

The analysis of this study provided some interesting findings regarding dual job-holding in the Greek labour market. In considering this important labour market phenomenon the authors identified some possible avenues for future research. One thing that became apparent is the need for a more systematic collection of data that would enable researchers to further investigate issues like the motives behind multiple job-holding. Furthermore, research on the occupational choices and duration of second job spells, as well as, the effect of second jobs on individuals' future labour market behaviour (e.g. job mobility, occupation/career changes) could provide a better understanding on dual job-holding and labour market dynamics overall.

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Table 1: Descriptive Statistics

	Means (sd)			Test[1]
	All workers	Multiple job-holders	Single job-holders	
Multiple job-holding				
Has second job	0.041			
Demographics				
Age (25-34)	0.242	0.192	0.244	***
Age (35-44)	0.259	0.278	0.258	***
Age (45-54)	0.252	0.274	0.251	***
Age (55 and over)	0.181	0.216	0.179	***
Married	0.702	0.790	0.698	***
Head of h/hold	0.745	0.812	0.742	***
Immigrant	0.064	0.021	0.066	***
Primary job characteristics				
Self- employed	0.403	0.523	0.398	***
Family-employed	0.040	0.058	0.039	***
Employed	0.557	0.419	0.563	***
Primary sector	0.160	0.286	0.155	***
Secondary sector	0.301	0.257	0.303	***
Tertiary sector	0.538	0.457	0.542	***
Managers/Professionals	0.280	0.270	0.280	
Rest non-manual	0.171	0.119	0.173	***
Manual	0.550	0.611	0.547	***
Public sector	0.194	0.184	0.194	

Full-time	0.976	0.947	0.978	***
Prefers more hrs	0.030	0.071	0.028	***
Wage (euros) [2]	927.380	895.418	928.441	***
	(362.132)	(360.410)	(362.144)	
Permanent job[3]	0.889	0.811	0.891	***
Works shifts[4]	0.215	0.173	0.216	***
Regions				
E. Macedonia	0.061	0.099	0.060	***
C. Macedonia	0.300	0.209	0.303	***
W. Macedonia	0.032	0.031	0.032	
Epirus	0.055	0.036	0.056	***
Thessaly	0.058	0.068	0.058	***
Ionian	0.022	0.017	0.022	**
W. Greece	0.066	0.045	0.067	***
C. Greece	0.057	0.059	0.057	
Attica	0.163	0.071	0.167	***
Peloponnese	0.064	0.093	0.063	***
N. Aegean	0.024	0.022	0.025	
S. Aegean	0.030	0.028	0.030	
Crete	0.068	0.222	0.061	***
Unemployment				
Unemployment (t)	8.595	8.098	8.616	***
	(1.543)	(1.850)	(1.525)	
Unemployment (t-1)	8.576	8.076	8.597	***
	(1.508)	(1.750)	(1.493)	

Time trends				
Year 2000	0.193	0.226	0.192	***
Year 2001	0.206	0.217	0.205	*
Year 2002	0.200	0.202	0.200	
Year 2003	0.191	0.178	0.191	**
Year 2004	0.211	0.177	0.212	***
N (all workers)	89374	3694	85680	
N (employed only)	44012	1413	42599	

(1): T-test on the equality of sample means between multiple job-holders and single job-holders (levels of significance: * $p<0.05$, ** $p<0.01$, *** $p<0.001$).

(2),(3),(4): Variables available only for employed individuals.

Table 2: Decision to hold a second job (Marginal effects from a Logit model)

	All workers				Employed
	All sectors	Primary	Secondary	Tertiary	All sectors
Demographics					
Age (35-44)	0.005*	0.008	0.001	0.005*	0.006**
	(0.002)	(0.007)	(0.002)	(0.002)	(0.002)
Age (45-54)	0.002	-0.006	-0.000	0.004	0.003
	(0.002)	(0.007)	(0.003)	(0.002)	(0.002)
Age (55 and over)	-0.003	-0.040***	0.001	0.010***	0.004
	(0.002)	(0.006)	(0.003)	(0.003)	(0.003)
Married	0.011***	0.018**	0.012***	0.007**	0.009***
	(0.002)	(0.006)	(0.003)	(0.002)	(0.002)
Head of h/hold	0.004*	0.012	-0.000	0.007**	0.008***
	(0.002)	(0.007)	(0.003)	(0.002)	(0.002)
Immigrant	-0.021***	-0.019	-0.019***	-0.014***	-0.018***
	(0.002)	(0.013)	(0.002)	(0.003)	(0.001)
Primary job characteristics					
Self-employed	0.010***	0.032***	0.004*	0.009***	
	(0.002)	(0.008)	(0.002)	(0.002)	
Family-employed	0.026***	0.054**	0.004	0.047***	
	(0.005)	(0.020)	(0.006)	(0.009)	
Primary sector	0.015***				0.017**
	(0.002)				(0.006)
Secondary sector	0.004*				0.006***
	(0.002)				(0.002)

