

Exploring the determinants of becoming an Economic Short-Time Worker in Europe.

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Introduction

The economic crisis which hit most of the European countries from the third quarter of 2008 has had major effects on labour markets. Starting from a level of 7.1% in 2008, the EU27 unemployment rate increased up to 10% in the first quarter of 2010, corresponding to approximately 7.8 millions of additional persons in unemployment which makes the effect of the 2008-09 recession on unemployment comparable to the deepest post-war recession: the 1973 oil shock. Similarly, in 2009 the EU27 GDP decreased by 4.2% compared to 2008 which constituted an unprecedented figure in the history of the European Union and we have to refer to the Great Depression of 1930s in order to have a similar continent-wide output loss of this order of magnitude. Although almost all Member States have suffered a decrease of their GDP and an increase in unemployment, the extent of these losses strongly varies among countries. In particular, countries with approximately the same loss of output have experienced a different increase of the unemployment rate. This is the case, for example, for Germany and Denmark which suffered the same decrease of GDP in 2009, -4.9%, whereas the increase of unemployment was much higher in Denmark than in Germany.

The effect of the crisis is particularly clear in terms of GDP percentage change from the previous year: all the countries with the exception of Poland (+1.7%) have seen a decrease their GDP in 2009. Moreover, Denmark, Estonia, Italy, Ireland, Latvia, Sweden and United Kingdom recorded a decrease also in 2008. Whilst the EU27 average loss in 2009 was equal to 4.2% with most of the Member States recording a loss around 4-5%, the decrease was more smoothed in south Mediterranean countries as Malta (-1.5%), Cyprus (-1.7%), Greece (-2%) and Portugal (-2.7%). France also recorded a limited decrease (-2.6%) compared with the EU average.. Conversely, the collapse in terms of GDP growth was dramatic in the Baltic states with a loss of approximately 14%-15% for Lithuania and Estonia and a striking 18% in Latvia. Finally a large decrease was also recorded in Finland (-8%), Slovenia (-7.8%), Romania (-7.1%), Ireland (-7.1%) and

Hungary (-6.3%).

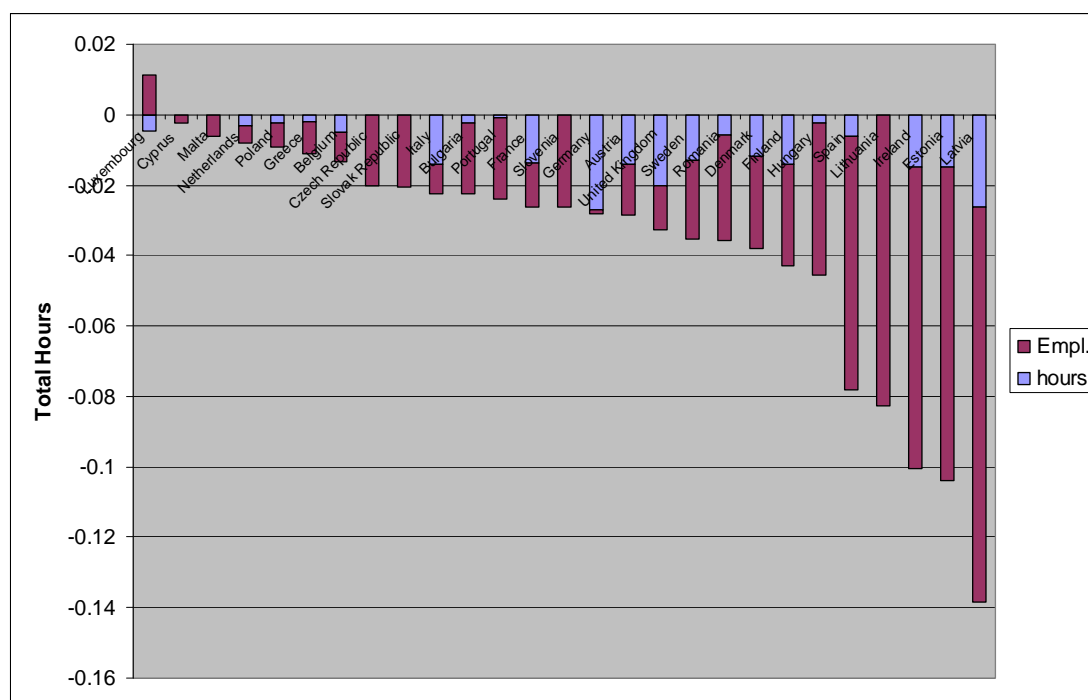
While in 2008 unemployment rose only in some countries such as Estonia, Ireland, Spain, Italy, Latvia, Lithuania, Luxembourg, Hungary, Sweden and United Kingdom, in 2009 the unemployment rate rose in all 27 Member States as a consequence of the crisis. However, this increase has been very different for each country. Although most of the countries have recorded an unemployment rate 30% higher than the figure of 2008, other countries as Germany, Luxembourg, Belgium, Italy, Poland, Malta and Romania have recorded as quite limited increase (Germany and Luxembourg less than the 7% compared to the previous year, the others less than 20% higher than the previous year). Conversely, the three Baltic States have more than doubled their unemployment rate. A considerable increase has been registered also in Denmark, Ireland, Spain and the Czech Republic with a relative change varying from 50% to 100% of the previous year.

