UNIVERSITY OF JYVÄSKYLÄ

Labour Market Reforms, Institutions, and the Quality of Employment:
Should we all follow German Hartz model in reforming labour markets?

Economics and Social & Public Policy
Jyväskylä University School of Business and Economics,
Faculty of Social Sciences
Master's Thesis
24.5.2015
Author: Erno Mähönen
Coordinators: Jaakko Pehkonen & Nathan Lillie

UNIVERSITY OF JYVÄSKYLÄ

Author
Mähönen, Erno

Title
Labour Market Reforms, Institutions. and the Quality of Employment: Should we all follow German Hartz model in reforming labour markets?

Disciplines	Status of Research
Economics and Social & Public Policy	Master's Thesis
Time	Number of pages
May 2015	87 + 13 (Appendix)

Abstract

Underemployment and aging population are major threats for several European economies. This study asks, whether partial labour market reforms, similar to German Hartz reforms, were good choices for other European countries, especially in terms of the quality of employment. Labour market liberalisation effects are assessed from macro-perspective on 25 OECD countries with fixed-effects panel data analysis. The effects for full-time, part-time, temporary, and low-wage employment are analysed separately for both genders, and also on young adults. The results find out strongly a gendered nature of labour market deregulation effects, which give support for dual labour market theory. There appears to be a two-way substitution effect caused by labour market deregulation: a shift from male to female employment and from full-time to part-time employment. Young adults seem to gain less from the reforms than older cohorts while gender differences are also lower for the youth. While liberalisation of temporary contracts seems to moderately increase overall employment, there is a risk of increased precarisation. Moreover, the results suggest that wage-setting institutions shape employment structure much more deeply than employment protection legislation.

Keywords
labour market reforms, quality of employment, Hartz reforms, gender differences, dualisation theory, panel data, fixed-effects

Site Jyväskylä University School of Business and Economics &
Faculty of Social Sciences

Coordinators
Jaakko Pehkonen & Nathan Lillie

FIGURES

TABLES

CONTENTS

1 INTRODUCTION

The current economic crisis and chronic unemployment in the Eurozone show the importance of functional and effective labour markets. The long-term problem with the European economy presents two major issues: lack of productivity growth and high levels of unemployment (Gordon & Dew-Becker 2006), although intra-European diversity is high. In terms of reforming labour markets, Europe has evolved at different paces: Germany and Denmark reformed their institutions radically in the early 2000s whereas countries such as France and Spain have done very little reforming. Additionally, majority of the reforms have been 'partial', i.e. they have concentrated on temporary contracts while leaving permanent jobs intact (OECD Employment Outlook 2014, 143-144).

Labour market institutions matter: Bassanini and Duval (2006, 5) find out that changes in policies and institutions explain on average about two thirds of the non-cyclical unemployment changes. Furthermore, both public and academic discussions about labour market policies have long been dominated by simple observations of employment and unemployment rates – a desire to increase the number of jobs. A lot less focus has been put on the quality of employment: full-time in comparison to part-time participation and low-wage employment. Reforms only transforming full-time jobs into part-time or low-wage employment are desirable in neither economic nor social respect. If the total work effort provided by labour force is lower in the environment with higher amount of insecure part-time labour, there is little economic sense in reforms such as these. The issue of low-wage jobs is important especially because of social reasons but they also relate to public finance through increased expenses in social security. More importantly though, they create a class of working poor which presumably almost no-one sees ceteris paribus as desirable in the contemporary society, including problems with crime, social exclusion, and mental well-being. Part-time jobs, on the other hand, can be either a stepping stone for success or an abusing dead end without future prospects. The economic question is: have the reforms liberalising labour markets managed to boost actual employment or not? In addition, the reforms

may also have significantly different effects based on gender or age: it is worth noting that employment has developed differently among groups that are normally seen to be in a weak position in the labour markets. Are the atypical jobs created after the reforms concentrated especially to women, youth, or the elderly?

The most distinct case of deregulatory labour market reforms in modern Europe is the Hartz reform package in mid-2000s Germany. The Hartz Programme was a rigorous policy reform aimed to liberalise German labour markets, reduce rigidities, and decrease labour protection in order to lower unemployment. The liberalisation in Germany mostly concerned non-regular employment contracts, and not the regular ones. According to several studies, reforms did indeed reduce unemployment (e.g. Klinger & Rothe 2010) but there are theories that claim the reforms did it at the expense of employment quality (Eichhorst & Marx 2009, Bill & al. 2007, Kauhanen 2013). It is also possible that the favourable economic environment during and after the reform period is caused by other macro factors or changes in collective bargaining, not by the Hartz reforms (Akyol, Neugart & Picher 2013; Bell & Blanchflower 2009; Dustmann & al. 2014). The critique that several researchers (e.g. Akyol, Neugart & Picher 2013 and Eichorst & Marx 2009) have targeted against the reforms is that it has actually lowered the average quality of employment while there might not have been a noticeable effort in cutting unemployment at all. Many people working under new labour policy programmes (e.g. 'Minijobs') earn wages virtually below the poverty line and thus require state support. Hence, in terms of full-time unsupported employment, the outcomes of the reforms have not been as great as often perceived. Here, Hartz reforms are used as the benchmark of labour market liberalisation for the analysis. Germany is an ideal comparison point since the Hartz reforms were very profound and their effects are widely researched. In the times of a crisis, many European countries are looking for a role model for their own labour market reforms. It is useful to ask whether the German example has any potential as a model for other countries or not.

It is a rather novel trend in social sciences to pay attention to the quality of the jobs produced by reforming and liberalising labour markets (e.g. Dieckhoff & Steiber 2012, 114). In particular, the fields concerning proportion of low-wage jobs of total vacancies, amount of part-time jobs, and gendered or racial employment effects are yet to be investigated. While the theme has been studied significantly at national level, there is very little contemporary research about the connections between institutional factors and the prevalence of atypical jobs on macro level. Therefore, the main focus of the study is the quality of employment. The issue will be approached from two different viewpoints: the field of Economics and the discipline of Social and Public Policy.

The issue of the quality of employment is important for three reasons: sustainability of the public finance, maintaining growth, and enforcing social justice. Using a lot of part-time labour force is not optimal for utilising all the production potential in an economy. It also creates various social problems

when some people are not able to work as much as they would want and cannot advance in their careers, and thus are deprived in terms of income and often need state support. Public support for atypical jobs (e.g. Minijobs in Germany) might result in a situation where the public sector subsidises low-productivity firms with bad working conditions while firms gain the profit (a matching surplus). Furthermore, there might be consequences in the collective wage bargaining systems as well (Eichhorst & Marx 2009). Additionally, such policies easily create a situation, where firms have no incentive to offer any career advancement possibilities for workers with non-regular contracts in the fear of losing benefits. Moreover, maintaining high employment levels is also crucial for the finance of public sectors, and welfare policies in ageing Europe.