Managers/Professionals	0.006**	-0.006	0.007	0.005**	0.010***
	(0.002)	(0.033)	(0.008)	(0.002)	(0.002)
Rest non-manual	0.004*	-0.017	0.013***	-0.001	0.002
	(0.002)	(0.036)	(0.004)	(0.002)	(0.002)
Public sector	0.009***	0.169***	-0.007**	0.010***	0.007***
	(0.002)	(0.039)	(0.003)	(0.002)	(0.002)
Full-time	-0.010**	0.004	-0.033**	-0.023***	-0.008
	(0.004)	(0.009)	(0.011)	(0.007)	(0.005)
Prefers more hrs	0.051***	0.094***	0.014*	0.048***	0.027***
	(0.006)	(0.019)	(0.006)	(0.008)	(0.006)
Log wage					-0.010***
					(0.002)
Permanent job					-0.015***
					(0.003)
Works shifts					-0.006***
					(0.001)
Regions					
E. Macedonia	0.058***	-0.019*	0.111***	0.041***	0.061***
	(0.006)	(0.008)	(0.016)	(0.008)	(0.009)
C. Macedonia	0.017***	0.006	0.015***	0.009**	0.010***
	(0.003)	(0.011)	(0.005)	(0.003)	(0.003)
W. Macedonia	0.052***	-0.002	0.072**	0.040*	0.033*
	(0.013)	(0.019)	(0.025)	(0.016)	(0.013)
Epirus	0.012**	-0.033***	0.021*	0.008	0.012*
	(0.005)	(0.008)	(0.009)	(0.005)	(0.006)
Thessaly	0.043***	-0.028***	0.081***	0.037***	0.046***

	(0.006)	(0.008)	(0.016)	(0.008)	(0.008)
Ionian	0.015*	-0.046***	0.035*	0.018*	0.019*
	(0.007)	(0.007)	(0.017)	(0.008)	(0.009)
W. Greece	0.005	-0.052***	0.022*	0.006	0.002
	(0.004)	(0.005)	(0.009)	(0.005)	(0.004)
C. Greece	0.036***	-0.014	0.052***	0.021**	0.038***
	(0.006)	(0.010)	(0.011)	(0.007)	(0.008)
Peloponnese	0.036***	-0.028**	0.061***	0.035***	0.027***
	(0.006)	(0.009)	(0.014)	(0.008)	(0.007)
N. Aegean	0.010	-0.039***	0.040*	0.001	0.007
	(0.006)	(0.008)	(0.016)	(0.006)	(0.007)
S. Aegean	0.039***	-0.018	0.054**	0.032***	0.031**
	(0.008)	(0.015)	(0.017)	(0.009)	(0.010)
Crete	0.109***	0.001	0.140***	0.126***	0.093***
	(0.012)	(0.014)	(0.027)	(0.018)	(0.016)
Unemployment					
Unemployment (t)	-0.001	0.001	-0.001	-0.000	-0.001
	(0.001)	(0.003)	(0.001)	(0.001)	(0.001)
Unemployment (t-1)	-0.003***	-0.009**	-0.001	-0.002*	-0.002*
	(0.001)	(0.003)	(0.001)	(0.001)	(0.001)
Time trends					
Year 2001	-0.004*	-0.011*	-0.004	-0.002	-0.001
	(0.002)	(0.005)	(0.002)	(0.002)	(0.002)
Year 2002	-0.004*	-0.015**	-0.001	-0.003	-0.001
	(0.002)	(0.005)	(0.002)	(0.002)	(0.002)
Year 2003	-0.006***	-0.014**	-0.005*	-0.003	-0.003

	(0.002)	(0.005)	(0.002)	(0.002)	(0.002)
Year 2004	-0.011***	-0.024***	-0.011***	-0.008***	-0.004*
	(0.002)	(0.005)	(0.002)	(0.002)	(0.002)
LR Chi2	2204.519	409.382	734.402	1298.879	1229.497
N	89374	14338	26937	48099	44012

Notes: (1) For dummy variables, marginal effects are calculated based on discrete change of from 0 to 1. (2) Reference group: A male individual aged 25 to 34 employed in the tertiary sector doing a manual occupation, who resides in Attica the year 2000. (3) Level of significance * $p<0.05$, ** $p<0.01$, *** $p<0.001$.