It has been empirically observed, (Okun , 1962) that growth slowdowns coincide with rising unemployment. This negative correlation between GDP growth and unemployment has been named 'Okun's law' after the economist Arthur Okun who first documented this relationship in the early 1960s. As expected a strong negative correlation (-0.79) is found between changes in GDP and unemployment. And the unemployment rate has risen differently also in countries where the fall in real GDP has been similar. In particular, countries like Estonia, Lithuania, Ireland, Denmark, Spain, Czech Republic and Cyprus have achieved a particularly poor labour market performance in terms of unemployment rate given the size of the reduction of their GDP. Conversely, Germany, Luxembourg, Slovenia, Finland, Hungary, Italy and Belgium have recorded an increase of the level of unemployment lower than expected in respect to the size of their output loss.

Labour input reductions: the contribution of working time and headcount adjustments.

The uneven impact of the crisis in terms of increase of unemployment rate among the EU27 countries may be explained by the different welfare states and policies, such as short-time working schemes, active labour market policies, and by company internal measures which have permitted to respond in different ways to the output shock. In this framework the reduction of the actual worked hours has played an important role in Germany, Luxembourg, Italy and Belgium in smoothing the impact of the output loss. This result is particularly clear when decomposing the percentage change of the total annual hours worked for the period 2007-2009. Labour market adjustment can affect the total worked hours with a change in the total number of employees and with a change in the average number of worked hours per employee. In Figure 1 these two contributions are clearly represented. The part of the bar in red represents the changes in number of employees and the part in blue represents the change in average hours per employee. The change in the total working hours is negative for all the countries but Luxembourg. In Germany a reduction of 2.7% of the number of actual working hours has been recorded, this is the highest value observed. More in general, a limited increase of unemployment tends to be associated with a relatively higher hours adjustment. In fact countries like Italy, France, Austria and Belgium have mitigated the effect of the crisis on unemployment by reducing the actual worked hours, i.e. the average working time. In particular, in Germany the total changes in the total working hours have been almost completely absorbed by the reduction of the average working time.

Although significant reductions in hours have been achieved with company-initiated reductions in overtime, the use of working time accounts and holiday entitlements and other and bilateral arrangements between employers and workers it is indubitable that also short-time working/temporary lay-off (with or without public support) has played a fundamental role in preserving jobs during the crisis. With the reductions in average hours, which absorbed the total adjustment in labour input, the decline in unemployment has been limited in many countries, compared with what would have been expected given the size of the decline of the output. Most of the European Member States have introduced or expanded public short-time working/temporary lay-off schemes as a measure for mitigating the effect of the downturn and, in particular, to maintain jobs and reduce the number of job losses.