Paying attention to the gendered employment structures is an important aspect for equality in our society. Dual labour market theory suggests that labour markets are not just single markets but segmented into primary and secondary submarkets. This needs to be taken into account when assessing reform effects. Liberalisation of the job contracts of secondary segment probably affect more intensively those groups that are most intensively employed into the secondary segment of labour markets. Hence, it is important to assess the differences of the effects between genders and age-groups. There is some already existing empirical evidence suggesting that labour market liberalisation yields in different employment outcomes for men and women. This study confirms that the effect is clearly different in terms of employment quality.

In this study I assess the relationship between institutional characteristics related to Hartz reforms, as well as other labour market institutions, and the quality of employment in OECD countries. This will be done with a panel data from 25 countries, using Fixed Effects estimator. There is a high demand for functional labour market reforms due to the alarming unemployment levels in Western, especially European, countries, but only little knowledge of the effects of previous reforms on larger scale on employment quality. This study asks, whether partially liberalising labour market reforms, such as Hartz concept, offer a lucrative choice for other countries, when considering the quality of jobs created. The empirical results suggest that liberalisation substitutes male employment for female employment, but also full-time employment for part-time employment. Men are expected to lose some full-time employment while women gain it and there will be more part-time work for both genders. There is also a risk of an increase in other types of atypical labour.

The key questions in the research are the following:

1. To what extent has the partial labour market liberalisation, such as Hartz reforms, affected the overall quality of employment in OECD countries?
2. Is there a difference between genders or age-groups?
3. Focusing on German Hartz reforms: Would similar reforms be lucrative choices for European countries in general?

2 THEORY OF LABOUR MARKETS AND REFORM BACKGROUND

2.1 Quality of employment

The average quality of employment is by no means irrelevant, when assessing the actual effects of labour market liberalisation on contemporary societies. In this study, the 'quality of employment' is understood to mean the wage level, amount of working hours, fixedness, and general stability of a job contract. Herein quality of employment is separated from 'job quality' or 'quality of working life', which mean more non-quantitative and subjective aspects of a good job such as job autonomy, stress management, and working environment. There might naturally be a connection between these two aspects. Osterman (2013) defines a good job consisting of three elements: wage compensation, employment contract, and quality of working life. In this study, a high-quality job is defined to be a full-time job with permanent contract and wage level above 67% of the average full-time job salary in the country, i.e. I am concentrating on first two of the major indicators by Osterman. The indicators used for low quality of employment are amounts part-time and involuntary part-time employment, temporary employment, and low-wage employment. Focusing on clearly defined 'hard' indicators (compensation and employment contract) eases the interpretation and comparability between countries and across time. These indicators are less prone to relative expectations and social norms affecting survey-based approaches for job quality.

An often used rationale of atypical or non-regular employment is that it gives firms the necessary flexibility in highly regulated labour markets. In other words, the precarisation of labour is seen to boost economic performance. A commonly argued problematic aspect, on the other hand, is that atypical employment may block the career advancement possibilities of the employees, and low job quality itself hinders productivity. Atypical employment can be a negative signal of their skills and employers might not be very keen on investing in the human capital of their part-time or temporary employees

because the relative gain of training for the firm is smaller than when investing in full-time permanent employees (e.g. OECD Employment Outlook 2014, 143; Eichhorst & Marx 2009, 19). There are several studies showing that part-time workers receive lower wage returns relative to their experience and seniority (Kalleberg 2000, 345-346). Giesecke (2009) argues that due to the dualism of labour markets, people with atypical contracts (outsiders) are expected to earn less than people with permanent contracts (insiders), because firms tend to apply efficiency wages for insiders but not outsiders. In the most radical situation, Barbieri & Scherer (2009) found out that it is better in Italy for career prospects to wait for the first typical job than to accept atypical employment. This result might, however, be explained by the fact that Italy still is relatively rigid labour market, where mobility between the primary and secondary markets is heavily restricted.

Another rationale is that atypical jobs might later lead into better jobs. The key normative question about the quality of employment lies here: are temporary low-wage part-time jobs a 'stepping stone' for better jobs or just a lock-in, i.e. dead end? Obviously, it would be beneficial for the whole of society if there were good jobs for everyone. It is much more complicated, however, to assess whether some amount of low-quality atypical jobs is better than a certain amount of unemployment. Hence, the issue about atypical employment is definitely not a trivial one.

There are different types of atypical contracts most common being part-time work and temporary work. Part-time jobs have different definitions in different countries but here I use common OECD definition of less than 30 hours a week. Traditionally 'secondary part-time jobs', i.e. low-skill, low-wage, and often temporary part-time jobs in the secondary labour markets, are seen as bad jobs due to insecurity, exploitation, and lack of opportunities, whereas 'retention part time jobs' are seen as positive possibilities for high-skilled workers (de Grip, Hoevenberg & Willems 1997, 52-53). This kind of division strictly follows the dual labour market theory, which will be explained in the next chapter. In short, the secondary part-time jobs rarely lead to better career outcomes, and are rarely chosen voluntarily. An additional problem is the possibility to avoid labour market regulation and employment protection by extensively using workers with atypical contracts (Hevenstone 2010, 317). Retention part-time jobs, on the other hand, are possibilities for those people who might not otherwise work at all, or just prefer to work more or less permanently part-time. De Grip & co. consider temporary part-time jobs to mostly fall into the 'secondary' category but also recognise the possibility that some firms might use temporary contracts to screen workers before final commitment, in which case they might be socially beneficial.

Temporary jobs have traditionally meant contracts with fixed time, without renewal. One rather novel form of temporary employment in many countries is temporary agency work. In agency work employees work for a work agency which places the worker at a disposal of the third party firm (OECD Economic Outlook 2014, 146). Herein 'temporary employment' covers

both forms. Another modern form of atypical employment is 'dependant self-employed workers' who work in similar conditions as employees but are actually solo entrepreneurs. Usually people with these kinds of jobs are called in non-academic context 'freelancers'. It has to be noted though that there might be some aspects of atypical or involuntary self-employment not covered in the variables used here.