Table 3: Distribution of occupations (%) in second job per region

	Occupation in second job								
	1	2	3	4	5	6	7	8	9
E. Macedonia	5.2	2.7	1.1	0.7	7.0	73.6	4.1	1.1	4.5
C. Macedonia	6.1	23.6	6.0	0.9	7.2	39.2	7.7	3.5	5.8
W. Macedonia	12.3	8.4	1.9	3.9	9.7	49.7	9.0	3.2	1.9
Epirus	11.2	15.3	2.4	3.5	13.5	42.9	5.9	2.4	2.9
Thessaly	4.5	6.4	2.3	1.0	16.1	52.4	8.7	2.3	6.1
Ionian	7.5	11.3	2.5	0.0	7.5	62.5	3.8	1.3	3.8
W. Greece	11.5	10.6	1.9	1.9	14.9	46.6	6.3	3.4	2.9
C. Greece	7.7	3.5	0.4	2.1	13.9	57.5	7.3	2.4	5.2
Attica	5.5	30.7	7.1	1.8	13.4	28.9	6.6	2.1	3.9
Peloponnese	8.6	2.8	1.9	0.7	15.6	59.2	6.5	1.9	2.8
N. Aegean	7.7	4.4	4.4	1.1	12.1	60.4	7.7	2.2	0.0
S. Aegean	18.7	9.8	0.8	7.3	19.5	23.6	12.2	3.3	4.9
Crete	5.7	3.6	2.9	0.2	5.9	73.4	4.5	0.7	3.1
Total	7.1	11.1	3.3	1.3	10.2	54.3	6.4	2.1	4.1

Notes: (1) Professional, Technical and Related Workers; (2) Administrative and Managerial Workers; (3) Clerical and Related Workers; (4) Sales Workers; (5) Service Workers; (6) Agricultural, Animal Husbandry and Forestry Workers, Fishermen and Hunters;(7) Production and Related Workers; (8) Transport Equipment Operators; (9) Labourers

Table4: Hours worked in second job (Marginal effects from a Tobit model)

	All workers				Employed
	All sectors	Primary	Secondary	Tertiary	All sectors
Demographics					
Age (35-44)	0.290*	0.266	0.041	0.395*	0.499**
	(0.118)	(0.316)	(0.199)	(0.161)	(0.160)
Age (45-54)	0.112	-0.415	-0.089	0.325	0.228
	(0.125)	(0.324)	(0.208)	(0.171)	(0.171)
Age (55 and over)	-0.267*	-2.055***	0.100	0.641***	0.363
	(0.132)	(0.317)	(0.241)	(0.192)	(0.208)
Married	0.759***	0.883**	1.100***	0.468**	0.747***
	(0.123)	(0.290)	(0.231)	(0.167)	(0.176)
Head of h/hold	0.350*	0.570	-0.001	0.578**	0.730***
	(0.137)	(0.326)	(0.255)	(0.184)	(0.188)
Immigrant	-1.697***	-1.194	-1.823***	-1.224***	-1.909***
	(0.188)	(0.709)	(0.245)	(0.320)	(0.204)
Primary job characteristics					
Self-employed	0.688***	1.762***	0.280	0.712***	
	(0.105)	(0.437)	(0.151)	(0.148)	
Family-employed	1.397***	2.032**	0.303	2.451***	
	(0.221)	(0.660)	(0.464)	(0.377)	
Primary sector	1.136***				1.194**
	(0.143)				(0.378)
Secondary sector	0.292**				0.564***

