WZB discussion paper

Do institutions matter?

Explaining the use of working time flexibility arrangements of companies across 21 European countries using a multi-level model focusing on country level determinants

Heejung Chung[1]

This version 27th June, 2008

Abstract

This paper explores the reasons behind the differences in the use and provision of different types of working time flexibility options of companies across European labour markets with a special focus on the country differences. Competing theories on the cross-country variances of labour market flexibility are tested to examine whether labour market institutions are the driving forces of working time flexibility practices in comparison to other factors such as economic, labour market structures and cycles. It uses a multi-level model which enables examination of companies in the context of the country in which it is embedded in, while including both company and country level characteristics in the explanatory model. In this paper, the issue of flexibility is addressed broadly, thus, it perceives labour market flexibility as a method used for the needs of employees as well as for those of employers. In addition, here the "flexible firm" approach is taken and various flexibility options are considered to be bundles of arrangements with similar latent characteristics and not separate entities. Based on this the paper explains the differences between countries where there are more worker-oriented working time flexibility options to those where flexibility practices are more company-oriented. The data used here is the European Establishment Survey of Working-Time and Work-life Balance (ESWT) from the European Foundation of the Improvement of Living and Working Conditions. This survey covers 21000 establishments in 21 EU member states for the years 2004/2005. The outcomes of the analyses show that indeed institutions, such as employment protection regulations or centralization of bargaining explain the differences across countries in their variance in working time practices. In addition, the strength of unions is associated to countries where companies use more worker friendly working time options and less company-oriented options. Labour market situations and structure of the economy such as deindustrialization or female labour market participation patterns also explain the country differences in working time practices. However, for the worker-oriented flexibility it seems that institutions are more important where as for the company-oriented flexibility economic, labour market situations would be more the driving source.

[1] PhD Candidate, Flexicurity Research Programme & OSA, Tilburg University/AIAS, Amsterdam University
http://www.heejungchung.com
http://www.tilburguniversity.nl/flexicurity

1. Introduction

With labour market flexibility persisting to gain attention as method of adaptation for both workers and companies, there is much interest in trying to find out what explains the differences in flexibility across countries (for example Salvanes 1997, Regini 2000, EC 2006, EC 2007a, Muffels et. al 2008). Some literature focuses on labour market institutions asserting that they are determinant factors of flexibility. For example, Salvanes(1997) note that it is technological change and institutions, such as employment protection legislation and centralization of wage bargaining, that explain for the differences between countries in their labour market dynamics. Others turn to other explanations such as socio-economic structures pressures and cultural changes both in society and production (Mishra, 1999; Standing, 1999; Brewster et al. 1997; Evans 2000; Atkinson, 1987). These explanations of country differences are key issues that need to be addressed to develop policies or environments to facilitate the use of flexibility practices with positive outcomes, and restrict those with negative effects. This paper is an addition to this ongoing discussion and aims to provide explanations of varieties of flexibility practices across European companies focusing on the use of working time flexibility. Also, through testing various theories of flexibility we can see what works and what doesn't, individually but also in combination.

This paper is written as a part of a larger project which examines the working time flexibility of European companies, their determinants and implications. In this project, labour market flexibility is defined in a broader sense, thus including flexibility needs of workers as well as those for companies. As companies adapt to business cycles and facilitate their other needs through the use of labour market flexibility strategies, workers adapt to their life cycles and their needs through it. This notion is now widely accepted and the European Commission addresses this issue in its Joint Employment Report and its new Flexicurity approach, calling for an adequate methods to enhance flexibility for both workers and employers (EC, 2007b) that is "capable of quickly and effectively mastering new productive needs and skills and about facilitating the combination of work and private responsibilities (EC, 2007c)." In addition, this project takes the "flexible firm" approach where various flexibility options are considered to be bundles of arrangements with similar latent characteristics and not separate entities[2]. The project entails four major questions. The first is how company working time practices in Europe can be examined. In a previous paper, it is tested whether numerical flexibility arrangements can be grouped into categories, and what types of groupings can be found. It is found that flexibility arrangements can be grouped and distinguished into those for workers and for companies, empirically, based on behaviours of establishments and their actual work practices (Chung, 2007; Chung et. al, 2007).

The second question addressed in the project is explaining the differences between companies in their use of flexibility practices based on the framework derived. In Chung (forthcoming), it is shown that the line of business the establishment is in, that is the sector as well as size, composition of the work force, work load fluctuations, existence of working time agreements, existence of employee representatives, provision of work life balance facilities, economic situation of the company all were influential factors in explaining the extent to which companies use

[2] More elaboration on this is found in section 3 of this paper.

working time options[3]. In addition, in some countries being within the public sector also has an effect on flexibility behaviours of companies, while not in others. Also, countries explain for no more than 20 percent of the variance between companies in their use of working time flexibility arrangements and this variance is smaller for the country differences one can find in company-oriented working time flexibility option take up (Chung, forthcoming). The limitation to this second paper is that although cross-national variances are found the paper does not explain why such cross-national differences exist. In other words, the question still remains which country characteristics can account for why companies behave differently in different countries. This brings us to the third part of the larger project and the topic of this paper, thus answering the question why there are country variances in the practices of working time flexibility examined in company levels. In this paper a multi-level model is used to tackle this question. Through the use of a multi-level model, we can find the pure country difference, the differences between countries when other characteristics of companies, such as sector, size, composition of its workforce and others are controlled for. In other words, we explain the differences between the working time flexibility practices of European companies when we presume that all other characteristics of the company are the same and the only difference is that they are located in different countries.

The paper is structured as follows. In the next section (section 2) this paper explains more about company level flexibility practices and the relevance of the country level on these practices. In the same section, the paper examines the competing theories on cross-national variations in labour market flexibility to arrive at the main hypotheses. Section 3 provides information over the data and methods used in this paper, i.e. we operationalize and describe the country level independent indicators as well as the dependent variable derived from our main data set the European Establishment Survey on Working Time (ESWT). The outcomes of the multi-level regression analysis follow in section 4. Lastly (section 5), we arrive at some conclusions, policy implications and issues for further research.

2. Country differences in labour market flexibility

2-1. Company level practices and the country level

The practices of companies, that is, the use and/or provision of flexibility options within companies is important in the examination of labour market flexibility since not only do they show the actual take up behaviours of firms they provide information on the actual availability of flexibility options for workers. Employees themselves in most cases cannot autonomously choose various flexibility options and are restricted to those which are used and provided within the companies they work in. In this sense we can see company level flexibility practices as the *final availability* of working time flexibility options for workers which "sets out the possibility and limits of the employees to adapt their actual working hours to their personal needs and wishes"(Riedmann et al., 2006: 1).

The relationship between country level institutions and company behaviour is rather complex. On one side companies are bounded by legal restrictions on the use of various working time flexibilities such as the definition of the normal working hour,

[3] More elaboration on this is found in section 3 of this paper.

over-time and unusual hours etc and the limitations to the use of such options. These regulations are mostly from laws of the country, however can also be derived from sectoral agreements as well as EU directives[4]. However, it is not always the case that companies will stick to this agreement and might use flexibilities though opt-out clauses or out side the legal boundaries[5], or not use any flexibility options at all despite given the opportunity. On the other side, companies are bounded by compulsory leaves and other work-life balance oriented working time options, which can also be set in the national or sectoral level. However, for various needs, such as recruiting and maintaining skilled workers, companies can also provide more than the legal requirement on work-life balance arrangements. Through empirical data on establishments, Den Dulk (2001) and Den Dulk et. al. (2005) show how in countries where advanced statutory provisions are present, employers are not likely to introduce additional work-family arrangements. Rather in countries where public provisions are near absent, this leads to larger employer involvement, where employers introduce workplace arrangements according to their specific needs. In other words, companies choose their own flexibility strategies and act rather autonomously from their institutional environments (Bredgaard and Tros, forthcoming). In fact, previous study shows that countries explain at most 20 percent of the variance between companies' flexibility arrangement take up and even less when we consider take up of flexibility options for employer's needs (Chung, forthcoming).

However, it is also not the case where companies are completely independent of the influences from the country level. Although countries do not determine the behaviours of their firms completely, cross-national variances in company behaviour do exist. This variance in company behaviour explained by countries can result from numerous factors. This can include institutional environments, such as law and policies on labour markets, industrial relation related aspects, labour market and economic market situations, cycles and structures, as well as various cultural aspects such as gender division of work, general societal attitude towards the issues of work-life balance etc. Unfortunately, there are no specific lists of factors that are agreed upon this field of research to be used as the major influential factors. The one used in relating field is the one on labour market institution effects on labour market and economic performances (for example Layard et al, 1991;; Scarpetta 1996; Nickell, 1997; Elmshov at al. 1998). These include employment protection legislation, union strength, bargaining coordination and centralization, tax wedges, unemployment benefit scheme generosity, active labour market policy, etc. However, not all of the institutions used there are relevant for this paper, due to differences in the variable explained. For this reason, we use some of the relevant institutional factors used in the previous studies and add additional factors from other major studies that examine country differences in flexibility, more specifically working time flexibility.

2-2. Review of literature on cross-national variance in labour market flexibility

2-2-1. Labour market institutions

[4] The EU working time directive passed in 1993 sets the maximum working hour to 48 hours a week, as well as regulations on rest, holidays and night shifts. However, it also includes the individual opt-out clause where workers can be asked to work more than 48 hours a week given that they sign an individual agreement with their employers (ETUC: http://www.etuc.org/a/504).

[5] In a research by the TUC, in the case for UK, two-thirds of workers who have worked longer than 48 hours have not signed the opt-out agreement (TUC, 2005).

Labour market regulations

Regulations on labour markets, such as laws on employment protection legislations, working time regulations etc, affect the practices of flexibilities in the company level through allowing or restricting the use of certain arrangements through law or policies. Kalleberg (2001) argues that the likelihood of organizations to utilize numerical flexibility strategies depends on the country's regulatory regime. It has been shown through the example of several countries, that establishments would adapt numerical flexibility strategies as response to economic pressures in countries where national institutions involve few restrictions on managerial decision (Smith et al, 1995; Toharia and Malo, 2000; Kalleberg, 2001). Also, more specifically when examined cross-nationally strict regulations on the cost of firing regular workers has been shown to have somewhat of a positive relationships with the use of temporary contracts due to the fact that they can be used as substitutes (Grubbs and Wells, 1993; Dolado et al., 2001; Booth et al., 2002; OECD, 1999; OECD, 2004; Chung, 2005; Polavieja, 2006). However, there are studies that suggest the contrary. Based on the cross-national comparison study of Australia and New Zealand, Allan et al. (1998) show that despite the substantial difference in the system of labour regulations between the two countries, there were only minor differences in working time arrangements, suggesting that systems of labour regulations may not be a critical factor in determining the use of particular working time arrangements. Brewster et al (2000) also find that despite the fact that the country is a strong determinant in the use of flexible arrangements within a company, there are little correlation between legal regulation and the movement towards flexibility. They note how within each set of national laws there are differences in the way different sectors and different organisations use flexibility. This could be explained through perhaps organisational cultures, experiences and expectations (Brewster et al. 2000: 190; Horrell and Rubery 1991)

There are several ways in which labour market regulations can affect the flexibility practices of companies and we can distinguish the effects of regulations on the external numerical flexibility and those on working time arrangements. In regards to regulations of external flexibilities, there can be substitution or complimentary effects (Kalleberg, 2001; Cappelli and Neumark, 2004). In countries where numerical flexibility cannot be achieved through easy firing and hiring workers based on deregulated regulations we can expect that companies may need to enhance flexibility through use of flexible working hours, thus through working time. In this sense we might expect a substitution effect where in countries where there are stringent employment protection regulations, especially those for regular workers, there may be a need to use working time flexibility arrangements especially those for companies' needs. However, as noted previously, when we consider that companies also use temporary contracts as substitutes for lower costs in firing workers thus external flexibility would be met, this relationship becomes complicated. On the other hand, we can also expect also the opposite effect, where flexible countries are more flexible in all ways, externally and internally, thus showing a complimentary effect between regulations of hiring and the use of various working time flexibility options. If there are more stringent rules on the working time regulations within the country, for example the definition and the restriction on the use of over time and unusual hours, we can predict that companies will not be able to use flexible arrangements as much. If there are legal regulations on the provision of leave schemes and worker's right for flexible working hours to fit work with other responsibilities, we can expect

companies to provide more options for workers' work life balance needs due to their compulsory nature. However, as noted in the previous section, in countries where there are not much state regulations, employers will still be involved in providing worker's work life balance however there may be more variance within these countries.