Are the majority of the part-time and temporary jobs then good or bad jobs? On macro level we are unable to recognize, what is the actual amount of good and bad atypical jobs, therefore we have to generalise. Månsson & Ottosson (2011) find out with Swedish data that part-time trap is a problem especially for women. Another key finding is that part-time job is significantly less likely to lead to full-time employment if it is a temporary part-time job. Even though they find out that part-time jobs can be a stepping stone for some, it is definitely not for all. Part-time jobs can also be a negative signal of weaker skills, in which case only working part-time tends to be a dead end. Nonetheless, in some cases part-time jobs can be only possibility for some who are not able to work full-time or do not have necessary working life requirements to be employed full-time.

Booth, Francesconi & Frank (2002) discovered with British data that in the United Kingdom non-seasonal temporary fixed-term jobs have been a stepping stone for permanent employment for many people. They find out that in the UK women starting with fixed-term jobs fully catch up with those starting with permanent ones in terms of earnings. The finding suggests that temporary jobs are not as bad for an employee as part-time jobs but it might also heavily depend on labour market institutions of the country. Barbieri & Scherer (2009, 687) find contradicting results with Italian data about the labour market position at the age of 35. According to them, starting working life in Italy with atypical job on average leads to weaker labour market position later in life. Moreover, OECD has estimated that less that 50% of the workers with temporary contract were employed with a full-time permanent contract three years later (OECD Employment Outlook 2014). OECD suspects the reason being low employer dedication for training in the case of temporary employees.

Current research suggests that in most countries temporary jobs are better for career development than no job at all. Temporary workers also earn on average less than permanent ones but there are also some fields where the situation is the opposite. Nevertheless, there are lots of shortcomings. Kauhanen & Nätti (2011) discover with Finnish data that non-regular contracts are associated with greater perception of instability, lower job progression and learning possibilities, and lesser job autonomy. However, they also find out that voluntary temporary jobs, but not voluntary part-time jobs, are often decent in terms of quality unlike other types of atypical jobs. Fournier & Koske (2012) conclude that the negative effects of temporary contracts are concentrated on the lower end of earnings distribution, while more high-earning employees face much lower penalties, which further worsens the inequality problem. Atypical jobs vary greatly in their quality, nonetheless there is still a consensus that they

are associated with lack of health insurance, pensions, and other fringe benefits. The lack of these benefits is especially problematic in countries, where social security is heavily work-related. Therefore, if the welfare level of the citizens is to remain unchanged, increased liberalisation of non-regular contracts should be accompanied with more universal social security that would also cover the people at the margin of labour markets. Some countries enforce equal treatment laws between part-time and full-time workers but not all. Law of equal treatment is one step to reduce the segregation between two labour markets but does not solve all the social problems caused by precariation if social security is depends on work status. (Kalleberg 2000, 345-358)

According to the OECD study *Divided We Stand: Why Inequality Keeps Rising* (2011), atypical contracts and part-time jobs becoming more common have also contributed in rising earning inequality globally. Koeniger, Leonardi, and Nunziata (2007) suggest that there is not only more low-income workers but the total wage disparity is also greatly increased because of labour market liberalisation, although their study considers a bunch of other institutions as well besides employment protection (such as minimum wages)**.** Nevertheless, basing on this evidence, it seems that the increases in employment caused by heavy liberalisation might come with the cost of less equal society in total. It is, however, a matter of debate whether the effects of liberalisation are acceptable since more people in a weak social position are able to enter the labour markets, and thus have more chances for better life.

Yet, another aspect of atypical employment is the labour market position of young people who are just entering labour markets. There is some evidence that strong deregulation might lead to higher risk a weak future prospect for young workers (Barbieri & Scherer 2009; Kahn 2007). On the other hand, it could be argued, that in strict labour markets young might find it harder to enter primary labour markets. Additionally, a Spanish study by De La Rica and Iza (2004) found out that in Spain partial labour market reforms creating expansion of non-permanent jobs also delayed family formation. According to the study, fixed-term contracts postponed marriage decisions of men and also womens' motherhood. Their finding suggests that at least in conservative societies precariation might be a factor in decreasing fertility rates.

The question about gendered effects might also be relevant for the analysis of atypical employment, not only on its own, but because women tend to be more sensitive to the changes in incentives and possibilities to do part-time work than men are on average (Bassanini & Duval 2006, 9-10). As Francis Green (2008, 348) puts it 'precarious work is inherently gendered'. Therefore, in this study I look the liberalisation effects separately on both genders. Using data from the UK, Howard Reed (2010, 112-114) notes that part-time jobs are highly concentrated around women. Gendered part-time employment can be to some extent explained with the fact that women have traditionally carried a greater burden of household work and raising children than men have. Part-time work for women is especially common in the countries with a conservative welfare model (OECD Employment Outlook 2014, 277; Esping-Anderssen 1990), like

Netherlands (61.1% of employed women work part-time), Switzerland (45.7% in respect), or Germany (37.9%) and it is also sometime considered politically preferable model of work-life balance for mothers. In the countries where combination of motherhood is not easily combined with full-time employment, women are influenced more than men by the prospects of part-time employment. Women also, more often than men, find themselves in a weak labour market situation and are thus affected greatly by the prevalence of atypical employment. To sum up, women are often at the margin of the labour markets than men are.

After examining 10 European countries in their study, Konle-Seidl & Trübswetter (2011, 7) found out that the probability of switching to permanent employment from non-employment has decreased on average by 7.7 per cent between 1997/1998 and 2007/2008. Meanwhile, transition to temporary and marginal employment has risen. The process was, however, not uniform in all countries: in United Kingdom and Denmark the odds of permanent employment had on the contrary increased. Additionally, Francis Green & al. (2013) report, basing on European Working Conditions Survey from EU-15-countries, that the working time quality has increased substantially in Europe between 1995 and 2010. The use of shift work at night-time and weekends has been decreasing, less people than before have ever had to work on Saturdays. The result is, however, debatable since it might also imply an increase in less-than-typical-hours jobs, and OECD (2011) too has reported an increase in atypical contracts. These two findings combined imply that the development in Europe is currently leading to less secure jobs, but not necessarily worse jobs.

2.2 Flexibility in the labour markets and economic theory

An important part of the labour policy discussion both in academia and in politics is flexibility. Increasing flexibility has been an integral part of the recent labour market reforms in Europe, for example in Germany and Denmark. Hartz reforms were especially aimed at increasing temporary contract flexibility. The British HM Treasury has provided a good definition of the term (presented in Reed 2010, 25):

1. Flexibility as the speed with which the labour market can adjust in response to an economic shock.
2. A flexible labour market as one that exhibits a good equilibrium, i.e. a low structural unemployment rate.
3. A flexible labour market as one that has institutional features that allow wages and employment to adjust smoothly and freely to equate supply with demand.