	(0.113)				(0.145)
Managers/Professionals	0.442***	-0.368	0.530	0.460***	0.898***
	(0.131)	(1.772)	(0.488)	(0.134)	(0.165)
Rest non-manual	0.259	-0.818	1.123**	-0.087	0.157
	(0.135)	(1.584)	(0.378)	(0.147)	(0.154)
Public sector	0.587***	4.881***	-0.624*	0.737***	0.614***
	(0.123)	(1.011)	(0.259)	(0.145)	(0.131)
Full-time	-0.883***	-0.033	-1.946***	-1.620***	-0.815*
	(0.227)	(0.412)	(0.524)	(0.366)	(0.365)
Prefers more hrs	2.517***	3.443***	1.050**	2.642***	1.879***
	(0.232)	(0.578)	(0.359)	(0.345)	(0.300)
Log wage					-0.876***
					(0.172)
Permanent job					-1.155***
					(0.175)
Works shifts					-0.593***
					(0.132)
Regions					
E. Macedonia	2.681***	-1.062*	4.310***	2.281***	3.183***
	(0.222)	(0.463)	(0.437)	(0.306)	(0.314)
C. Macedonia	0.906***	-0.021	0.875**	0.645***	0.668***
	(0.152)	(0.482)	(0.272)	(0.187)	(0.195)
W. Macedonia	2.024***	-0.599	2.695***	1.893**	1.619**
	(0.428)	(0.859)	(0.748)	(0.615)	(0.578)
Epirus	0.663**	-1.879***	1.131**	0.589	0.833*
	(0.231)	(0.498)	(0.430)	(0.309)	(0.338)

Thessaly	1.969***	-1.750***	3.364***	2.031***	2.468***
	(0.234)	(0.473)	(0.468)	(0.321)	(0.337)
Ionian	0.775*	-3.059***	1.680*	1.089**	1.110*
	(0.317)	(0.621)	(0.687)	(0.400)	(0.477)
W. Greece	0.194	-3.284***	1.153**	0.434	0.055
	(0.211)	(0.437)	(0.422)	(0.292)	(0.317)
C. Greece	1.665***	-1.035*	2.419***	1.242***	2.119***
	(0.232)	(0.511)	(0.403)	(0.325)	(0.332)
Peloponnese	1.812***	-1.653**	2.861***	1.954***	1.703***
	(0.241)	(0.507)	(0.483)	(0.335)	(0.353)
N. Aegean	0.618	-2.316***	2.051**	0.188	0.456
	(0.327)	(0.664)	(0.632)	(0.433)	(0.463)
S. Aegean	1.857***	-0.993	2.447***	1.785***	1.810***
	(0.317)	(0.807)	(0.574)	(0.403)	(0.443)
Crete	4.394***	-0.114	5.160***	5.145***	4.339***
	(0.328)	(0.640)	(0.639)	(0.472)	(0.468)
Unemployment					
Unemployment (t)	-0.015	0.093	-0.090	0.014	-0.093
	(0.048)	(0.116)	(0.082)	(0.066)	(0.068)
Unemployment (t-1)	-0.165**	-0.368**	-0.063	-0.171*	-0.152*
	(0.053)	(0.125)	(0.088)	(0.075)	(0.075)
Time trends					
Year 2001	-0.229*	-0.490	-0.274	-0.130	-0.109
	(0.114)	(0.266)	(0.207)	(0.158)	(0.164)
Year 2002	-0.184	-0.677*	0.065	-0.169	-0.058
	(0.115)	(0.268)	(0.204)	(0.159)	(0.166)

Year 2003	-0.323**	-0.628*	-0.280	-0.182	-0.213
	(0.115)	(0.271)	(0.209)	(0.158)	(0.173)
Year 2004	-0.718***	-1.007***	-0.871***	-0.577***	-0.273
	(0.124)	(0.296)	(0.221)	(0.168)	(0.192)
LR Chi2	2165.667	395.985	694.077	1248.432	1207.535
N	89374	14338	26937	48099	44012

Notes: (1) For dummy variables, marginal effects are calculated based on discrete change of from 0 to 1. (2) Reference group: A male individual aged 25 to 34 employed in the tertiary sector doing a manual occupation, who resides in Attica the year 2000. (3) Level of significance * $p<0.05$, ** $p<0.01$, *** $p<0.001$.