Labour Relations aspects

Union strength

Union can be against the use of flexible options for companies' needs due to their negative impact on the working conditions of workers and because they are destructive to industrial relations through their effect on segmentation of the workers (Delsen, 1995: 96). Since union membership is usually centred on permanent full-time workers, and because flexible workers have different behavioural patterns and attitudes, rise in atypical jobs, such as temporary contracts as well as part-time in this case, may result in decline in union membership (Delsen, 1995). In addition flexible workers can be seen as competitors to unionized workers (Kalleberg et al., 2003). Unions have always been against long-working hours and over time (Pillenger, 2006; Eiro online, 1999; Eiro online, 2004) as well as irregular hours or unhealthy working time patterns such as nights shifts (Pillenger, 2006). We can expect stronger unions to limit the development of flexible work contracts as well as various working time flexibility that are detrimental to the working conditions of workers. Similarly, employers might be able to introduce flexible contracts and flexible working arrangements that are for the needs of the company more easily where the bargaining power of unions is weak. Deyo(1997) shows that where union power and thus the opposition against unfavourable flexibility is low, countries were able to adopt numerical flexibility strategies to reduce short-term costs (Deyo, 1997; Kalleberg, 2001). Empirically, establishments with low union membership rates have been to shown to have higher probability of using temporary agency work, short-term hires and part-time work (Houseman, 2001) and also this is linked to the intensity of the use of part time work and temporary workers (Abraham, 1990; Houseman, 2001). The causality of this relationship can go both ways. The establishments, and over all countries where union density is low and where union power is not strong, the expansion of the use of atypical work may increase easier. However, it may also be that since in many cases, workers on atypical contracts are not unionized, this may decrease union membership. Kalleberg et al.(2003) argues that the use of flexible staffing arrangements hampers unionizing efforts but also the presence of unions dissuades employers from utilizing these arrangements (Kalleberg et al. 2003: 547). There can also be dilemmas inside unions regarding the use of non-standard work arrangements since they can be used as buffers thus to protect regular workers from lay offs (Oslen 2005). In this case, union membership and use of atypical contracts will coincide.

On the other hand, countries with strong unions are likely to be the countries where more work-life balance flexibility options are provided. Despite the fact that unions are against the expansion of flexibility, they note the importance of working time flexibility in balancing work and life for workers. ETUC has been actively arguing for the flexible use of working time for the needs of workers to combine work with other responsibilities and interests (for example see Pillenger for ETUC, 2006). Also, in their response to the European Commission's Green Paper on modernizing labour law, ETUC also emphasize the importance of the development of working time

flexibility, instead of just implementing external flexibility (ETUC, 2007). In their report on working time, TUC has also argued that flexible working should be extended to all workers through stronger regulations (Fagen et al for TUC, 2006). In addition, union membership has been linked with access to more flexible working time arrangements. The TUC(2005), based on the UK Labour Force Survey Micro data, shows how union members are almost twice as likely to have flexible working time arrangements to facilitate their work life balance than non-members. In the same line we can expect countries with high union memberships to have more work life balance options available in the establishments on average. However, this relationship between union membership and greater access to work life balance flexibility options might only hold true within a countries where generally unions are not strong and membership rates are not high, such as the UK.

Negotiation structure: centralization of bargaining

Centralization of bargaining can be related to the ability of workers and employers in advancing their interests. From the structural asymmetry in the labour market due to the control over the means of productions, employers have much more ways of promoting its interest compared to those of the workers (Offe, 1985; Traxler, 2003). This also entails class-specific preferences between individual (unorganized) and collective (organized) bargaining. Employers will prefer individual unorganized negotiations where as workers will prefer organized collective negotiation to increase their strategic capacities against one another (Traxler, 1995; 2003). However, it has also been argued that a more centralized and coordinated bargaining system can deal with the externalities by internalizing the costs that derive from it, compared to a decentralized, uncoordinated system. This is due to when wage bargaining is centralized and there is a high coverage rate of the bargaining outcomes, it is less clear who will benefit and be harmed from various consequences of various bargaining outcomes (OECD, 1997a:65). In addition compared to single employer bargaining, multi-employer bargaining tends to take bargaining out of competition (Traxler et al, 2001; Traxler, 2003). This would entail that centralization of negotiation would have effects on the regulations or agreements on the use of working time flexibility, thus affecting the use of flexibility options indirectly. The flexicurity countries such as the Netherlands and Denmark can be seen as examples of countries that have highly coordinated social partners with relatively coordinated centralized bargaining systems who have introduced various flexibility measures in the labour market to tackle the problem of unemployment (See Visser and Hemerijck, 1997; Madsen, 2003, 2004; Wilthagen and Tros, 2004). Traxler argues that in the era of internationalization, only multi-employer, thus centralized bargaining can enable social partners to negotiate basic compromises within the framework of an organized industrial relations system (Traxler, 2003: 145).

Negotiation structures have also been connected to the working time patterns of the country (O'Reilly and Spee, 1998; Anxo and O'Reilly, 2000; Bredgaard and Tros, forthcoming). O'Reilly and Spee (1998) derive a statist, negotiated, externally constrained working time regime depending on the negotiation structures of the countries. In the statist working time regime, statutory regulations are the key element governing the use of flexibility and working time patterns and collective bargaining has a restrictive role. These countries have a more normalized type of working hours. The countries that can be included here are Spain and France. On the contrary,

negotiated working time regime typologies are where there is a strong tradition of negotiation between social partners and the state regulatory system only provides a basic framework. Examples of this are Sweden, Finland, Denmark, Germany, Austria and the Netherlands. Lastly, externally constrained working time is where there is free collective bargaining and working time is distributed over a wider spectrum. The countries included here are Ireland and the UK (Anxo and O'Reilly 2000). This theory is on the cross-national variance in the distribution of working hours, not necessarily the use of various working time flexibility arrangements. However, we can expect similar effects of negotiation structures on the use of working time flexibility options, where countries where working time is distributed over a wide spectrum to make use of more options, and visa versa. In addition, Bredgaard and Tros (forthcoming) find that decentralisation is an important precondition for companies in taking up flexicurity policies. In the workplaces in which actors on the company or work place level is the main initiator of the introduction of arrangements, there are more arrangements than in workplaces in which the national level actors such as the government is the main initiator. Based on this, we can predict that when the bargaining level is at the decentralized level companies may use more working time flexibility options.

2-2-2. Economic and labour market situation and structures

Labour market situation

Labour market situations of the country can also affect what types of options companies take up in terms of flexibility. When labour market situations are favourable towards the workers, such as when labour demand is high while there is not enough supply, companies may have to introduce more work life balance need driven flexibility options to recruit and maintain their needed workforce. On the other hand, workers can be pressured into taking up various employers' need driven working time flexibility options, when the labour market situations are favourable towards the employers, that is, high supply and less demand, thus when the country has high unemployment. In both cases, the labour market situations would affect the bargaining positions of workers and employers to indirectly affect the use of working time flexibility. Houseman (2001) based on a US based study on establishment's behaviour of taking up flexible staffing arrangement such as part time work and temporary employment found that employers are more likely to demand workers in flexible arrangements when the market demand is tight, where as workers prefer regular arrangements and are less likely to accept flexible arrangements when the market supply is tight (Houseman, 2001:163). However, there is also evidence that labour shortages may drive companies to use more flexible working time options to adapt to the situation. For example, in Denmark, to counter labour shortages companies use of flexible working time arrangements that allow for extension of working hours (EIRO online, 2006).

Economic globalization

Economic globalisation is another factor that is perceived to increase the need for flexibility in the labour market. There are many ways in which globalization affects the labour market. First, liberalization of the world economy or countries' integration into the world economy increases competition of national economies. This leads to changes in production systems of firms as well as changes in labour demand.

'Lean' production or 'just-in-time' inventory are the new types of production systems that adjust production and the labour force to labour market fluctuations more quickly than before, resulting in growth in non-standard work (Mishra, 1999: 25). Also, increases in the freedom of capital to move to other production sites mean that workers have to compete against low wage workers in other countries, thus decreasing the demand for low-skilled labour. The competition for product and capital market also brings about an increase in the elasticity of wages and labour demand, especially for workers that can be substituted by foreign workers (Rodrik, 1997; Sapir, 2000). The bargaining power of labour weakens when elasticity of labour increases especially in periods of chronic unemployment. This decrease in bargaining power enables capital to achieve flexibility in many ways, including employing workers on atypical contracts such as temporary contracts as well as involuntary part-time work (Mishra, 1999; Rodrik, 1997) as well as using unusual hours and overtime. Based on this, we can assume that globalization, or increased market integration into the global market will increase companies' needs and bargaining power to use flexibility options that are for companies' needs. On the other hand, due to the respective loss of worker's bargaining power, this may have negative impact on the provision of work life balance options to workers.

In addition, we can expect economic globalization, when in the form of foreign investment or foreign owned companies, to affect the work place culture of the companies within the host country. For example, multi-national companies may keep their human resource management cultures, which will include working time practices and provision of work life balance options, regardless of where the establishment is located. Coller(1996) finds that head offices of multinational companies indirectly deals with the local offices to ensure a degree of consistency of companies between different countries and different institutional environments. This is more so the case when the host country has weaker institutions (Muller, 1998)[6].

For both globalization and labour market situations, there may be a reverse causality relationship. In countries where the use of flexibility is prevalent, this may facilitate globalization and labour demand, although it may also make the environment unfavourable for both.

Prevalence of sectors and economic structure:

The prevalence of a certain industry or sector within the economy can also be a factor that determines the country's culture in the use of flexibility arrangements. In other words, when there are high proportions of sectors that have been seen to use more flexibility arrangements, this may change the behaviours or company culture of the whole country.