In summary, labour market flexibility consists of different characteristics: wage flexibility, working time flexibility and mobility. Each of these

characteristics has several determinants, and they are linked to various institutions including wage bargaining systems and different kinds of legislation (Reed 2010, 26-27). The concept of flexibility is important since increasing flexibility, i.e. cutting regulation, is the basis of a 'liberalising labour market reform'. Herein 'liberalising' means increasing flexibility, and decreasing regulation and all kinds of strictness.

In a similar manner, using a definition originally provided by John Atkinson (1985), labour market flexibility can also be divided into 'internal' and 'external' flexibility, and wage rigidities. External flexibility, in short, means the possibility to have layoffs and the mobility of labour force. Internal flexibility, on the other hand, is the ability to react to changes by reforming organisations and reorganising tasks among a work place. Finally, wage flexibility consists of wage setting and wage dispersion, hence it is connected to bargaining structure. Different kinds of atypical jobs reflect different kinds of flexibility for the company: part-time employment possibilities increase internal flexibility while temporary contracts relate to external flexibility (Giesecke 2009, 630).

The opposite force of flexibility in the labour market is employment protection. Employment protection legislation (EPL) exists to stabilise labour markets, increase predictability, and protect the employee from market risks. Employment protection legislation makes firing an employee more difficult for the firm, usually having both direct and administrative costs. Liberalisation process of labour markets often takes place by deregulating some or all aspects of EPL. The OECD classification (OECD Employment Outlook 2013, 74-75) of employment protection rules include:

- Regulation of individual dismissals of workers with regular contracts
  - Procedural inconveniences
  - Notice periods and severance pay
  - Difficulty of dismissals
- Additional restrictions for collective dismissals
- Regulation of standard fixed-term contracts
- Regulation of temporary work agency employment

This study utilises two main indicators for EPL provided by OECD: 'strictness of temporary contracts' and 'strictness of dismissals'. The first one is primarily about the regulation of non-regular contracts while second one indicates the employment protection of typical job contracts. Regulation of temporary contracts herein includes regulation of work agency contracts, and the governing and legal requirements of temporary work agencies. The indicator for dismissal protection consists of procedural inconveniences that employers face when starting the dismissal process, notice periods and severance pay, and the prevalence of the circumstances in which it is possible to dismiss workers (OECD Statistics 2014). The primary indicator of interest here is the strictness of temporary contracts since it reflects the partial labour market flexibilisation reforms such as Hartz.

According to 'Free-market seeking hypothesis', firms are more prone to employ workers with atypical contracts when the regulation of permanent contracts is strict. The employees might also more easily accept the process than hiring new people with worse fixed contracts during economic downturns. Using atypical workers extends firms' possibilities to use external flexibility when needed. A negative aspect is the possibility to use atypical labour force, utilising legal loopholes, to avoid various legal requirements for labour protection (Hevenstone 2010, 316-318). OECD Employment Outlook 2014 (142) expresses fear that increased amount of non-regular jobs might result in employers investing less on human capital, therefore slowing down the total productivity growth. They point out that while the regulation of non-regular contracts has been liberalised all around the world in the past decades, also in the Hartz reform package in Germany, the regulation on normal regular contracts has remained mostly untouched, which might be the reason behind the expansion of atypical jobs. In addition, not all deregulation is visible from temporary and part-time employment statistics: some include juridical shifts to commercial law. This study concentrates on the effects of non-regular employment flexibilisation, which in line with the Hartz reforms and many other labour market reforms implemented in Europe.

The general economic theory about labour market flexibility is all but unanimous. The theories can roughly be divided into 'classical' or 'neoclassical' models, 'institutional' theories, and 'progressive' or 'alternative' models. The latter are a broad church of different views critical towards classical framework. In a nutshell, classical theories assume perfect competition in the labour markets, or a situation close to it, including wages determined by skill, horizontal labour supply, no adjustment costs, and no frictions of quitting. Naturally, these assumptions are to large extent simplifications but they can lead to strong conclusions. In the basic classical model, the extreme perfect competition case, most of the labour markets measures are either harmful or useless, and flexibility is always desirable in respect of labour market performance. The majority of the up-to-date models basing on classical theory are called neoclassical, which often include elements of other theories, outside the traditional classical framework. Neoclassical models, nevertheless, in general assume rational actors maximising their well-being and competitive nature of labour markets. Even though some neoclassical models might recognise that labour markets contain some unique features, these features are still not regarded as remarkable that they would make labour markets fundamentally from other product markets. (Reed 2010, 31-34; Kaufman & Hotchkiss 2006, 27-30)

Neoclassical models sometimes use the concept of 'compensating differentials' to analyse job quality (not necessary employment quality, which is the other side of the coin and main emphasis here). The main idea is that lack of quality in one aspect of a job has to be compensated in other aspects, e.g. in wages. Compensating differentials perspective has also the implication for

employment quality that weaker job stability should somehow be compensated for the worker in order to attract qualified work force. (Osterman 2013, 740)

Other approach for labour market flexibility is the institutional school of thought. Institutionalists emphasise on institutional forces of the labour markets rather than free competition of rational actors like neoclassists do. Institutional theories include sociological factors like class, gender and discrimination, trade union structures, and in general highlight the uniqueness of the labour markets. Institutional school has contributed our current understanding for example with the theory about labour market segmentation (dual labour market theory), and transaction costs in job search. Important criticism among institutionalism against neoclassical theories is that in many organisations the decisions are based on majority voting rather than marginal utility calculations. Interdisciplinary approach is also relatively common among institutionally oriented studies. Nevertheless, I put here more focus on institutional approach. (Kaufman & Hotchkiss 2006, 30-35)

Employment relations are not born in a social vacuum but affected by various rules, regulations, collective contracts, institutional arrangements, and social constructions. Firms can be understood to form their own internal labour markets, which are subject to many kinds of imperfectness. The key point in institutional approach regarding the quality of jobs is the mixture of various relevant forces affecting firm decisions (Osterman 2013, 740).