Figure 1
Unemployment rate (%) across regions

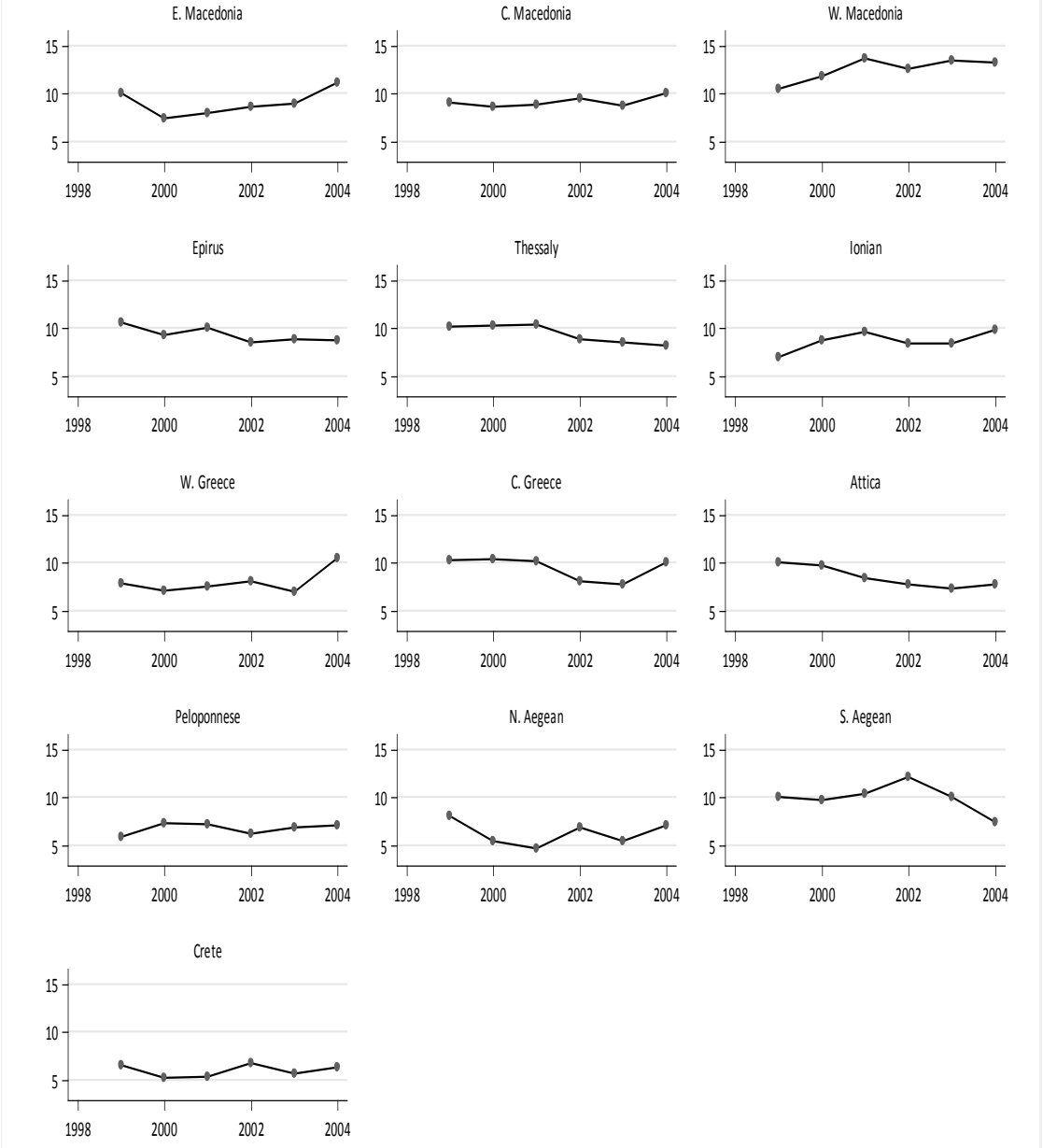


Figure 2
Distribution of Industry Sectors across Regions