Figure 1: Comparison of the change in total hours, average hours and employees

Source: KLEMs dataset (own calculations-2007-2009)

Economic Short Time work in Europe

During the recession, the reduction of working time due for slack of work has affected with a different extent the employees of all the Member States regardless of the existence of public short-time working schemes. The lack of a common indicator for measuring the participation in public short-time working scheme strongly hampers the possibility of using the administrative data for a cross-country comparison also in the countries where such schemes exists. However, in order to better understand the short-time working phenomenon in time of crisis and to assess the extent and the characteristics of such phenomenon a country comparison across Europe is fundamental. In this framework the 2009 European Labour Force Survey provides a valuable tool for performing such comparison. Focusing on the population of employees, the OECD defines Economic Short-Time Workers as those workers who worked less than usual due to slack of work for technical and economic reasons. The Labour Force Survey captures this population providing data harmonised by country which permits a robust cross-country comparison.

It is important to remind the reader that with the definition Economic Short-Time Workers (ESTW) adopted here, just the population of those workers who have worked less than usual (or not worked at all but still maintaining a formal attachment with his/her job) for slack of work for economic or technical reasons in the week of reference is captured. However, this does not imply in any case the participation of these workers in public short-time working/temporary lay-off schemes or the receipt of some benefit related to these in the countries where such schemes exist. Although a direct comparison is unfeasible, the distribution of the Economic Short-Time Worker, computed with the LFS, is consistent, at least in the order of magnitude, with the administrative figures provided by Member States.

The population of Economic Short Time workers is identified with the variables HOURREAS and NOWKREAS. In particular with HOURREAS the population of those who worked less for slack of work for technical or economical reasons in the week of reference is captured (HOURREAS=4 "Working less for slack of work f technical or economic reasons"). Then with the variable NOWKREAS the population of those workers who haven't worked at all for slack of work for technical or economical reasons in the week

of reference but still having a formal attachment to his/her job is captured. (NOWRKREAS=1 –“Not worked for slack of work for technical or economic reasons”).

Following the LFS data in 2009 almost 2 millions of ESTW have been observed in Europe. This number is however unevenly distributed among the Member States. In particular almost the 60% of the ESTW have been recorded in Germany (~604k) and Italy (~459k), These two countries have a long tradition and well established public short-time working schemes. However, all the Member States have seen the number of ESTW strongly increase in 2009. In terms of percentage change, the increase has been particularly consistent in countries as Slovakia, Germany, Czech Republic, Bulgaria, Estonia and France.

Exploring the determinants of becoming ESTW in time of crisis.

In order to examine the probability of becoming a ESTW and to investigate whether the observed differences highlighted in the previous section persist when controlling for other important socio-demographic and job related characteristics, we estimate a logit model. The model is performed individually for 24 member states. Cyprus, Malta and Luxembourg are excluded due to the large amount of missing data. As almost the 60% of the ESTW has been observed in Germany and Italy the model for the entire Europe is not presented. The independent variable “Economic Short Time Workers” (yes/not) is built following the assumptions described in the previous subsection. The set of explanatory variables included in the logit model are shown in table 1.

Table 1–Set of explanatory variables included in the model.

<i>Name and categories</i>	<i>Type</i>
AGE: Age of the Respondent (17-65)	Categorical
SEX: gender of the respondent (0=M, 1=F)	Categorical
NATIONAL: Nationality of the respondent: 0 National; 1 Non EU; 2; EU27	Categorical
EDUCATION: Educational level of the respondent: 0 ISCED1; 1 ISCED2; 2: ISCED 3-4 ; 3: ISCED5-6	Categorical
ISCO1D: Isco code 1 digit (0=Armed Force and 6=skilled agricultural excluded)	Categorical
NACE_REC: Nace code rev 2 1Digit	Categorical
2NDJOB: Existence of a 2nd Job (0=No; 1=Yes)	Categorical
PART_TIME: Part/Full Time (0=Full Time; 1=Part Time)	Categorical
SUPERVISORY: Supervisor role (0=No; 1=Yes)	Categorical
TEMPORARY: Temporary/Permanent position (0=Permanent; 1=Temporary)	Categorical
SIZE: size of the firm: 0= Micro (<10 empl.) 1=small (10-19 empl.) 2=Medium-Large (>20); 3= unknown.	Categorical
TRAINING: Participation to Training (0=No; 1=Yes)	Categorical