Alternative theories about flexibilisation and labour markets usually rely on imperfect competition, multiple firm strategies, or then completely deny the mainstream economic framework. Imperfect competition, also used in neoclassical framework, may be caused by costs of hiring and firing, frictions in labour mobility, firm-specific human capital, imperfect information, or wages determined by other factors than just skills. Multiple firm strategies refer to a situation where the firms' response is not unidirectional, and public measures might be able to direct firms into more socially profitable high value-added strategies. Further criticism of classical model and non-mainstream theories include ideas such as multiple equilibria of supply and demand, employer monopolies, and interdependencies between labour supply and demand through the distribution of income. Overall, these theories suggest that labour market regulation, such as minimum wages, collective bargaining, and employment protection might not be increasing unemployment at all, as classical theories suggest. They also find it possible, as some models based other theories as well, that active labour market policies increase the labour market performance, and unemployment benefits might even result in better matching outcomes since they subsidise high-skill job search. (Reed 2010, 34-42)

The division is presented here, of course, a crude simplification and most actual studies nowadays fall in somewhere between. They might use neoclassical framework but include monopolistic competition or price stiffness, and some institutional elements. Various kinds of job search models often utilise the idea of fixed costs of search process in both employers' and

employees' side. In any case, this study is mostly focused on institutional approach but remains open for all points of view.

2.3 Dualisation of labour markets

Especially institutionally orientated researchers often believe that labour markets are not just any kind or normal uniform markets, where people trade goods, or labour in this case. Instead, they believe labour markets are segmented and dualised. Originally the theory of dual labour markets, primary and secondary labour markets, was developed by Piore and Doeringer (1971) and it is an important part of institutional labour market theory. Primary labour markets are well-protected with standard contracts, often created by collective bargaining, have good job conditions and high status, promotion opportunities, and are usually available for high-skilled workers. The secondary markets, on the other hand, are easy-entry markets for the outsiders of primary labour markets usually accompanied with only low protection and poor wages, and lack the benefits of primary labour markets. The latter one has traditionally been filled with work force seen less suitable or skilled to perform the primary tasks: immigrants, poorly educated, youth, women, etc. Within these two labour market segments, there might be different internal and external markets: some jobs, especially high-level jobs, are only offered within a firm, cluster, or network. Understanding dual labour markets is vital in understanding the effects of partial labour market reforms, which are targeted at the secondary markets.

The idea behind dual labour market theory is that the two markets are separated from each other and entry into primary markets is restricted from the outsiders who lack the necessary qualities. Neoclassical models assume the barriers are relatively easily penetrable, while dual labour market theory believes these barriers are not only caused by differences in skill and education. Labour markets are assumed to be segmented by various forces like discrimination, legal measures, firm internal dynamics, or labour union activity. In western societies, price competition is one way or another always more or less restricted in primary markets. Saint-Paul (1996, 10) points out that dualism in Europe was originally created by legal measures: easing temporary and non-regular contracts while keeping up high permanent employment protection. It does not, however, always have to be. Utilising the framework of neoclassical economics, Shapiro-Stiglitz model explains dualism in a free market situation, when one sector has monitoring costs and the other has not. Firms have an interest to pay wages above market clearing in order to reduce unnecessary monitoring and bind employees to the company. The secondary sector without monitoring costs, i.e. a sector with simple jobs with easily recognisable results, pay competitive wages. The primary sector, which has monitoring costs, restricts entry and pays higher wages than secondary sector, not solely based on productivity but also other factors like education or work experience. Also

workers with a high turnover include extra costs since they lose less from being fired from a primary sector job (because they intended to leave anyway at some point). Therefore such workers are more likely to end up in secondary labour markets. This might, for example, explain the high amount of women in non-regulatory jobs even if they do not currently have children to take care of. Additionally, Shapiro-Stiglitz model explains the existence of involuntary unemployment in such labour markets. It should however be noted that dualisation might also occur within a firm, not just between industries. Pfeiffer (2005, 407) notes that the competition in primary markets often is skill competition, whereas workers in secondary markets usually compete with prices. (Saint-Paul 1996, 2-20; Kaufman & Hotchkiss 2006, 300-305)

The nature of labour market dualisation differs in time and place. If we think the early industrialised societies, it was the professional jobs that were secured while majority of working class manual jobs were secondary ones. Later on after the unionisation and the development of job protection, the secondary labour markets can be found from atypical jobs described in the first chapter. Originally, Piore and Doeringer (1971) believed poor education being the main factor keeping poor U.S. workers stuck in the secondary labour markets. In the 21st century Europe the relevant forces might be others. Immigration, for example, is one potential segregating factor. Immigrants can be expected to be found more often in the secondary sector of labour markets than native-born workers. Raess & Burgoon (2013) confirm using data on 16 countries that immigration influences employment flexibility on the firm level, especially external flexibility. The higher the exposure for foreign-born workforce is, the bigger are the odds that the firm introduces non-regular employment contracts. In this study, the immigration inflows are controlled in order to find out the true effects of labour market reforms without the interference of international migration processes.

The secondary labour markets are sometimes thought of as providing flexibility to the economy. On the other hand, in such labour markets macroeconomic fluctuations tend to be especially harmful for the secondary sector employees since they get always fired first. Also, according to the theory, it could be economically beneficial for the firm to offer employment protection for their primary employees in order to reduce costly turnover of the core work force but not all employees. At the time of a liberalising reform, dual labour market theory expects a temporary boom in employment: 'overshooting'. When legal environment allows more non-regular work, employers rush to hire some, but the downsizing companies will only do so progressively to avoid the firing costs. Reform effects might therefore be front-loaded. Moreover, Saint-Paul notes that after the liberalisation of non-regular contracts, those employees that manage to keep the permanent contract are actually better off than before. Their contracts are then more secure because lay-offs are concentrated on non-regulars. (Saint-Paul 1996, 4-6; 10-11; 90-92)

The dualisation theory can also explain some inequalities of the labour markets. Because primary labour markets are rationed, there are no economic

incentives that would prevent employers from using arbitrary criteria, such as gender, for allocating employees into primary and secondary sector jobs (Saint-Paul 1996, 67). Because competition is imperfect, competition would not prevent discrimination. On the other hand, working life attachment also matters since employers face costs on assigning workers on primary jobs (such as training). Therefore they might have a financial incentive to discriminate against people who have statistically high risk of quitting or spending longer time off-work, e.g. young women having risk of maternity leave. Consequently, the effects of labour market flexibilisation could be gendered if they affect primary and secondary labour markets differently.