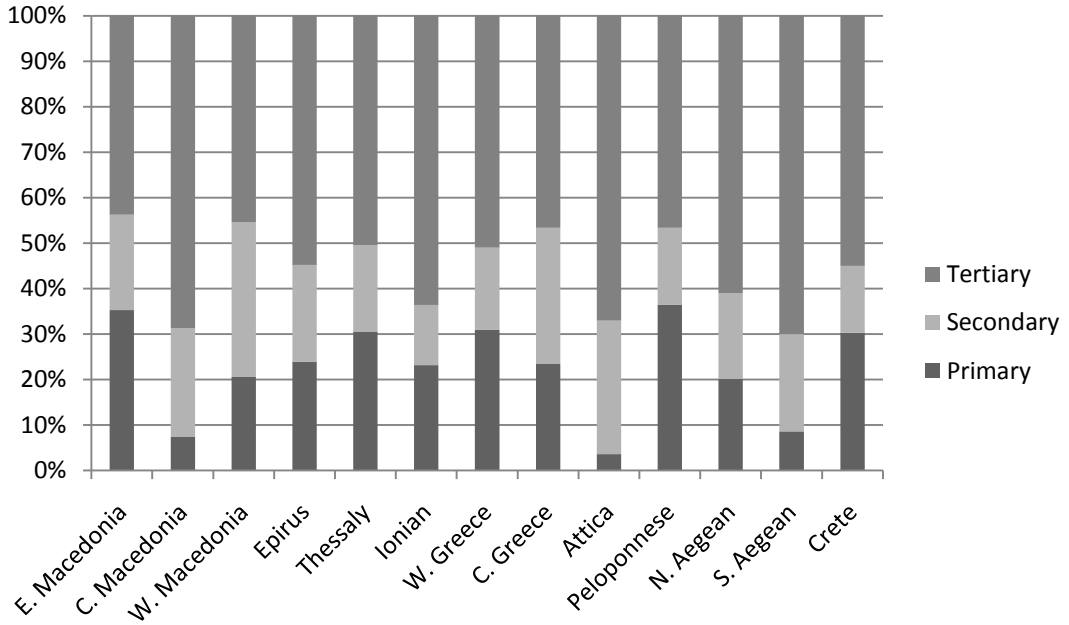


Figure 3
Type of Employment across Regions

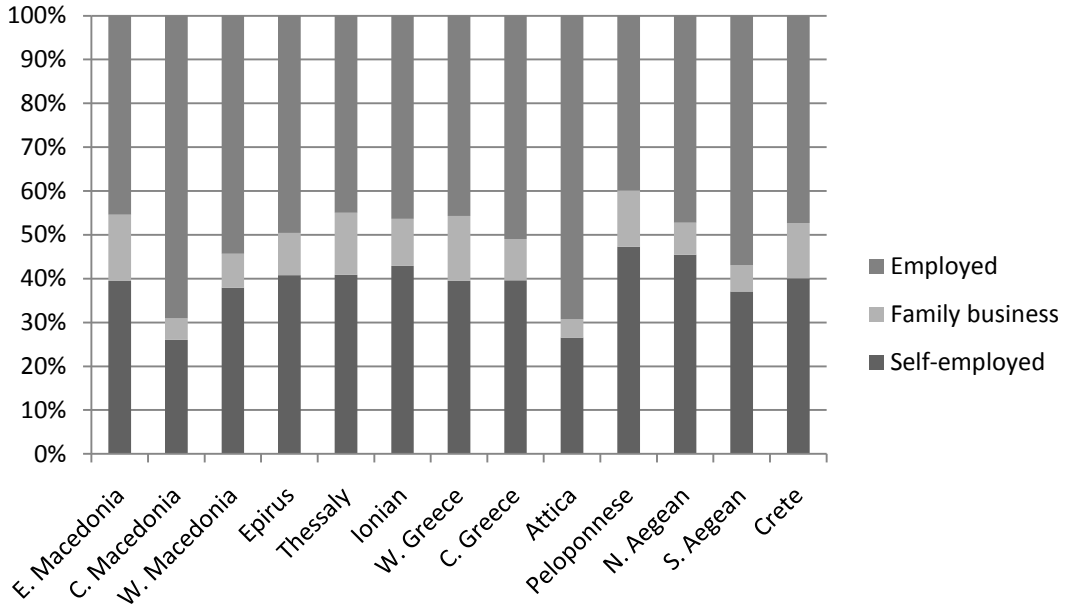


Figure 4
Multiple Job-Holding (%) across Regions