For example, prevalence of the public sector may effect the provision of work life balance related working time flexibility within companies. Many of the previous empirical studies on companies' provision of work life balance options point out public companies provide more arrangements than private companies on average (Evans, 2001; OECD, 2001; Plantenga and Remery, 2005). The reasons are because public sectors are less prone to market pressures and may employ larger proportion of

[6] See International Journal of Human Resource Management Vol.9 No.4 for an in dept discussion on this issue.

women. In addition to this public sectors are seen to be under more pressure to take gender equality norms into account to set precedence for other companies to follow (Evans, 2001; OECD, 2001; Plantenga and Remery, 2005). Also public sector organizations often take the lead in adopting work-family arrangements (Den Dulk, 2001; Evans, 2001; Den Dulk et al., 2005). From this we can expect that in countries where there are high shares of public companies, the whole working culture of the country may change into that which is similar to the public sector, which would be in most cases more worker friendly. This would especially be the case where there are large proportion of public companies and large coverage of collective agreements. Public companies may drive the agreement which would then be applicable to the whole sector to affect even the private sector companies. It has been shown using the ESWT data that the effect of being within the public sector on the provision of work-life balance options. is different across countries (Chung, forthcoming). This difference may be due to the prevalence of the public sector within the country, where there is a large public sector there may not be a big effect of being within the public sector, where as when there is a small public sector, they may be distinguishable in their practices of working time flexibility.

We can expect somewhat of a similar effect for the size of the service sector or through the process of deindustrialization. Services sector generally use more flexibility arrangements than industry sectors (Anxo et al., 2007a, 2007b; Chung et al., 2007; Kümmerling and Lehndorff, 2007). The growth of flexible working patterns has been linked with the growth of the services sector (Houseman, 1995; Kalleberg, 2000). The increase of service sector or the process of deindustrialization may change the work culture to increase the use of flexibility practices throughout the economy, to the non-services sector as well.

2-2-3. Gender regime: female labour participation as a proxy for gender work division culture

Another aspect we need to take in to consideration is the cross-national variances in the gender division of work and the participation of women in the labour market (for example, Lewis, 1992; Ostner and Lewis, 1995; Gornick, Meyers and Ross, 1998; Sainsbury, 1999; Crompton 2001; Stier and Lewin-Epstein, 2001; MacDonald, 2004). Lewis (1992) critiqued the welfare state regime typologies for not incorporating the relationship between unpaid as well as paid work and welfare. She noted that when we take the prevalence of the traditional male-breadwinner family model into account, we can arrive at three types of countries. They are the historically strong male breadwinner, the modified male-breadwinner and lastly the dual-breadwinner societies (Lewis, 1992). Expanding this idea, Crompton (2001) examined the earner-carer divide throughout countries to derive models that range from traditional to less traditional depending on who is responsible for income and care. Income responsibilities can fall either on the male or female on full or part-time basis, and care responsibilities can be addressed by the male, female, both, the state or the market. The Nordic countries have the dual-earner and state-carer model, while the US is an example where there is a dual-earner and market-carer. The gender division of work or the gender regime may be a deciding factor in explaining the differences between countries on their use of working time flexibility. This is especially important for one of the main purposes of working time flexibility is to balance work and life of workers. Countries where dual earner model is the norm, there are more women in the labour market. It is highly likely that in these countries,

there will be more working time arrangements that are worker oriented or that is more suitable to balance work and life, such as flexible working schedules or various leaves. This may be different depending on whether if it is the market that provides the care or the state/society.

The relationship between women in the labour market and more work life balance options in the country can go both ways. In countries where the gender work-care division is more equal and women's participation in the labour market is the norm, it is likely that labour markets are made to be more women or family friendly. Thus in these countries the country in general and specifically companies may (have to) provide more work life balance options. It may also be the case that countries where there are more work-life balance options women are able to participate in the labour market easier thus increasing the labour market participation of women.

3. Data sets and methods

In this section, we operationalize the various theories of country variance of working time flexibility and provide some descriptive data of the variables used in this paper. Before that we examine the main data set used in this paper, namely the ESWT, and derive the dependent variable used for the analysis of the paper.

3-1. ESWT and working time flexibility

The ESWT(Establishment Survey on Working Time and Work-life Balance) provides us with the information on the establishment level of various arrangements that are created within the firm to enhance the internal flexibility and to adapt to workers' preferences for combining work and non-work activities. It covers 21 EU member states EU15 and six new member states (Cyprus, Czech Republic, Hungary, Latvia, Poland and Slovenia) and the survey was conducted between 2004 and 2005. It includes 21,000 establishments where personnel managers and, if available, employee representatives were interviewed. This survey covers a wide arrange of arrangements of which data are not available in other sources. Of the information gathered within the ESWT in the analysis the following arrangements as listed in Table 1 are used[7].

In this paper we take the "flexible firm" approach. In other words, our interest is in the organization of working time flexibility practices of companies, not in their take up of single arrangements separately but in how firms use and combine the various arrangements. Flexibility is not just a one dimension matter which can be measured as more or less flexibility, but is multi-dimensional and it is important to see what type of flexibility is developed in addition to the extent of it (Kalleberg, 2001; Gareis and Korte, 2002; Chung, 2007; Chung et al, 2007). Also, as there are numerous strategies companies and workers can use to make work more flexible (Atkinson, 1984), there can be several substitution as well as complimentary effects. This means that the examination of the use of a single arrangement or several arrangements separately will not show us the complete picture of how companies

[7] We have gathered as much information as possible concerning the arrangements used in the company, in regards to flexibility options. This may entail that some of the arrangements can be considered as having similar characteristics. However, the choice of variables was made based on their substantive significance as an independent and a different type of option serving different needs.

behave in regards to the needs of flexibility. What is important is not only the use of a certain arrangement, but the combination of various arrangements or various types of flexibility.

Table 1. Working time flexibility arrangements used in the analysis

Main Category	Subcategories	Information[a]	Proportion[b]	Note
Part-time work	-	Use	O	
Right to reduce working hours	-	Available	X	The possibility of full-time employees to go to a part-time contract [8]
Unusual hours		Use	X	Includes working at night, Saturdays and Sundays.
Shift work	-	Use	O	Changing working hours due to the nature of the job
Flexible working hours		Use	O	Employees have possibility to adapt the time when they begin or end their daily work
Overtime	-	Use	O	Any overtime since the beginning of this year
Long-term leave	For care or illness in family	Available	X	Paid and unpaid
	For education	Available	X	
	For other purposes	Available	X	
Retirement schemes	Phased retirement	Available	X	only asked to companies with 50+ workers[9]

a: Use questions were asked whether the company has used or is using the arrangement, available questions were asked whether the company has or make such arrangements available for its workers.
b: x indicates no information, o indicates that there is information on the proportion of workers in such arrangements

[8] This is measured as "can get appropriate job quickly" "has to wait for some time" as there being a possibility, and "possible only exceptionally" "no chance" as there not being a possibility. This question was asked divided into skilled workers and unskilled workers and here the average score for both was used.

[9] Companies without workers who are 50 or older are considered not to have this arrangement.

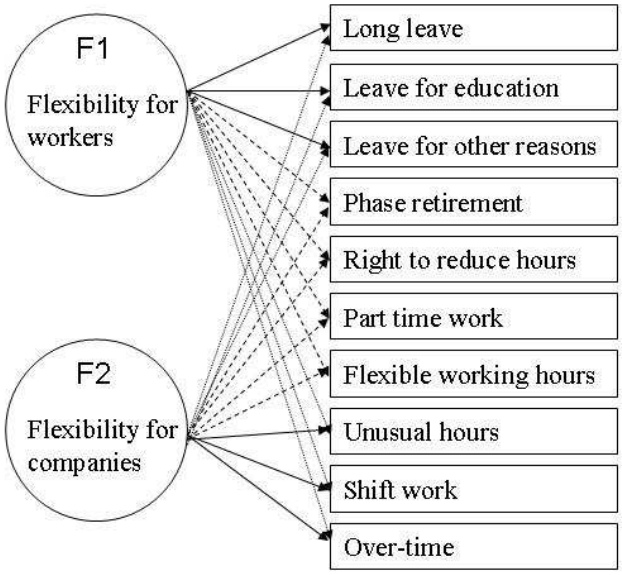

Figure 1. Latent components of working time flexibility, the dependent variable

Here we run a factor analysis which groups numerous indicators according to their latent characteristics. A varimax orthogonal method was used using information to derive at two factors (see Annex 1 for outcome table)[10]. The first factor was named flexibility for workers and the second flexibility for companies. This naming is based on the high loadings of the arrangements on each factor, such as the three leave schemes for the first, and unusual hours, overtime and shift work on the second. The arrangements which are considered to be flexibility arrangements that can facilitate the needs of both sides load in both of the factors. The factor scores for each company are then used as dependent variables indicating the two components of companies' working time flexibility practices, the worker's working time flexibility component and the company's working time flexibility component. A graphical representation of these components can be somewhat as in Figure 1.

Table 2 shows the country scores for the derived company working time flexibility components (factors), without having controlled for the company level characteristics. The higher the score, the higher the probability of the country having companies with more flexibility options for workers or companies. As we can see from Table 3, the northern European countries, that is Finland, Sweden and Denmark along with Poland and somewhat the Netherlands are the countries where there are companies with high scores for the flexibility for worker's component. UK, Sweden and Germany are the countries where the flexibility for companies component score is high on average. For both components, it is the southern European countries, Greece, Spain, Italy, Portugal and Cyprus along with Slovenia, where the lowest average scores are found. Other countries are in between the two country groups, but in general we can see that countries where one component score is high the other tends to be high as well and visa versa.

[10] Here we use an exploratory factor analysis method, due to that one of the hypothesis that is being tested is whether indeed working time flexibility options can indeed distinguished into those for workers and companies. Also firstly we tested to see whether the two factors were correlated, but was found that there was no high correlations between the two, thus we chose a varimax solution.

Table 2. Country scores for working time flexibility components[11]

	Working time flexibility for workers	Working time flexibility for companies
Belgium	0.07	0.19
Denmark	0.81	- 0.11
Germany	- 0.03	0.25
Greece	- 0.60	- 0.82
Spain	- 0.37	- 0.46
France	- 0.12	0.13
Ireland	- 0.08	0.13
Italy	- 0.30	- 0.28
Luxembourg	- 0.29	- 0.06
Netherlands	0.37	0.03
Austria	- 0.35	0.11
Portugal	- 0.48	- 0.90
Finland	0.95	0.06
Sweden	0.56	0.29
United Kingdom	0.07	0.43
Czech Republic	0.11	- 0.03
Cyprus	- 0.54	- 0.37
Latvia	- 0.06	0.12
Hungary	0.08	- 0.73
Poland	0.71	- 0.27
Slovenia	- 0.21	- 0.42
Mean	0.10	0.14

3-2. Country level explanatory variables

In this section we operationalize the various theories examined in section 2 and go into detail about the data used as indicators for each country characteristic. In this section, the theories are grouped into four different categories. First, the labour market institution, second labour relations, thus union strength and bargaining structures, third, the economic, labour market situations which includes from the previous section, labour market situation, economic globalization, prevalence of the public and service sectors, and lastly gender regime. The descriptive table of the indicators is in the Annex.