According to the review study about gendered effects of labour market liberalisation by Rubery (2011), there is some existing literature suggesting labour market liberalisation would be beneficial for women's employment, i.e. enhancing gender equality. The stance of literature can be theoretically justified if employment protection is assumed to increase labour market dualisation, especially in the case of high EPL asymmetry between standard and non-standard jobs. Employment protection might reduce women's employment prospects through reduced job vacancies for returners (e.g. from child care), and by restricting job creation in female-dominated volatile sectors. Rubery herself is, however, critical towards policy advice made from this finding: it might just reflect the gendered nature of labour markets without being the core reason for segregation an sich. Making policy decisions based on side effects of another phenomenon might just raise new issues to deal with. These effects greatly depend on the existing gender segregation in labour markets, which might not last forever. Therefore it might be short-sighted to claim that labour market flexibilisation will definitely be beneficial for women in general in the long run. Reducing EPL would be justified in term of gender equality if the segmentation is caused by EPL. This might, however, not be the case, and gendered effects of liberalisation might only reflect already gendered labour market dynamics without actually changing the core reason for segmentation.

Besides gender, age can also be a relevant factor in determining labour market flexibilisation outcomes. Dieckhoff & Steiber (2012), using two-stage micro-macro analysis on adult male labour force, reach the conclusion that strict employment protection employment-wise mostly benefits only older prime-age employees, which are also the ones most suffering from liberalisation. Other age groups fare better on average. They also confirm that partial labour market reforms, liberalising non-regular contracts but not regular, have indeed increased the share of fixed-term employment among the youth. Whereas older workers face the effects of general liberalisation more strongly, the youth face the consequences of the liberalisation of temporary contracts. Bassanini & Duval (2006) too reach similar conclusion that EPL benefits older workers more than the younger. Here I chose to pay special attention to young adults in the prime age of entering labour markets (25-29-year-olds). The effect on labour market entry is likely shape the future dynamics, which is the reason for the

chosen age group. 25-29-year-olds are the optimal age because the majority are not students anymore, and are likely to have already started their working life.

There are some voting models in the field of political economics that explain why institutional power often favours the primary markets in the expense of people working in external markets: it is crucial for both politicians and unions to win the support of the active core of the society (Pfeiffer 2005, 407). It is, however, a matter of doubt how relevant the dualisation is in current economies, i.e. how restricted the mobility between the core and outskirts of labour markets actually is. Theory of dualisation is important for this study because it gives insight to the use of atypical jobs in the economy. Dualisation of labour markets might help to explain, how the quality of jobs reacts to the changes in institutional environment. Dual labour markets theory could, for example, explain why workers with non-regular contracts are not compensated for their insecurity compared to workers with permanent contracts.

2.4 Labour market institutions and performance

It is also vital to define what we understand by labour market performance. Here, the focus lies within the quality of employment, i.e. how many jobs are sufficiently paid, stable, full-hours jobs that satisfy the needs of the employees. Generally, labour market performance in macro level studies is often understood as the amount of people in economic activity versus the amount of inactive people (Reed 2010, 48). The indicator can be either unemployment rate, or employment rate, which both tell a slightly different story. In this work, the performance means overall ability of labour markets to allocate jobs for people who want to work as opposed to quality of employment, by which I understand the average quality of employment in certain country. In other words, performance is the quantity while the main interest here lies within the quality. Still, quantity cannot be neglected.

A growing consensus in both economic and social policy studies suggest that institutions have a crucial role in explaining the country-specific differences in labour market performance. Having theoretical knowledge on the institution effects is crucial as they are to be empirically modelled. According to Arpaia & Mourre (2005) labour market policies influence performance in three ways: through the wage formation mechanism, price elasticity on product demand, and stimulating the technological progress. Bassanini and Duval (2006, 89-95) have gathered an excellent summary of most common theoretical foundations about the institutional effects on employment:

- **High unemployment benefits** available for a long period of time might reduce the job search intensity and reduce the willingness to accept job offers, and also increase the reservation wages of the unemployed job-seekers. These effects may cause reduced employment. On the other

hand, unemployment benefits might enable job-seekers extended job search period with better results, i.e. improved match between vacancies and job-seekers, which might further decrease the odds for unnecessary job separations. Obviously, there are also other rationales for unemployment benefits regarding social reasons and economic security but here I concentrate on employment effects. It is, however, necessary to realise the political connection between employment protection laws and unemployment benefits: it is not realistic to assume both could be driven down without opposition even if it would increase total employment and reduce unemployment. As Bassanini and Duval (2006, 89) point out, there might be a trade-off between efficiency and equity.

- **Tax wedge** in classic economic theory is considered to cause inefficiency in the (labour) markets creating a barrier between labour demand and supply. On the other hand, possibly beneficial public programmes, such as active labour market policies, would be impossible without funding from the taxes. The theoretical impact of tax wedges also depend greatly, how we assume labour market efficiency: can the taxes easily shift into wages or not. Therefore, a priori, the effects are unclear.
- **Strong labour union activity** in wage bargaining can push wages above the level of competitive markets and thus cause unemployment if the unions do not value employment as much as general society might. It is often argued that strong unions affect especially the employability of 'outsiders' of the labour markets, i.e. people with low labour market proficiency: youth, elderly, low-educated, women in some societies. Theory suggests though that the wage-setting institutions and the structure of collective bargaining matter greatly (e.g. Traxler 2000). A popular theory is a 'hump-shape curve' between very centralised and decentralised wage bargaining systems. The market liberal method of firm-level bargaining is often considered to result in high employment since union influence is limited. It would lead to a situation where contracts might differ greatly across sectors and industries, increasing flexibility. At the other end of the line, highly centralised and centrally coordinated collective bargaining systems have also achieved low levels of unemployment, since it is believed to make bargaining parties consider consequences of the agreements on the wider society. In other words, centralised system forces the actors to internalise the effects of their results, therefore leading to socially more preferred outcome. According to this theory, mid-level bargaining without proper coordination leads to the worst results. The result is especially likely, if there are legal extensions of collective contracts to non-union-members.