The results of the logit model¹ performed individually for each country show a heterogeneous picture of the profile of the ESTW among the 24 Member States included in the analysis. This heterogeneity particularly mainly emerges for the effect of the type of contract, the length of working day and the size of the companies. The results show a heterogeneous picture of the profile of ESTW among the 24 Member States analyzed. The differences are quite striking as regards the type of contract, part or full time working and the size of the companies. However, it is possible to group the 24 Member States into three clusters: traditional, unconventional and hybrid.

The traditional cluster is the most coherent. This cluster is comprised of Member States with a long and

¹ The statistical table with the analytical results is shown in “Extending flexicurity – The potential of short-time working schemes: ERM Report 2010” (<http://www.eurofound.europa.eu/publications/htmlfiles/ef1071.htm>), while a description of the findings is presented here.

extensive tradition of short-time working schemes – Austria, Belgium, Germany and Italy. This group is then complemented by a set of other countries (the Czech Republic, Slovakia and Slovenia), which have economic links with and are geographically contiguous and culturally close to the former set, possibly implying a spill-over effect. The group is called ‘traditional’, since having a permanent contract and working in medium-sized or large companies in a subordinate position in all these countries increases the probability of a worker’s being an ESTW. However, the impact of working part or full time differs among these countries. In Austria, Belgium, Germany, and Italy (the countries with a long and well-established tradition of public short-time working schemes), those with a full-time contract have a greater probability of being ESTW. Conversely, in the other countries, the probability is greater for those with a part-time contract. However, considering the professionally-related variables, this is the only difference observed; in terms of economic sectors and occupation, there is a common profile. Employees in the manufacturing sector have a greater probability of being ESTW. In addition, the probability increases for those working in occupations such as machine or plant operators and craft and other trades workers. Men have a higher probability of being ESTW, with the exception of Italy. The probability of being ESTW decreases as the education level increases. Thus, employees with a primary level of education have a higher probability of being ESTW and those with an upper secondary or tertiary educational level have a lower probability of being ESTW. Finally, in all these countries, ESTW have a higher probability of participating in training activities than other workers and, with the exception of Belgium, of having a second job.

The cluster of countries termed ‘unconventional’ is the most unlike the traditional cluster. This cluster is composed of Denmark, Estonia, Ireland, the Netherlands, Poland and the UK. These countries have a number of common characteristics as regards the functioning of their labour markets and are often considered to be among the more economically liberal countries in Europe and generally score highly on flexicurity indicators. In these countries, employees with a temporary contract and working in a micro company have a higher probability of being ESTW. Moreover, those who occupy subordinate positions have a greater probability of being ESTW in all these countries – except Denmark – and those with a part-time contract have a greater probability of being ESTW (except in the UK). The effect of company size is reflected in the effect of the economic sectors. In contrast to the other clusters, those working in the sectors of construction, accommodation and food services, arts and entertainment, administrative and support services, real estate, and mining have a higher probability of being ESTW. The presence of several private services sectors makes the profile depicted in this cluster unique. With regard to national particularities, in Ireland the sectors in which workers have a higher probability of being ESTW are real estate and mining, while in Denmark they are accommodation and food services, arts and entertainment and education. The education sector has an important effect on the probability of being ESTW also in Poland. Moreover, the effect of occupation constitutes an additional difference with respect to the other clusters: here, together with the usual machine and plant operators and craft and trade workers, working as a manager in Denmark, and as professionals in Poland and Estonia, increases the probability of being ESTW. The analysis of the sociodemographic variables shows that men have a higher probability of being ESTW than do women in all these countries, with the exception of Estonia. In terms of educational level, those with a tertiary education have a lower probability of being ESTW. In Denmark, Ireland, Poland and the UK, those with a lower-secondary level of education have a higher probability of being ESTW, while in Estonia and Netherlands those with only a primary education are more likely to be ESTW. In terms of access to training, in the UK, Estonia, and Netherlands, ESTW have a lower probability of participating in training compared with other employees. The opposite holds true in Ireland, Denmark and Poland.