Labour market regulation

For a measurement of labour market institutions we use the Employment Protection Legislation index (EPL) provided by the OECD, which refers to the regulations that concern hiring and firing of workers on both permanent and temporary contracts (OECD, 1999:50). EPL index for regular workers concerns the costs for employers of firing workers on regular contracts, while EPL for temporary

[11] Summary of factor scores

Variable	Obs	Mean	Std. Dev.	Min	Max
WTF for workers	15787	0.10	1.01	-1.63	2.21
WTF for companies	15787	0.14	1.05	-2.27	2.46

workers refers to the regulations concerning hiring practices. There are many critiques on the use of EPL indexes (Bertola et al., 1999; Boeri et al., 2000). For example, in many countries collective labour agreements in either the sector or company level may change the strictness of the regulations derived from laws (Schils 2007; Houwing and Schils, forthcoming) resulting in the EPL index not truely representing the strictness companies have to adapt to. However it is the most commonly available data comparable across many countries. For these reasons, it is one of the most used indicators to measure flexibility of the country or to represent the rigidity of the labour market institution of a country (e.g. Pissarides, 1990; Layard et al, 1991; Nickell, 1997; Esping- Andersen, 2000; Regini, 2000; EC, 2006; Muffels, 2007).

In this study we use the EPL for regular workers and EPL for temporary workers. There are no indexes that are readily available to use as proxies to measure the strictness of labour market institutions on working time across countries. It is possible to use proxies such as the regulation on working hours such as limitations in the law on overtime or annualization of hours, definitions used for unusual hours etc. For leave schemes we can examine the existence and generosity of various leave schemes in the institutions. However, these will all be proxies measuring one of the various working time arrangements to represent a whole group of options, so they are not used here. However, we use EPL indices also as proxies that indicate, in a more lose way, the strictness of labour market institutions in general, presupposing that countries that have stringent regulations on firing and hiring workers will also have more stringent working time regulations.

Labour relations

There are three different factors relating to bargaining institutions that must be taken into consideration when examining labour relations of a country. They are union density, collective bargaining coverage rate and centralization of bargaining. Centralization describes 'the locus of the formal structure of wage bargaining' (OECD, 1997a:70). It describes the level where wage bargaining and negotiations take place, and it varies from company or plant levels to central, national level negotiation by peak organizations.

Both trade union density and collective bargaining coverage rate represent the union strength at the bargaining table. Union density is the percentage of workers that have membership in the union, and here it refers to 'net' members excluding those who are non- active (OECD, 2004b:144). Collective bargaining coverage rate measures the extent 'salaried workers are subject to union- negotiated terms and conditions in employment' (OECD, 2004b:146). The relationship between the two measures is complex. Traditionally, union membership is used as the prime measure of the power base of unions and their capacity for collective action (Shorter and Tilly, 1974; Korpi, 1983; Ebbinghaus and Visser, 1999). However, many countries have administrative rules and extensions of wage agreements that supplement union representation in wage bargaining (Scarpetta, 1996:54; Buti et al., 1998:24), making it unnecessary for workers to become actual members of the union. For this reason the collective bargaining coverage rate can be perceived as a better measurement of union power. On the other hand, Buti et al. note that the difference between the two can be interpreted as "artificial union power" meaning the strength of unions which is not based on unions' ability to gain support from workers, such as membership (Buti et al. 1998: 24). Centralization and collective bargaining coverage rates are correlated in the sense that high coverage rates indicate more workers are covered by agreements bargained usually at the more central, national or industry, level rather than through

individual agreements. This brings problems of multicollinerarity when both centralization and collective bargaining coverage is taken in the model. For this reason, we include union membership and centralization in our model to examine the effect of union strength and centralization separately.

Here we use the data gathered by the European Foundation (2007) which gives information for the net trade union density in 2004, collective bargaining coverage rate is from 2002, and the centralization index which indicates at which level wage bargaining takes place (for specific methodology see European Commission, 2004:41).

Economic and labour market situation

To examine labour demand and supply or the labour market situation of the country, we use the unemployment rate for the past five years. This will indicate the general trend in demand and supply in the labour market of the previous years. We can measure economic globalization through the inflow and outflow of capital and goods. These can be measured by foreign direct investment as a percentage of GDP and trade of goods and services as a percentage of GDP, the former as a proxy of flow of capital and latter flow of goods and services. Although the two indicators are both measurement of the extent to which the country is exposed or relies on global markets, the former also can be used as an indication to the extent the foreign companies are established in the country, which may change the work culture of the country.

As the measurement for the prevalence of the public sector, we have aggregated at the country level the number of companies which have answered that they are within the public sector from the ESWT data set, thus arriving at the percentage of companies that are within the public sector. We have weighted this number by the employee weight, which takes the size of each company into account, which results in the amount of employees employed in public companies. Using the data from ESWT brings continuity of the definition used of what being within the public sector entails. Deindustrialization or the prevalence of the service sector is measured here as the percentage of service sector employment as a percentage of dependent employment. All data used from economic and labour market situation is from Eurostat, with the exception of prevalence of the public sector.

Gender regime

There is no widely accepted grouping of countries to indicate their gender regime typology that shows which carer-earner model the country is. We can use other proxies such as female labour market participation to indicate the gender division of work. In this paper we use female activity rate average for 2001 to 2005 from Eurostat. This indicates the amount of women participating in the labour market thus indicating the extent to which they are earners. This does not take into account the differences in women participating in the labour market part-time and those participating full-time, which does not distinguish between 1.5-earner household countries with two-earner household countries. In addition, women's participation in the labour market may not necessarily mean they are relieved from being carers of households. In a report for the European Foundation, Burchell et al., show that even when women are employed, there is still an unequal distribution of unpaid working hours between men and women regardless of their paid working hours (Burchell et al., 2007:36). However for the current analysis we believe that labour participation rates provide sufficient distinction between countries and their gender regime characters.

Table 3. Summary of the variables and main hypotheses of this paper

Variable	Effect on working time flexibility for workers	Effect on working time flexibility for companies
Institutions: EPL regular workers, temporary workers	Negative : consistency between regulations and practice	Negative: complimentary of external flexibility and internal flexibility, consistency between regulation and practice Positive: substitution effect between external and internal flexibility
Union strength	Positive: strong unions for better working conditions	Negative: strong unions against/block use of flexibility detrimental to workers
Centralization	Positive: centralization means more ability of unions to advance their interests Negative: decentralized countries have more flexicurity policies	Positive: centralization entails countries' social partners to internalization of costs Negative: decentralization more power of employers to advance their interests
Labour demand: unemployment rate	Negative: enhanced worker's negotiation power when low, or no need to provide WLB options for worker recruitment strategy when high	Positive: enhanced employer's negotiation power Negative: no need to use flexible hours to adapt to labour shortage
Globalization: FDI, trade	Negative: increased competition, loss of negotiation power or workers ?: importing company cultures of the head quarters	Positive: increased competition, lean production, increased negotiation power of employers
Prevalence of public sector	Positive: public sector driven work culture	Negative?: public sector driven work culture
Prevalence of service sector	Positive?: service sector driven work organization	Positive: service sector driven work organization
Gender regime: female participation	Positive: WLB to facilitate female participation	-

4. Outcomes[12]

This section examines the outcomes of the analyses. Firstly we examine the amount of variance in the country level to be explained. Using the multi- level model, we can explain to what extent countries explain for the company level working time flexibility practices (level 2, country level variance) even when we control for various company and sector characteristics. Afterwards, the variables listed in the previous section are tested to see how they explain for this variance separately and then in combination, thus controlled for other characteristics.

4-1. Country level variance

In this section, we examine the country variances that need to be explained from our models. First, we examine the variance explained by the country level

[12] All outcomes are available upon request.

without having taken account of (controlling for) the company level characteristics. Here we examine the variance explained by three levels, the country, sector and the company. Although sector can also be considered one of the company characteristics, it can also be considered a level, especially when we consider the various negotiations and policies made in the sector level. The empty model can be shown as the following equation. Here y indicates the factor scores for each company (*i*), embedded in sectors (*j*), and countries (*k*). As we can see from the equation, the error terms for each factor scores are divided into three levels, thus the company, sector and country. The proportion of variance distributed to each level is thus calculated as the equation below. The same method applies to the proportion for sector and company levels as well and they result as the graph shown in Figure 2.

$$
\begin{aligned}
y_{ijk} &= \beta + v_k + u_{jk} + e_{ijk} \\
v_k &\sim N\left(0, \sigma_v^2\right) \qquad \forall k \in (1, \ldots, K) \\
u_{jk} &\sim N\left(0, \sigma_u^2\right) \qquad \forall j \in (1, \ldots, J) \\
e_{ijk} &\sim N\left(0, \sigma_e^2\right) \qquad \forall i \in (1, \ldots, I)
\end{aligned}
$$

$$
country \text{ var } proportion = \frac{\sigma^2{}_v}{\sigma^2{}_v + \sigma^2{}_u + \sigma^2{}_e}
$$

Note: *i*: company level, *j*: sector level, *k*: country level
v: country level error *u*: sector level error *e*: company level error

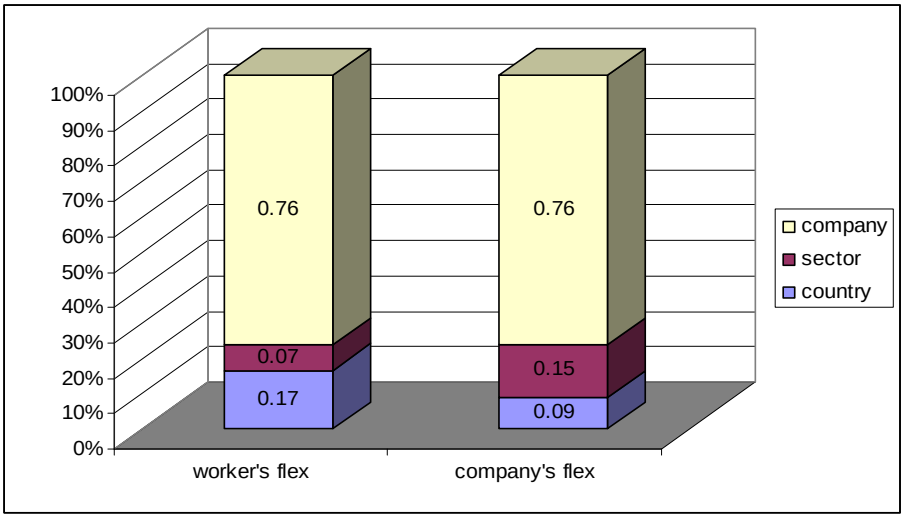

Figure 2. Variance explained by country, sector and company levels for the working time flexibility components

As we can see for both of the two working time components company characteristics or company level attributes play the most important role, explaining approximately 76% of all variance for both components. For the worker's working time flexibility component, the country level takes up approximately 17% of all variance, where as sector takes up only 7%. On the other hand, for company's working time flexibility component, the country level can explain only 9% of all variance where as now, the sector level explains approximately 15% of the variance.