- **Employment protection legislation** (EPL) increases the fixed costs of firing, and thus can make firms more cautious about hiring decisions as well. High protection might lead to wage tensions within firms since firms try to compensate their firing costs by entry wages but incumbent with higher bargaining power are in a position where it is possible to demand more. This process results in reduced hiring rates which increases the duration of unemployment spells, which again lowers the reservation wages of new job-seekers. EPL reduces labour turnover, compromises the prospect of the job-seekers with low proficiencies. Esping-Andresen (1999) refers this process using the terms 'insiders' and 'outsiders' of labour markets (originally by Lindbeck & Snower 1984). Wesmer (2006) suggests strict EPL could encourage workers in invest more in work-specific skills instead of general skills, which might boost productivity at the expense of flexibility. EPL is also often considered to be highly correlated with long-term unemployment. It can, however, be argued that high employment protection would lead to higher average quality of employment, which is basically a claim this study is trying to evaluate. Additionally, there are theoretical considerations about the interactions of EPL with other labour market factors like ALMPs and wage floor.
- **Active Labour Market Policies** (ALMPs), when properly designed, can improve the efficiency of the labour markets and thus reduce unemployment. The drawback of ALMP spending is that the funding naturally requires funding based on taxation, which often means increased tax wedge on labour. There is also a great amount of evaluation studies which reveal that, while some ALMP measures have been effective, some have not. In the case when ALMP measure does not meet its goals (e.g. increase employability of the job-seekers) it is valuable resources wasted that could have been used to something else instead, a macroeconomic stimulus for instance.

Additionally there is a growing amount of literature about the effects of product market regulation but due to the lack of relevant data, it is not covered in this study. With only partly data, there would be big multicollinearity problems with other EPL variables, especially in Fixed Effects estimation where country-to-country variation is erased. In many countries, including Germany, product market liberalisation coincides with labour market liberalisation, making these two phenomena difficult to separate. All in all, some studies suggest that high product market regulation would be one factor in labour market inefficiencies. Other potentially influential factors are, for example, labour mobility programmes, housing policy and minimum wages (Bassanini &

Duval 2006, 95-96). Moreover, in this study the roles of immigrant inflows and public childcare expenditure are also considered. There is abundance of literature pointing out the connection between childcare availability and female employment dynamics (e.g. see Esping-Andersen 1999, 59). Cheaper and more available the childcare institutions are, either through cheap (sometimes illegal) immigrant work force or through public subsidising, the greater the female employment rate.

TABLE 1 Summary of previous study results: the effects of institutional characteristics on total employment (collected from Arpaia & Mourre 2005 and Bassanini & Duval 2006)

Study	Data and methods	Results
Nickel & Layard 1999	Gross section on 20 OECD countries (GLS random effects)	Tax Wedge – Unemployment benefits (GRR) 0 Benefits duration – ALMPs 0 Coordination +
Nickel & al 2002	Dynamic panel data on 20 OECD countries 1961-1995 (GLS estimates)	Tax Wedge – GRR – Benefits duration 0 EPL 0 Coordination + Union density -
Mourre 2004	Dynamic panel data (GLS estimates) in 10 Eurozone countries and 20 OECD countries over the period 1960-1997	Tax Wedge – EPL – Coordination + Union density – (low sig.) ALMPs 0
Nickell & al 2005	Dynamic panel data on 20 OECD countries 1961-1995 (GLS estimates)	Tax Wedge – GRR – Benefits duration 0 EPL 0 Coordination + Union density 0 Change in UD -
Bassanini & Duval 2006	Panel data on 20 OECD countries 1982-2003 (SURE estimates)	Tax Wedge – Unemployment benefits (RR) – Union density + (men only) EPL 0 Product market regulation – (women only) Corporatism 0

Table 1 presents a list of significant studies assessing the connection between employment levels and labour market institutions. It is more common for such studies to use unemployment as a meter of labour market performance

than employment. Since employment levels are here more relevant, Table 1 presents the studies using employment, rather than unemployment. Results in these studies are fairly uniform, but the effect of EPL on employment rate is still unclear.

There are a large number of studies exploring the links between several institutional characteristics and the performance of labour markets. Arpaia & Mourre (2005) provide a good summary on the most significant studies (see Table 1). Most of the reviewed empirical studies suggest that tax wedge, unemployment benefit duration, and gross replacement rate have a negative connection with labour market performance – though Reed (2010, 7-8) notes that effects are usually relatively small and tax wedge depends on how the taxed revenues are used. Tight workers' protection laws also had either negative or insignificant connection (Arpaia & Mourre 2005, Reed 2010). The results for wage negotiation mechanisms were mixed, hence Arpaia and Mourre repeat the basic hump-shape theory that labour union coverage and density are only significant when bargaining coordination is low, and labour market performance is best among either centralised bargaining or firm-level but weakest on industry-level (2005, 24-25). It is worth noting, however, that Traxler & Brandl (2012) criticise the theory on German and Austrian evidence and stress the good performance of intermediately centralised pattern bargaining models in the internationalising labour markets. Therefore, the level of coordination alone might not explain the performance well enough, hence also the mechanisms of coordination need to be taken into account. On the other hand, as seen in Jelle Visser's transnational comparison (2013, 55-63) the lines between different systems have been blurred, and 2000s German and Austrian bargaining coordination actually closely resembles Danish and Swedish ones (or vice versa). For many other factors as well, the evidence is unclear. Moreover, also the other previous results have some problems with the interpretation: the institutions might also affect the participation rates in total, and thus further complex the results.

The situation gets more complex when institutions are used as controlling factors for policy reforms but, simultaneously, the policy reforms actually modify those institutions used as controlling variables. In this way, the analysis results would be biased, and such phenomena make the causal interpretation more difficult. The second complicating issue are the interactions between labour market institutions themselves and with macroeconomic factors (Arpaia & Mourre 2005, 13-16). The institutions might have a different effect in the different stages of business cycle, and they might affect the outcomes of the shocks through hysteresis. A recent study from Sarkar (2013) tries to cover the causal connections of temporary contracts EPL (the type of interest here) and unemployment using advanced panel data methods. The only significant connection is that the strictness of temporary contracts could increase long-term youth unemployment, but all other connections are statistically insignificant.

In addition, some institutional effects on labour market performance may only be significant in certain institutional environments but not in others. For

example, according to Arpaia & Mourre, the union density raises unemployment only in decentralised bargaining systems. Labour participation is always a complicated phenomenon to study because it is related to several additional factors, e.g. the discouraged workers effect. Discouraged workers choose to withdraw because they find their efforts futile in bad economic times, which might be a relevant point when studying the reform effects to youth and women's employment. These kinds of phenomena might also affect the situation in times of labour market reforms.