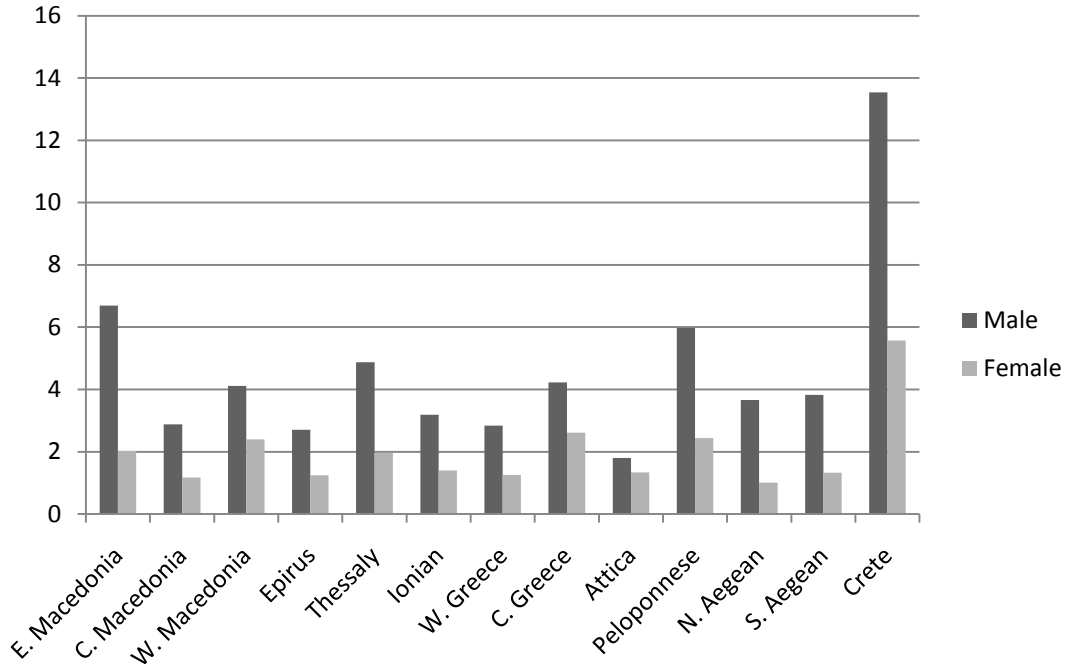


Figure 5
Immigration (%) across Regions

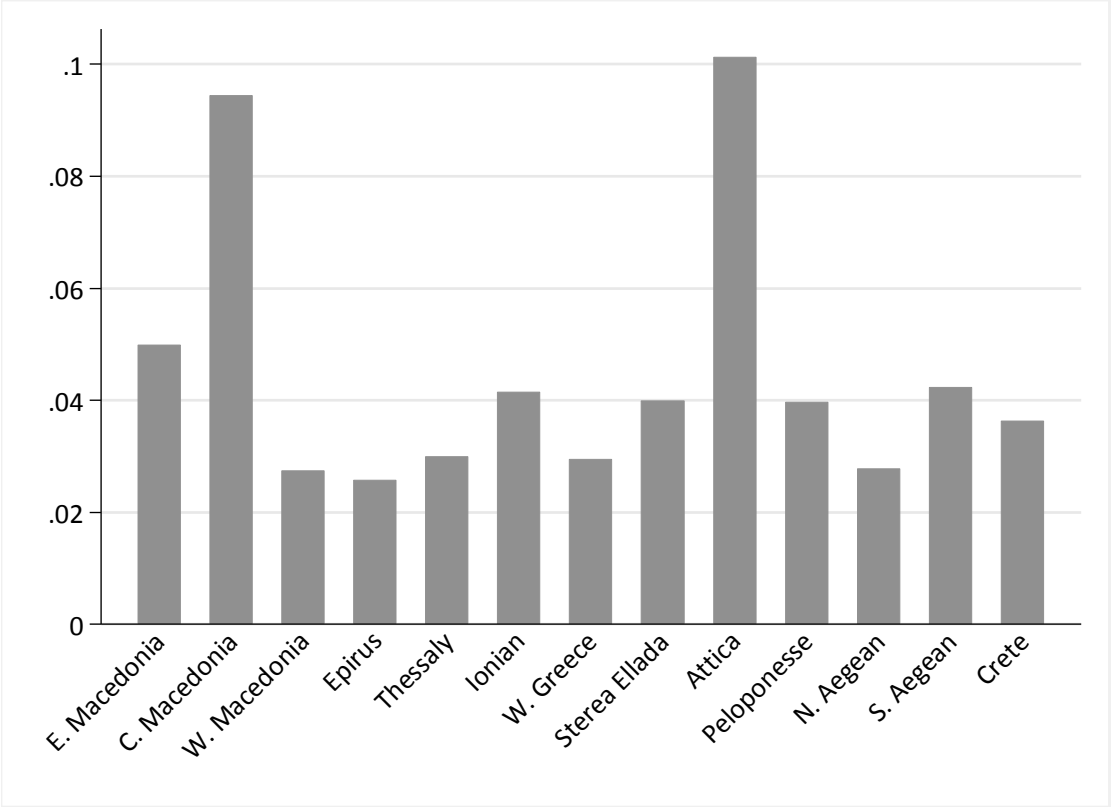
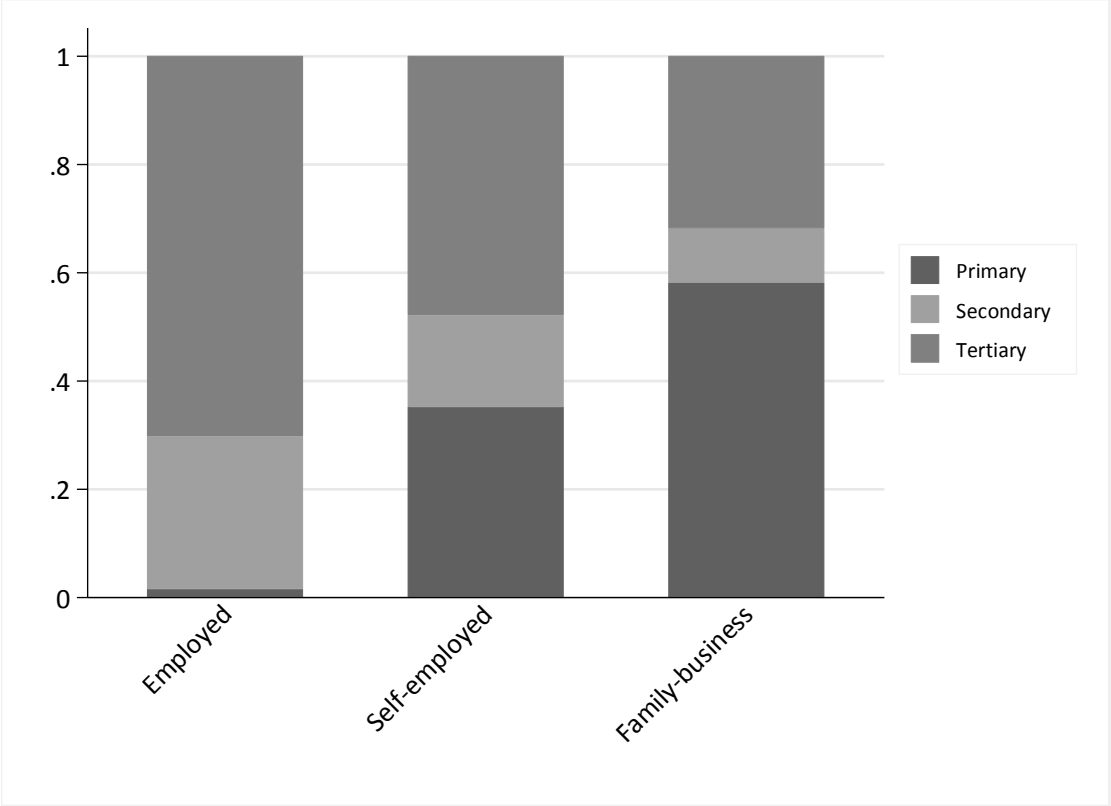