Box: Control variables: company level characteristics:

1) Sector – 13 category – reference: manufacturing
2) public vs. private sector
3) Company size – 6 categories[13]
4) Composition[14] – proportion of female workers – 5 categories
   " skilled workers – 5 categories
   " younger workers (younger than 30) – 5 categories
   " older workers (older than 50) – 5 categories
5) Collective agreement on working time – dummy
6) Existence of employee representative body – dummy
7) Workload variation – daily – dummy
   weekly – dummy
   seasonal – dummy
8) Economic situation of the company – 4 scale[15]
9) Use of temporary contracts - dummy
10) Use of work-life balance facilities[16] – dummy

Outcomes:
The outcome of this analysis is as follows. For the flexibility component for workers, service sectors usually have higher scores compared to manufacturing and other industry sectors, with the exception of hotel and restaurants sectors, and the education and financial intermediation sectors having the highest scores. On the other hand, the flexibility component for companies, there was no clear cut division between service and industry sectors. Construction sector along with financial intermediation have the lowest scores, where as hotel and restaurants and health and social work have the highest. In both accounts, bigger companies, with higher proportion of females have higher flexibility component scores. However, where as the one for workers firms with high proportion of skilled workers show higher scores on the other hand, the one for companies, firms with high proportion of younger workers have higher scores and firms with high proportion of skilled workers have lower scores. Companies with collective agreements on working time, an employee representative, temporary workers, work-life balance facilities score high in both components. Variation of work load is also important but variation in the shorter term is important for flexibility for companies, where as variation in the longer term is important for flexibility for workers. Companies in good or better economic situations seem to have more work life balance oriented working time flexibility within their firms. The effect of being within the public sector did not have a significant relationship with either of the flexibility components, however, this relationship varies between countries.

This variance changes when we take the compositional effect of the company level variables into account, in other words, if we control for the various company level characteristics and examine the pure differences between companies that share all other characteristics that may affect their working time flexibility practices but only differ in which country it is located in. The simplified version of this equation is as below. Here Xij indicates the company level explanatory variables, used here as

[13] 10 to19, 20 to 49, 50 to 99, 100 to 199, 200 to 499, 500 or more.
[14] Less than 20%, 20% to less than 40%, 40% to less than 60%, 60% to less than 80%, 80% or more.
[15] Very bad, quite bad, quite good, very bad.
[16] Here, they are kindergarten and crèche, other professional help for children, professional help for household management, other facilities.

control variables (see box for details), and X_j indicates country level explanatory variables. In the initial, empty model no X_j variables are included. Here the country variance proportion is the one left when company characteristics in the box are controlled for and the effect of being within the public sector is allowed to vary across country.

$$y_{ijk} = \beta_{0ij} + X_{ij}\beta + X_j\gamma$$
$$\beta_{0ij} = \beta_0 + u_{0j} + e_{0ij}$$
$$\beta_{13j} = \beta_{13} + u_{13j}$$
$$\begin{bmatrix} u_{0j} \\ u_{13j} \end{bmatrix} \sim N\left(0, \begin{bmatrix} \sigma^2_{u0} & \\ \sigma^2_{u013} & \sigma^2_{u13} \end{bmatrix}\right) \qquad \forall j = (1,\ldots,J)$$
$$e_{0ij} \sim N\left(0, \sigma^2_{e0}\right) \qquad \forall i = (1,\ldots,I)$$
$$country\ \text{var}\ proportion = \frac{\sigma^2{}_{u0} + \sigma^2_{u13}}{\sigma^2{}_{u0} + \sigma^2_{u13} + \sigma^2{}_{e0}}$$

Note: *i*: company level, *j*: country level
β_0 = coefficient for constant, β_{13} = coefficient for effect of being a public sector company
u: country level error, *e*: company level error
This model allows for random slopes for the effect of being within the public sector (β_{13}) across countries.

$$\text{Country variance proportion} = \frac{\text{country variance of constant+ country variance of being a public sector}}{\text{country variance of constant+ country variance of being a public sector +left company level variance(error)}}$$

The variance after taken sector and other company level variables into account, was 18% of all unexplained variance for worker's flexibility related WTF component, and 16% of all unexplained variance for company's flexibility related WTF component[17]. This is the variance we are trying to explain through the numerous theories noted in the previous sections.

[17] In this analysis, sector is taken as a company level fixed effect and not as a separate level. The reasons for this is because sectors are cannot be seen as a random grouping nor is it a sample coming from a bigger distribution of sectors. The 13 sectors are of a fixed nature and are exhaustive of all sectors that can exist, for these reasons we use them as fixed effects. Also, here the key focus is on the country level, so using sector as a separate level will not add any information. In addition this variance is the variance when the effect of being within the public sector was allowed to vary across countries (random slope), thus adding more variance across countries.

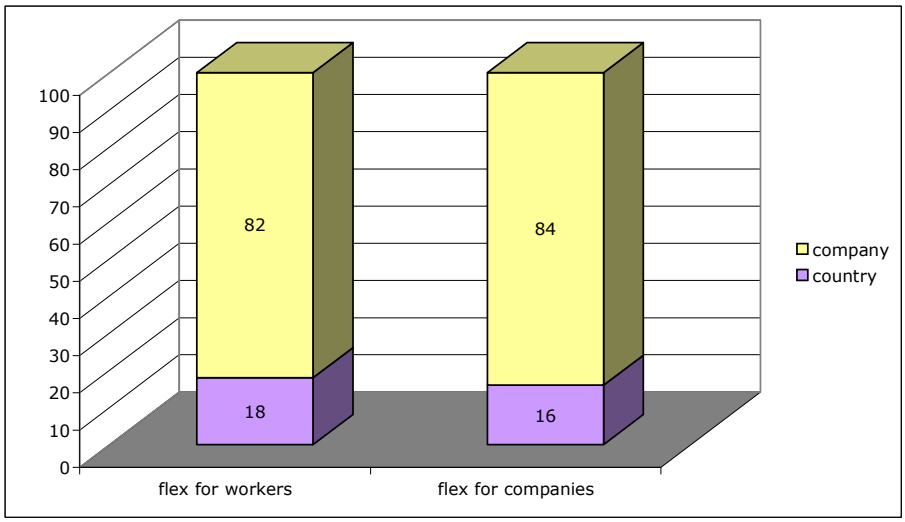

Figure 3. Variance left after taken composition effects (company characteristics) into the model + cross national differences in the effect of being within the public sector

Country level variables: taken separately

Now, we include the various indicators listed above separately to see their effect in explaining the variance of the company level working time flexibility. As we can see from the Table 4, only few variables are shown to have positive effects on the working time flexibility component scores. Firstly when we examine the effect on the worker's flexibility related WTF component EPL for temporary workers is negatively related to the worker's WTF component. On the other hand, the size of the public sector, female activity rate and union density are positively related to the worker's flexibility. For companies WTF, EPL for temporary workers as well as regular workers come out as having negative relationships, where as the size of the public sector comes also as having a positive relationship and here service sector employment also seem to be positively related to the use of various company need oriented working time options. From this outcome we can see that countries where the regulations for the use of temporary workers are less stringent, there seems to be more use of working time flexibility in the company for both workers and companies, thus suggesting a complementary effect. The relationship we find between EPL for regular workers and WTF components albeit not big, confirms this theory. However, when we consider that this effect holds when the use or non use of temporary contracts within the companies are controlled for, it can also be the case that both of the EPL indices here represent less stringent rules on the labour market policies in general. In this case we can interpret the outcomes as countries where there are less restrictive labour market institutions there are more flexibility in the practices as well, thus showing somewhat of a consistency between institution and practice.

In countries where there is a prevalence of public sectors, there seems to be more use of WTF arrangements for both companies and workers but the relationship is stronger for the latter case. This confirms the theory examined in the pervious section, however what the relationship between public sector prevalence and company oriented WTF means is yet to be concluded. Companies in de- industrialized countries seem to have on average more WTF arrangements for companies' needs as well, regardless of the fact that they are within the service sector or the industry sector, which confirms to

our hypothesis. Countries with strong unions seem to have companies with more WLB related working time options. This is also the case for countries with more females participating in the labour market which confirms our hypothesis that it worker's WTF component scores will be high in countries where there are more needs to facilitate women in the labour market. Although this could also entail that those countries where on average more work life balance oriented working time flexibility options are provided, women participate more in the labour market. In addition, we can see that countries where bargaining is done in the central level, there are more working time flexibility usages for both workers and companies. However, this relationship is not significant, and changes when we control for various country level characteristics as we will see in the next section.

Table 4. Effect of various country level characteristics taken separately

	Worker's flex WTF	variance (% explained / left variance)		Company's flex WTF	variance (% explained/ variance)	
Empty model [a]		0	165		0	133
EPL regular	(-)	11	147	(-)*	8	123
EPL temporary	(-)***	27	120	(-)**	14	115
Union density	(+)*	10	149	(+)	2	131
Centralization	(+)	3	160	(+)	7	124
Unemployment average	(+)	4	159	(0)	0	133
FDI as % of GDP	(0)	2	162	(0)	0	133
Trade as % of GDP	(0)	0	165	(0)	5	127
Public sector size	(+)***	30	116	(+)*	13	116
Service sector employment	(0)	0	165	(+)**	20	106
Female active rate average	(+)***	21	130	(+)	9	121

a: controlling for company level characters and allowing variance between countries in the effect of being within the public sector

*: significant at the 0.1 level, ** : significant at the 0.05 level, ***: significant at the 0.01 level

Note: When EPL is taken Luxembourg and Cyprus is excluded from the analysis.

Country variables: taken all together

The relationship we find in when the country level variables are taken separately can show us how various country level characteristics affect WTF components individually, however the relationships found can be driven by other factors which are correlated to the variable. In the model where all the variables are put in together, we are essentially examining the effect of the variable, after taken all the other country level characteristics into account. In the other words, we are testing each theory controlling for other characteristics, thus finding the added value/effect on WTF components purely due to the changes in the specific country level variable can be seen when we incorporate all variables into the models. This approach also allows us to test the robustness of the model.

When we include all indicators that represent country characteristics into the model, we are able to find more significant results in comparison to the single indicator model in Table 4. For worker's flexibility WTFs, the indicators combined explains for approximately 66% of the variance in the country level. All of the

indicators that were significant individually were found to be significant even when other country level variables were controlled for with the exception of the size of the public sector which loses its significance. This may have to do with the fact that female activity rate is correlated to the size of the public sector (See Annex 3) and the former cancels out the latter when put in together. The effect of union density on the use of various worker-oriented WTF is stronger when other country level variables have been taken into account. There are additional indices which have turned to be significant after other variables are controlled for. The effect of labour market situations on the use of worker's flexibility WTF component showed the opposite of our hypothesis, where high unemployment is positively related to more use of worker oriented WTF. It entails that countries with high unemployment seem to have more worker oriented WTF. However, this may have to do with the relationship between other variables, such as union density and trade average, both of which are negatively correlated to unemployment averages. We can also think of situations where companies use leaves, which takes up a great majority of the worker-oriented WTF, as buffers instead of dismissals. In other words, when there is high demand for goods and when there are labour shortages companies may not be able to provide much leaves since there are is no excess labour. However, when the opposite is the case, then companies may encourage workers to take (un-paid) leaves until economic situations improve. Lastly, it can be due to reverse causality, where the use of worker oriented WTF increased unemployment.