The countries in the hybrid cluster are more heterogeneous, not only as regards their institutional background and labour market characteristics but also in terms of the probability of their workers being ESTW. This group is composed of three southern European countries (Greece, Portugal and Spain), France, two Nordic countries (Sweden and Finland), three eastern European countries (Bulgaria, Hungary and Romania) and two of the Baltic states – Latvia and Lithuania. In all these countries it is those workers with a

temporary contract who are most likely to be ESTW. Moreover, with the exception of Hungary, the probability of being ESTW increases for those with a part-time contract and, with the exception of Romania and Bulgaria, for those holding a subordinate position. However, the effect of the size of company varies among the countries. In Bulgaria, Hungary, Romania, Portugal, France and Sweden, it is those working in medium-sized and large companies who are more likely to be ESTW. Conversely, in Finland, Spain, Greece, Latvia and Lithuania, it is those working in small firms who are more likely to be ESTW. The effect of the economic sector is similar in some ways in the hybrid cluster to the traditional cluster, and different in others. Although workers in the manufacturing and construction sectors are more likely to be ESTW in Bulgaria, France, Finland and Latvia, in the remaining countries, other productive and service sectors have an impact on the probability of being ESTW. However, a certain degree of coherence is found in the occupations: those working as machine or plant operators, craft and other trades workers and those in elementary occupations are more likely to be ESTW in all the countries of this cluster. Men are more likely than women to be ESTW in all these countries. In all the countries, with the exception of Spain, those with a tertiary level of education are less likely to be ESTW. In France, Latvia, Lithuania, Portugal, Romania and Spain, workers with only a primary level of education are more likely to be ESTW, while those with a lower-secondary level of education in Bulgaria, Finland and Hungary are more likely to be ESTW. Finally, ESTW in Finland, Latvia, Lithuania, and Sweden are less likely to attend training courses (although the size of the company may play a role here). The reverse is the case for the rest of the countries in this cluster.

Table 2 - Factors increasing the probability of being a ESTW across Europe

Cluster	Traditional		Dynamic			Unconventional	
Countries	Austria	Belgium	Portugal	Spain	France	Denmark	Netherlands
	Italy	Germany	Greece	Finland	Sweden	United Kingdom	Ireland
	Czech Republic	Slovakia	Lithuania	Latvia	Romania	Poland	Estonia
	Slovenia		Hungary	Bulgaria			
Professionally Related variables	Permanent Contract		Temporary Contract			Temporary Contract	
	Full/Part-Time		Part-Time			Part-Time	
	Medium/Large Companies		Small and Medium/Large Companies			Micro Companies	
	Subordinate		Mainly subordinate			Mainly subordinate	
	Productive Sectors		Mainly Productive sectors			Mainly private services sectors	
	Machine/Plant operators		Machine/Plant operators			Machine/Plant operators	
	Craft and other trades workers		Craft and other trades workers			Craft and other trades workers	
Socio-Demographic Variables	Men		Men			Men	
	Primary		Mainly Primary educational level			Mainly Lower secondary educational level	
	More Training		Mainly More Training			Mainly Less Training	

Conclusion.

This paper has provided a characterization of ESTW in Europe, by means of a logit model that show the similarities and differences of this population across the Member States. Based on the results of this analysis, three broad groups of ESTW can be identified in Europe in terms of socioeconomic and job characteristics. The profiles depicted for these groups are clearly differentiated by the type of contract, the length of working day, the size of the company, the economic sectors and the occupation. This study is the first attempt in characterize the population of ESTW in Europe using the European Labour Force Survey.

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