Figure 6
Distribution of Industry Sectors and Type of Employment



[1] See http://www.eurofound.europa.eu/eiro/2002/09/feature/gr0209104f.htm

[2] Exception is the early work of DAMIANAKOS (1986), KASIMIS (1986), EFSTRATOGLOU-TODOULOU (1989 and 1990) and DAOULI and DEMOUSSIS (1995) who investigated multiple-job-holding in the agricultural sector.

[3] Cited in AMUEDO-DORANTES and KIMMEL (2005)

[4] The observed differences in the unemployment rate per region and over time are partly verified by performed tests of equality. In particular, the differences in the average regional unemployment rate are statistically significant in W. Macedonia, Peloponnese, N. Aegean, S. Aegean, and Crete when compared to the rest of Greece (for example average unemployment in W. Macedonia compared to the average unemployment rate in the rest of Greece). Similarly, the differences in the average yearly unemployment rate are statistically in 1999, 2000, 2003, and 2004 when compared to the average of the rest of the years (for example average unemployment in 1999 compared to the average unemployment rate in the years 2000-2004).

[5] For a description of ESYE's weighting procedures see EUROSTAT (2006).

[6]http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1996,39140985&_dad=portal&_schema=PORTAL&screen=detailref&language=en&product=REF_TB_labour_market&root=REF_TB_labour_market/t_labour/t_employ/t_lfsa/tps00074

[7] See http://www.eurofound.europa.eu/emire/GREECE/HIDDENECONOMY-GR.htm

[8] For example in the British Household Panel Survey the relevant question is "Do you earn any money from (a second job) odd jobs or from work that you might do from time to time (apart from your main job)?"

[9] Women's decision to hold a second job is a more complex issue to examine since it requires controlling for their labour market participation overall and also their role in the

household before being able to make inference of their motives behind multiple job-holding. Restrictions in the data available to the authors do not allow the identification of valuable household characteristics (e.g. spouse's employment status). As a result, female individuals are excluded from the analysis.

[10] The regression analysis was repeated also for a sample of full-time workers only, and the results (available upon request from the authors) remained fairly similar with this sample restriction imposed.

[11] The authors would like to thank an anonymous referee for this useful suggestion.