Table 5. Regression outcome with all country level variables

Dependent	Worker's flexibility	Company's flexibility
EPL regular	- 0.002(0.072)	- 0.093(0.103)
EPL temporary	- 0.159(0.043)***	- 0.145(0.062)**
Union density	0.839(0.233)***	- 0.812(0.338)***
Centralization	- 0.415(0.278)	0.689(0.405)*
Unemployment average	0.068(0.016)***	0.048(0.022)**
FDI as % of GDP	0.000(0.025)	- 0.040(0.037)
Trade as % of GDP	0.006(0.003)**	0.007(0.005)
Public sector size	0.000(0.004)	0.001(0.006)
Service sector employment	0.004(0.008)	0.032(0.012)***
Female activity rate	0.015(0.007)**	0.019(0.010)*
Remaining country variance	56 (66% explained)	51 (62% explained)

*: significant at the 0.1 level, ** : significant at the 0.05 level, ***: significant at the 0.01 level
Note: of the company characteristics public sector effect was allowed to vary across countries for both factors
Companies in Luxembourg and Cyprus are excluded in this analysis

Also, economic globalization as in percentage of trade also opposite to our hypothesis comes out as being positively related to worker flexibility related WTF. This may be due to that small countries that are relatively doing well off, such as Luxembourg, Belgium, Ireland, the Netherlands and Austria, have more exposure to globalization and higher trade proportions. This may entail that globalization may enhance competition in the country, but may have different implications for different countries of different economic development levels. Also it can be due to reverse causality where countries with more worker oriented flexibility options were able to facilitate increase in trade more than others. Although the relationship is insignificant,

we can see that the direction of the relationship between worker-oriented WTF and centralization of bargaining has changed. As we can see when we control for other country level variables, countries with decentralized bargaining are now the ones with more worker-oriented WTF.

For companies flexibility approximately 62% of the total country variance is explained by the use of all country level characteristics. In addition, the effect found in Table 4 for the EPL for temporary workers as well as service sector size is confirmed in the combined model. However, the size of the public sector, which was significant when taken separately seize to be significant in the latter model just as the case for worker's WTF. On the other hand, unemployment rate as well as union density and centralization all comes out as having significant effects to the use of company's need driven WTF options. The relationship between unemployment rates and company WTF component scores implies that in times of labour demand shortage there may be a shift in negotiation powers towards the employers for them to negotiate working conditions, thus increasing the use of company-oriented WTF options. In addition, we find that countries where net union density is low, thus a country where most probably the unions are weak, companies use more company oriented WTF options than in countries where the union power is strong, which correspond to the conclusion we get from the worker-oriented WTF component. Where bargaining is centralized there are more options for companies' flexibility even when other things, such as union density, are controlled for. This may indicate the ability of the centralized coordinated systems to adapt to needs of flexibility better than the decentralized systems. However, this may also entail that centralized bargaining countries have more full-time working hour norm, where flexibility is used through over-time. Lastly, when all variables are taken in together, female employment rates are also positively correlated to the companies' WTF component scores.

Country variables: Best fit model?

Next we derive a model only including the significant variables into the model, thus increasing our degree of freedom, and increasing the adjusted fit of the model. For the model for worker's WTF component, we do not lose much explained variance of the model even when we exclude the non-significant variables from the model. Of the country variance in the empty model, we have explained for 65% of it through the model with only significant variables. All variables also increase their significance of the relationship although the size of the effect does not change much. In addition we can see that now the relationship between centralization becomes significant. For the model for the company's WTF component, we arrive at two models. Firstly the one with all the significant variables in the model in Table 4, we loose a bit of explained variance, in addition to that female activity rate seizes to have a significant relationship with this component. Also, unlike the model for worker's WTF component, there seems to be changes in the size of the effect of the significant variables. The effect of EPL for temporary workers, centralization and somewhat unemployment becomes even stronger and the effect of union density and somewhat service sector employment becomes weaker. An interesting point about this model is that the union variables are only significant when female activity rate is included. When female activity rate is taken out, what we arrive at is the model in the far right, where only EPL temporary, unemployment and service sector employment is significant. However, in this model, the explained variance decreases to only 48% of the total variance.

Table 6. Regression outcome with only significant country variables

Dependent	Worker's flexibility	Company's flexibility	Company's flexibility
EPL regular			
EPL temporary	- 0.159(0.035)***	- 0.220(0.049)***	- 0.209(0.055)***
Union density	0.890(0.189)***	- 0.605(0.302)**	
Centralization	- 0.460(0.243)*	0.782(0.343)**	
Unemployment average	0.068(0.010)***	0.051(0.016)***	0.038(0.017)**
FDI as % of GDP			
Trade as % of GDP	0.006(0.002)***		
Public sector size			
Service sector employment		0.030(0.006)***	0.030(0.007)***
Female activity rate	0.016(0.005)***	0.010(0.007)	
Remaining country variance	58 (65%)	56 (58%)	69 (48%)

*: significant at the 0.1 level, ** : significant at the 0.05 level, ***: significant at the 0.01 level
Note: of the company characteristics public sector effect was allowed to vary across countries for both factors
Companies in Luxembourg and Cyprus are excluded in this analysis

Table 7. Summary of outcomes

Variable	**Effect on working time flexibility for workers**		**Effect on working time flexibility for companies**	
	separately	combined	separately	combined
EPL regular workers	n.s.	n.s.	n.s.	n.s.
EPL temporary workers	-	-	-	-
Union density	+	+	n.s.	-
Centralization	n.s.	n.s. / -	n.s.	+
Unemployment rate	n.s.	+ (?)	n.s.	+
Globalization: FDI	n.s.	n.s.	n.s.	n.s.
Globalization: trade	n.s.	+ (?)	n.s.	n.s.
Size of public sector	+	n.s.	+	n.s.
Size of service sector	n.s.	n.s.	+	+
Female activity rate	+	+	n.s.	+/ n.s.

Note: n.s = non significant, + : positive effect, - : negative effect
(?): indicate results that are against the set hypothesis

In conclusion, we can summarize the outcomes as the following. EPL can explain the differences in the practices of working time in European companies, however it is rather the EPL for temporary workers not so much the EPL for regular workers. For both flexibility components, taken separately and together, the relationship found is negative, thus indicating that countries with relaxed rules on using temporary work contracts companies use more working time options. However, if we predict that countries with less stringent regulations on the use of temporary contracts have also less stringent rules in general including working time, this result may be read as countries where institutions are deregulated, there is more flexibility in

the companies. However, this must be test to be concluded any further. Countries with strong unions, measured here as union density have companies with more worker-oriented working time flexibility, and less company-oriented working time flexibility, also when the level of bargaining and other country characteristics are controlled for. When union density and other country variables are controlled for, the companies in decentralized countries have more worker-oriented flexibility options where as the companies in countries with centralized bargaining have more company-oriented flexibility options. Companies in countries with high unemployment rates seem to have both high use of worker and company-oriented flexibility, when other country characteristics are controlled for. Countries that have higher share of trade in their economy seem to have companies that provide more worker-oriented flexibility options, when other country characteristics are taken as constant. Companies in countries with larger public sectors have more both worker-oriented and company-oriented flexibility, however this effect seizes to exist when other country characteristics are taken into account. Companies in countries with larger service sectors seem to use more company-oriented flexibility options, regardless of the other country characteristics are taken into account. Lastly, in countries with high activity rates for females in their labour market, companies seem to provide more worker-oriented flexibility, regardless of the proportion of females they themselves employ.

5. Conclusions, policy implications and issues for future research

This paper examines the key determinants that explain the variance between countries in their use of various working time flexibility arrangements, divided into those for workers and those for companies. We find both institutions as well as market structures and situations are important in explaining the practices of working time flexibility. In other words, we cannot explain the differences between company practices just through one or the other, but can only explain it through the combination of several factors which interact with each other. Labour market institutions including Employment Protection Legislation, union strength and collective bargaining structures are significant factors that explain the country differences in the use of various working time options. However, we can see that labour market situations and structures, such as unemployment situations, globalization trends, deindustrialization and women's participation in the labour markets are also important in explaining working time flexibility.

Based on the study we can come to the following policy conclusions. First, we can see that there are still room for policy changes in enhancing or reducing the developments of flexibility. As we can see from the effects of EPL on both flexibility components, regulations are influential in changing behaviours of companies. However, it is still not clear exactly which regulations EPL is representing here, especially because other regulations have not been included in the model. Additional labour market institutions, especially working time regulations, as well as other regulations such as product market regulations, another type of regulation that is frequently examined in the field of institutional economics as well as in the topic of flexibility, should be tested to measure the accurate impacts. This would enable use to see exactly what types of policies are indeed influential and which are not as well as what types of combinations bring certain results.

Second, this paper finds that bargaining characters, such as union density and centralization affect working time flexibility practices of companies. The results show

that density and centralization have opposite effects on the two working time flexibility components. Countries with decentralized bargaining and stronger unions with higher worker oriented flexibility components scores, while countries with centralized bargaining and weaker unions have higher companies oriented flexibility component scores. This implies that there are certain negotiation structures that may facilitate certain types of flexibility developments. In addition, despite the notion that centralized bargaining and strong union memberships go hand in hand resulting in similar outcomes, here we see that in fact decentralized but strong unions are those that yield better outcomes for their workers in terms of providing more work-life balance flexibility options. This also needs to be investigated in more detail, especially in relations to other variables that may be affected by bargaining power structures, such as EPL, unemployment and globalization.

Third, there are implications for female labour market participation and worker-oriented flexibility. Thus although the causality of the relationship needs to be investigated in more detail, the outcomes imply that the enhancement of worker-oriented flexibility used within companies may actually enhance women's participation in the labour market. This notion is not new and has already been noted numerously in the fields of HR management and others. However, this study only examines the relationship between female activity rates with the use of worker-oriented flexibility. This should be elaborated further to see which types of female labour market participation, i.e. full-time, part-time, shorter-part-time, can result from various worker-oriented flexibility. Further more, the relationship between different types of options of the worker-oriented flexibility components and the different types of female labour market participation should be examined as well.

Lastly, there are still some results that are difficult to interpret and go against the set hypotheses. These are the effect of unemployment rates and globalization on the worker oriented flexibility component. Although we can think of a reverse causality, it may also be outcomes of interactions between country level variables thus a result of another variable, perhaps unobserved in the model. However, this also needs further investigations for any conclusions to be made.

References

Abraham, K.G. (1990) "Restructuring the Employment Relationship: The Growth of Market-Mediated Work Arrangements." in Katharine Abraham and Robert McKersie (eds.) *New Developments in the Labor Market: Toward a New Institutional Paradigm*. pp.85-120. Cambridge, MA: MIT Press.

Allan, C., Brosnan, P. and Walsh, P. (1998) "Non-standard working time arrangements in Australia and New Zealand" *International Journal of Manpower*, 19:4: 234-249.

Anxo, D., Fagan, C., Letablier, M., Perraudin, C., and Smith, M. (2007a) *Part-time work in European Companies-Establishment Survey on Working Time 2004-2005*. European Foundation for the Improvement of Living and Working Conditions. Office for Official Publications of the European Communities. Luxembourg.

Anxo, D., Fagan, C., Letablier, M., Perraudin, C., and Smith, M. (2007b) *Parental Leave in European Companies- Establishment Survey on Working Time and Work-Life Balance arrangements 2004-2005*. European Foundation for the Improvement of Living and Working Conditions, Office for Official Publications of the European Communities. Luxembourg.

Anxo, D. and O'Reilly, J. (2000) "Working time regimes and transitions in comparative perspective" in J. O'Reilly, I. Cebrián and M. Lallement (eds.) *Working time changes: social integration through transitional labour markets*. Edward Elgar Publishing, Cheltenham. pp.61~90.

Atkinson, J. (1984) *Flexibility, Uncertainty and Manpower Management*, IMS Report No.89, Institute of Manpower Studies, Brighton.

Bertola G., Boeri T., Cazes S. (1999) "Employment Protection and Adjustment: Evolving Institutions and Variable Enforcement in OECD Countries", ILO Working Papers 48. Employment and Training Department, International Labour Office, Geneva.

http://www.ilo.org/public/english/employment/strat/download/etp48.pdf

Boeri, T., Nicoletti, G. Scarpetta, S. (2000) "Regulation and Labour Market Performance," CEPR Discussion Paper 2420. Centre for Economic Policy Research, London.

http://www.cepr.org/pubs/dps/DP2420.asp

Booth, A.L., Dolado, J.J. & Frank, J. (2002) "Symposium on temporary work: Introduction". *The Economic Journal*, Vol.112(June) F181~F188 Royal Economic Society *Oxford.*

Bredgaard, T. and Tros, F. (forthcoming) "Facilitating flexibility and security for older workers in workplaces. A comparative survey in the Netherlands, Denmark, Germany and Belgium." Manuscript.

Brewster, C. Hegewisch, A. and Mayne, L. (2000) "Flexible working practices: the controversy and the evidence" in Brewster, C. and Hegewisch, A. (eds) *Policy and practice in European human resource management: the price waterhouse cranfield survey*. Routledge, London.

Brewster, C. Mayne, L. and Tregaskis, O. (1997) "Flexible working in Europe" *Journal of World Business* 32(2): 133-51

Burchell, B., Fagan, C., O'Brien, C. and Smith, M. (2007) *Working conditions in the European Union: The gender perspective*. European Foundation for the Improvement of Living and Working Conditions, Luxembourg, Office for Official Publications of European Communities.

Buti, M., Pench, L. R., & Sestito, P., (1998) "European Unemployment: Contending Theories and Institutional Complexities". *Economic and Financial Report.* BEI/EIB Report 98/01. European Investment Bank.

Cappelli, P. and Neumark, D. (2004) "External Churning and Internal Flexibility: Evidence on the Functional Flexibility and Core-Periphery Hypotheses" *Industrial Relations*, 43(1): 148-82.

Chung, H. (forthcoming) "Provision of work life balance arrangements in European companies: public vs. private" in Keune, M., Leschke J. and Watt, A. (eds) *Privatisation and marketisation of services: social and economic impacts on employment, labour markets and trade unions*. EUTI, Brussels.

Chung, H. (2007) "Flexibility for whom? A new approach in examining labour market flexibility focusing on European companies" in *Flexicurity and Beyond* Henning Jørgensen & Per Kongshøj Madsen (eds.):, Copenhagen: DJØF Publishing.

Chung, H. Kerkhofs, M. and Ester, P. (2007) *Working Time Flexibility in European Companies*, European Foundation for the Improvement of Living and Working Conditions, Luxembourg, Office for Official Publications of European Communities.

Crompton, R. (2001) "Gender Restructuring, Employment, and Caring" *Social Politics* 8 (3): 266-86.

Delsen, L. (1995) *Atypical Employment an International Perspective: Causes, Consequences and Policy*. WoltersgroepGroningen bv, Netherlands.

Dulk, L. den (2001) *Work-family arrangements in organisations. A cross-national study in the Netherlands, Italy, the United Kingdom and Sweden*. Rozenberg Publishers: Amsterdam.

Dulk, L. den, Peters, P. and Poutsma, E. (2005) *Employer involvement regarding work-family arrangements in the context of welfare state regimes*. Paper prepared for the Dutch HRM-Network Conference. Enchede, Nederlands, November 4th~5th, 2005.

Deyo, F.C. (1997) "Labour and post-Fordist industrial restructuring in East and Southeast Asia". *Work and Occupations*, 24: 97-118

Dolado, J.J, Garcia-Serrano, C., Jimeno-Serrano, J.F. (2001) "Drawing Lessons From The Boom of Temporary Jobs in Spain" Discussion Paper No.2884, Centre for Economic Policy Research. London, UK.

Ebbinghaus, B. and Visser, J. (1999) "When Institutions Matter: Union Growth and Decline in Western Europe, 1950–1995" *European Sociological Review*, 15(2):135-58

EIRO online (1997) *Reform of overtime is still pending*

http://www.eurofound.europa.eu/eiro/1999/07/feature/es9907141f.htm

EIRO online (2004) *Unions oppose any increase in working time*

http://www.eurofound.europa.eu/eiro/2004/11/feature/si0411302f.htm

EIRO online (2006) *Flexible working time used to counter labour shortages*
http://www.eurofound.europa.eu/eiro/2006/08/articles/dk0608029i.htm

Euroactiv (2006) *'Working-time opt-out leaves employees no choice'*

http://www.euractiv.com/en/socialeurope/working-time-opt-leaves-employees-choice/article-158869

European Commission, (2007a), Employment in Europe 2007. Luxembourg, Office for Official Publications of European Communities.

_____ (2007b) *Joint Employment Report 2006/2007*. Luxembourg, Office for Official Publications of European Communities.

_____ (2007c) *Towards Common Principles of Flexicurity: More and better jobs through flexibility and security*. Directorate-General for Employment, Social Affairs and Equal Opportunities Unit D.2. Luxembourg: Office for Official Publications of the European Communities, 2007

_____ (2006) Employment in Europe 2006. Luxembourg, Office for Official Publications of European Communities.

_____ (2004) *Industrial Relations in Europe 2004*, Luxembourg, Office for Official Publications of European Communities.

European Foundation, 2007. *Industrial Relations in EU Member states 2000 - 2004*, European Foundation for the Improvement of Living and Working Conditions, Luxembourg, Office for Official Publications of European Communities

European Trade Union Congress (2007a) "Modernising and strengthening labour law to meet the challenges of the 21st century"

http://ec.europa.eu/employment_social/labour_law/answers/documents/2_35_en.pdf

_____ (2007b) ETUC Fact sheet "Working Time Directive"

http://www.etuc.org/a/504

Evans, J.M. (2002) "Work/Family Reconciliation, Gender Wage Equity and Occupational Segregation: The Role of Firms and Public Policy" in *Canadian Public Policy-Analyse De Politiques*, Volume 28, Supplement 1: S187~S216.

_____ (2001) "Firms' Contribution to the Reconciliation between Work and Family Life" OECD Labour Market and Social Policy Occasional Papers No.48. OECD, Paris.

http://www.sourceoecd.org/10.1787/344836028454

Fagan, C., Hegewisch, A. and J. Pillinger (2006) Out of Time: Why Britain needs a new approach to working-time flexibility. A report for the TUC.

http://www.tuc.org.uk/extras/outoftime.pdf

Gareis, K. and Korte, W.B. (2002) ICT and the adaptability of work arrangements in the EU. Paper for the European Conference on Information Systems, June 6~8, 2002; Gdansk, Poland. http://csrc.lse.ac.uk/asp/aspecis/20020073.pdf

Gornick, J.C., Meyers, M.K., and Ross, K.E. (1998) "Public Policies and the Employment of Mothers: A Cross-National Study." *Social Science Quarterly*, 29(1): 35~54.

Grubbs, D. & Wells, W. (1993) "Employment Regulation and Patterns of Work in EC countries", OECD Economic Studies, No.21 Winter pp.7~58.

Horrell, S. and Rubery, J. (1991) "Gender and Working Time: An Analysis of Employers' Working-Time Policies" *Cambridge Journal of Economics* 15(4): 373-91

Houseman, S.N. (1995) Part-time employment in Europe and Japan. *Journal of Labor Research.* 16(3): 249– 62

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

Kalleberg, A.L. (2001) "Organizing Flexibility: The Flexible Firm in a New Century", *British Journal of Industrial Relations*, 39(4): 479-504.

_____ (2000) "Non-standard Employment Relations: Part-time, temporary and contract work". *Annual Review of Sociology* . 26:341–65

Kalleberg, A. Reynolds, J. Marsden, P.V. (2003) Externalizing employment: flexible staffing arrangements in US organizations. Social Science Research 32 (2003) 525-552.Korpi, W. (1983) *The Democratic Class Struggle*. Routledge, London.

Kümmerling, A. and Lehndorff, S. (2007) *European Establishment Survey on Working Time and Work-Life Balance: Extended and unusual working hours.* A Report for the European Foundation for the Improvement of Living and Working Condition.

Layard, R., Nickell, S., & Jackman, R., (1991) *Unemployment: Macroeconomic Performance and Labour Market*. Oxford: Oxford University Press.

Lewis, J. (1992) "Gender and the Development of Welfare Regimes." *Journal of European Social Policy* 3: 159-73.

MacDonald, M. (2004) "Gender, Labour Market and Welfare States", *Review of Income of Wealth*, 50(3): 459~466.

Madsen, P. K. (2004) "The Danish Model of 'Flexicurity': Experiences and Lessons", *Transfer-European Review of Labour and Research*. 10(2): 187~207.

_____ (2003) "Flexicurity" through labour market policies and institutions in Denmark" in Auer, P. & Cazes, S. (eds.) *Employment Stability in an Age of Flexibility*, International Labour Organization, Geneva. pp.59 ~ 105.

Mishra, R. (1999) *Globalization and the Welfare State*, Edward Elgar, Cheltenham.

Muffels, R., Chung, H., Fouarge, D., Klammer, U., Luijkx, R., Manzoni, A., Thiel, A. and Wilthagen, T., (2) *Flexibility and security over the life course*. European Foundation

for the Improvement of Living and Working Conditions, , Luxembourg, Office for Official Publications of the European Communities.

Muller, M. (1998) Human resource and industrial relations practices of UK and US multinationals in Germany. *The International Journal of Human Resource Management*, 9(4): 732 – 49.

Nickell, S. (1997) "Unemployment and Labour Market Ridigities: Europe versus North America", *Journal of Economic Perspectives*, 11(3): 55-74.

OECD (2004a) "Employment Protection Regulation and Labour Market Performance" *OECD Employment Outlook*, OECD, Paris. pp.61~125

_____ (2004b) "Wage-setting Institutions and Outcomes" *OECD Employment Outlook*, OECD, Paris. pp.127~181.

_____ (2001) "Work and family life: How do they balance out?", *OECD Employment Outlook*. OECD, Paris.

_____ (1999) "Employment protection and labour market performance" *OECD Employment Outlook*, OECD, Paris. pp. 48~132.

_____ (1997) "Economic performance and the structure of collective bargaining", *OECD Employment Outlook*, OECD, Paris. pp.63~92.

Offe, C. (1985) *Disorganized Capitalism: Contemporary Transformations of Work and Politics*. Oxford: Polity.

Olsen, K. M. (2005) "Unions' Dilemma When Firms Use Employment Intermediaries" *European Sociological Review*, 21: 289 - 300.

O'Reilly and Spee (1998) "The future regulation of work and welfare: time for a revised social and gender contract?" *European Journal of Industrial Relations*, 4(3): 259~81.

Ostner, I. and Lewis, J. (1995) "Gender and the Evolution of European Social Policies." in Leibfried, S. and Pierson, P. (eds) *European Social Policy* Brookings: Washington D.C.

Pillenger, J (2006) *Challenging times: Innovative ways of organising working time: the role of trade unions*. A report of the European Trade Union Congress. Brussels.

http://www.etuc.org/IMG/pdf/Challenging_Times_brochure_EN-3.pdf

Plantenga, J. and Remery, C. (2005) *Reconciliation of work and private life: A comparative review of thirty European countries.* Report for the European Commission.

Polavieja, J.G.(2006) , 'The incidence of temporary employment in advanced societies: Why is Spain different?', *European Sociological Review*, 22: 61–78.

Regini, M. (2000) "Between Deregulation and Social Pacts: The Responses of European Economies to Globalization" *Politics and Society*, 28(1): 5~33

Riedmann, A., Bielenski, H., Szczurowska, T., and Wagner, A. (2006) *Working time and work-life balance in European companies: Establishment Survey on Working Time 2004-2005.* European Foundation for the Improvement of Living and Working Conditions, Dublin.

Rodrik, D. (1997) *Has Globalization Gone Too Far?* Institute for International Economics, Washington, DC.

Sainsbury, D. (1999) *Gender and the Welfare State Regime*. Oxford: Oxford University Press.

Salvanes, K. G. (1997) "Market Rigidities and Labour Market Flexibility: An International Comparison". *Scandinavian Journal of Economics* 99(2), 315~33.

Sapir, A. (2000) "Who Is Afraid of Globalization? The Challenge of Domestic Adjustment in Europe and America" Paper prepared for the Conference on *Efficiency, Equity and Legitimacy: The Multilateral Trading System at the Millennium*, the Kennedy School of Government, Harvard University, June 1-2, 2000.

Scarpetta, S. (1996) "Assessing the Role of Labour Market Policies and Institutional Settings on Unemployment: A Cross-country Study". *OECD Economic Studies.* 2;26. pp. 43~82.

Schils, T. (2007) *Employment protection in Dutch collective labour agreements*, AIAS working paper 2007-56, Amsterdam: University of Amsterdam.

Shorter, E. and Tilly, C. (1974) *Strikes in France 1830- 1968*. Cambridge University Press, Cambridge.

Smith, M., Masi, A.C., van den Berg, A. and Smucker, J. (1995) "External flexibility in Sweden and Canada: a three industry comparison". *Work Employment and Society*, 9: 689~718.

Standing, G. (1999) *Global Labour Flexibility: Seeking Distributive Justice*. London: Macmillan Press LTD.

Stier, H. and Lewin-Epstein, N. (2001) "Welfare Regimes, Family-Supportive Policies, and Women's Employment along the Life-Course" *American Journal of Sociology*, 106(6): 1731~1760

Toharia, L. and Malo, M.A. (2000) "The Spanish experiment: pros and cons of the flexibility at the margin" In Esping-Andersen, G. and M. Regini (eds.) *Why Deregulate Labour Markets?* Oxford: Oxford University Press, pp.307~35.

Trade Union Congress (2005) *Challenging times: flexibility and flexible working in the UK*: TUC assessment of flexible working in the UK.

Traxler, F. (2003) "Bargaining, State Regulation and the Trajectories of Industrial Relations" in *European Journal of Industrial Relations*, 9(2): 141-161

_____ (1995) “Two Logistics of Collective Action in Industrial Relations?” in C. Crouch and F. Traxler (eds) *Organized Industrial Relations in Europe: What Future?* Aldershot: Avebury. pp.23~44.

Traxler, F., Blaschke, S. and Kittle, B. (2001) *National Labour Relations in Internationalized Markets*. Oxford: Oxford University Press.

Visser, J. and Hemerijk, A. (1997) *A Dutch Miracle: Job Growth, Welfare Reform and Corporatism in the Netherlands*, Amsterdam University Press, Amsterdam.

Wilthagen, T. and Tros, F. (2004) “The concept of ‘flexicurity’: a new approach to regulating employment in the labour market.” *Transfer-European Review of Labour and Research*. 10(2): 166~86.

Xavier C. (1996) “Managing Flexibility in the Food Industry: A Cross-National Comparative Case Study in European Multinational Companies” *European Journal of Industrial Relations*, 2(2): 153-72

[Annex 1] Factor analysis outcomes

Table. Factor analysis, varimax rotation three factor outcome

Variable	Factor1	Factor2	Factor3	Communalities
Care leave	**0.82**	0.11	0.01	0.68
Education leave	**0.83**	0.07	0.05	0.69
Other leave	**0.70**	0.05	0.01	0.49
Over time	- 0.01	0.22	**0.36**	0.18
Unusual hours	- 0.01	0.05	**0.80**	0.65
Shift work	0.07	0.02	**0.79**	0.63
Phase retirement	0.07	**0.41**	- 0.02	0.17
Flexible working schemes	0.01	**0.72**	0.07	0.53
Part time work	0.23	**0.60**	0.02	0.41
Reduce working hours	0.14	**0.72**	0.05	0.54

Explained variance: 49.8%

Table. Factor analysis, varimax rotation two factors outcome

Variable	Factor1	Factor2	Communalities
Care leave	**0.79**	0.00	0.63
Education leave	**0.78**	0.01	0.61
Other leave	**0.66**	- 0.02	0.44
Over time	0.01	**0.42**	0.18
Unusual hours	- 0.13	**0.66**	0.45
Shift work	- 0.06	**0.63**	0.39
Phase retirement	**0.42**	**0.36**	0.31
Flexible working schemes	**0.20**	**0.24**	0.10
Part time work	**0.25**	**0.50**	0.31
Reduce working hours	**0.37**	**0.47**	0.36

Explained variance: 37.7%

Here communalities represent the extent to which the factors explain for each variable. The higher the communality score, the better the variable is explained by the factor (R- square). As we can see, the use of overtime and flexible working schemes is not explained much by the two factors derived here in this analysis.

[Annex 2] Country level indicators

	EPL regular workers 2003[a]	EPL temporary workers 2003 [a]	Unemployment rate 2001~2005 [b]	FDI as % of GDP [b]	trade as % of GDP [b]	Size of public sector [b]	Size of svc sector [b]	female activity rate [b]	net trade union density 2004 [b]	collective bargaining coverage rate 2002[b]	centralization of bargaining [a]
Belgium	1.7	2.6	7.8	9.3	80.9	20.7	76.5	56.6	49	96	0.61
Denmark	1.5	1.4	5.0	3.8	43.8	36.4	75.1	75.5	80	83	0.54
Germany	2.7	1.8	8.7	1.2	34.8	27.7	70.7	65.0	18	65	0.47
Greece	2.4	3.3	10.2	0.8	26.7	16.9	61.1	52.3	20	65	0.39
Spain	2.6	3.5	10.5	4.1	28.3	17.5	64.6	54.6	16	81	0.38
France	2.5	3.6	9.2	3.7	26.1	33.0	75.2	63.3	8	90	0.17
Ireland	1.6	0.6	4.4	5.7	79.8	21.6	65.5	57.9	38	-	0.64
Italy	1.8	2.1	8.4	1.3	25.4	22.7	66.7	48.9	34	70	0.34
Luxembourg	-	-	3.6	355.3	122.0	11.4	76.9	54.4	46	58	0.33
Netherlands	3.1	1.2	3.6	8.5	60.0	45.9	78.5	68.5	25	81	0.58
Austria	2.4	1.5	4.4	2.5	52.7	9.1	64.3	63.8	33	98	0.71
Portugal	4.2	2.8	5.9	3.1	30.9	12.3	55.0	66.2	17	87	0.30
Finland	2.2	1.9	8.9	2.7	36.0	29.0	68.3	74.2	71	90	0.57
Sweden	2.9	1.6	5.8	4.5	42.0	42.2	74.7	76.0	77	92	0.56
UK	1.1	0.4	4.9	3.6	27.6	25.3	75.2	68.2	29	35	0.13
Czech Rep	3.3	0.4	7.9	3.8	66.2	37.8	57.2	62.5	22	35	0.27
Cyprus	-	-	4.3	6.0	50.0	19.8	74.3	62.2	70	68	0.26
Latvia	2.3	2.1	11.0	1.8	49.2	43.2	60.7	64.6	16	20	0.30
Hungary	1.9	1.1	6.1	3.2	66.9	15.3	61.1	53.4	17	42	0.26
Poland	2.2	1.3	18.9	1.7	33.8	45.7	52.4	58.7	17	35	0.20
Slovenia	2.7	2.3	6.4	2.1	57.8	29.6	52.9	64.0	44	100	0.43
Mean	2.3	1.9	8.5	3.5	35.6	27.9	68.6	62.0	25	66	0.34
Standard D.	0.7	1.1	3.5	13.5	13.8	9.2	7.3	7.0	16	21	0.16

a: index scores
b: percentages
Source: OECD(2004), EUROSTAT, ESWT, European Foundation(2007)

[Annex 3] Correlation table of country level indicators

	EPLreg	EPLtemp	Unemp ave	FDI ave	Trade ave	Public size	Svc emp	Fem act	density	central
EPL temp	0.31									
Unemployment average	0.01	0.30								
FDI average	- 0.01	- 0.07	- 0.18							
Trade average	- 0.03	- 0.40	- 0.37	**0.54**						
Size of public sector	0.03	- 0.30	0.29	- 0.18	- 0.06					
Service sector employment average	- 0.38	- 0.03	**- 0.50**	0.18	0.10	0.16				
Female activity rate	0.14	- 0.33	- 0.34	- 0.13	- 0.06	**0.47**	0.35			
Union density	- 0.28	- 0.26	- 0.36	0.09	0.23	0.16	0.37	**0.52**		
Centralization	0.07	- 0.04	- 0.34	- 0.03	0.37	- 0.07	0.22	0.25	**0.53**	
CB coverage rate	0.27	**0.55**	- 0.30	- 0.06	- 0.01	- 0.22	0.30	0.21	0.37	**0.64**

Note: all correlations are significant at the 0.001 level, with the exception of EPL reg with unemployment average and EPL reg with FDI average, both of which are not statistically significant