If we consider total hours worked per capita as an indicator of labour market performance, then there is some evidence that strict employment protection legislation could have a negative effect. Majority of the macro-level cross-country studies in question do not, however, find any significant connection between EPL and hours worked (Causa 2009, 6-9). Yet, several studies suggest that high union density would increase the amount of hours worked in the economy and high tax wedged would decrease it. Cause herself gets the result that EPL affects negatively men's employment but not the employment rate of women. Theoretically, EPL could have a negative effect on hours worked due to lower employment level. Or on the contrary it could raise the optimal hours per worker for a firm if variable costs of more hours per worker remain unchanged. It is coherent with the theory that high tax wedges would reduce the amount of total hours worked since they increase the incentives to shift some of the work (like laundry and cooking) into home production. Additionally, Causa notes that it is not indifferent for the firm, how the hours worked are composed between the number of workers and amount of hours worked by an employee.

In addition to liberalisation of employment protection, a possible source of increased flexibility is also the process of tertiarisation in the labour markets (see Eichhorst & al 2010, 5-6). Tertiarisation means that more and more people work in the service sector instead of industries or agriculture. In EU-15 countries approximately 5% of whole working force has moved from industries in service sector between 1997 and 2009. The jobs in service sector are often less regular than in the jobs manufacturing. Tertiarisation of the economy necessarily increases job flexibility due to the production nature of service economy: services cannot be stored but must be consumed when produced. The process creates an increased demand for flexible labour. Additionally, low-wage jobs are typical in service sector. Therefore, tertiarisation might explain the changes in labour market dynamics in past few decades. However, tertiarisation is also linked to the liberalisation of employment protection: new non-regular jobs, finally allowed to be created after relaxing legislation, are most likely born in the service sector. Hence, it is difficult to assess, whether the reason of lower average quality of employment is tertiarisation alone, tertiarisation together with liberalisation, or tertiarisation caused by liberalisation. Other possible causes for tertiarisation in Western economies are globalisation of the economy, technological change, and demographic change (ageing of the population).

2.5 Labour markets and regime taxonomy

Reforms in labour market institutions do not happen in a social vacuum but the institutional environment matters. There are significant historical differences in labour markets among different European or Western countries. In Denmark, Norway, and Sweden the employment levels have been historically very high. Germany, on the other hand, used to be a lower-than-average country in EU in the respect of employment but has been catching up significantly after 2004. In southern Europe in general, the employment rates have been relatively low for the whole observation period of 1992-2012. The difference is even greater, when examining women's employment only. (OECD Statistics 2014, Eurostat 2013)

There is significant diversity in Europe in labour market indicators. Labour union density and the coverage of collective bargaining vary considerably. The highest numbers for both are found in the Nordic countries and the lowest in English-speaking countries (Freeman 2007, 27). In Central- and southern European countries, the percentage of collective bargaining is generally high but union coverage low. Employment protection legislation, on the other hand, is highest in South and Central Europe, middle-level in the Nordics, and lowest in English-speaking countries. In terms of bargaining structure, the Nordics are often described as centralised and high-coordination systems whereas southern Europe is seen having a decentralised low-coordination bargaining system (e.g. Arpaia & Mourre 2005). According to Traxler & Brandl (2012) Germany and Austria nowadays form a middle group with intermediate attributes, though there has been some institutional change. Levels of taxation are also generally highest in the Nordics, intermediate in continental Europe, and lowest in the English-speaking countries.

One possible approach to eliminate the policy background biases from the comparison is to follow Simon Sturn (2011) and divide the countries in the analysis into separate regimes in respect to their institutional characteristics. The relevant characteristics in this case might be labour union and wage bargaining structures, social policy regimes, or labour market flexibility. Eichhorst, Feil and Marx (2010, 4-10) use several different cluster analyses to form relevant classifications. To large extent, the classifications follow Gøsta Esping-Andersen's (1990) classic division to three welfare 'regimes', with some difference in the Nordic and South-European countries. Using regime classification is one way to reduce the biases caused by different policy environment. Ultimately, it is necessary to find a method to differentiate country-specific policy environment because the same policy reforms might cause different results if the social structure in a country is considerably different.

The institutional environment in the labour markets varies a lot within Western countries. In order to take institutional differences into account, a plausible way to classify countries into different policy regimes will need to be found. The existing academic literature has several ways to create the

classification. The classic taxonomy used extensively in social policy research is Gøsta Esping-Andersen's (1990) 'Three worlds of welfare capitalism': the Nordic 'Social-democratic' regime, the Continental 'conservative-corporatist' or 'corporatist–statist' regime, and the Anglo-American 'liberal' regime. The Nordic regime also partly includes Netherlands, and Anglo-American includes Ireland, Australia and New Zealand. The rest, except the ex-eastern bloc countries, are considered continental. However, especially after the reforms in Germany it is a viable question to ask: is the division still up to date? On the other hand, it pictures some institutional structures that are deeply-rooted into the societies and are not only relevant in social policy structures but also in labour market legislation, and the role of labour unions and collective bargaining.

Another possibility would have been to follow Eichhorst, Feil and Marx (2010, 4-10) and Eichhorst, Marx & Tobsch (2009), and use a taxonomy (originally developed by Atkinson 1985) provided by their cluster analysis based on evaluating internal and external flexibility, and wage rigidities. Their classification differs to some extent from Esping-Andersen's one: Sweden and Denmark form a separate group 'functional model'. The rest of the Nordic countries are in the same group with Germany, France and other Central-European countries. Here I use Esping-Andersen's criteria supplemented with debatable South-European (Mediterranean) regime because it enables decently big and uniform regime groups of at least four surveyed countries in each group.

Another method of institutional controlling is specific institutional operationalisation using indicators describing the policy environment. Jelle Visser (2013, ICTWSS Database) has done an important work creating a detailed panel data quantification about several institutional characteristics regarding wage-setting institutions. Visser's data will also be used in all the estimations. His dataset enables the assessment of institutional changes within a country, what is not covered my social policy regimes. Wage-setting institutions do not, however, explain all institutional backgrounds, and therefore other controllers are also needed.

An additional aspect in labour market reform comparisons is that the implementation of a labour market reform in one country might also have effects on other countries with a close trade connection to the reforming country. A popular image of this effect is negative 'beggar-thy-neighbour policy', which boosts the competitiveness in reformer country at the expense of trade partners. Felbermayr, Larch & Lechthaler (2012) suggest however, based on German evidence, that the effect might actually be positive instead. Regardless whether their finding is accurate or not, it gives an additional justification to study labour market reforms on a cross-country basis instead of at a micro level. Nevertheless, here I am not further complicating the analysis by trying to model reform effects from other countries. Spillover effects are, however, a point that should be raised in future research about labour market liberalisation.

A further relevant question concerns the role of other macro elements in the background of labour market policy changes. Romain Duval (2008) suggests that small countries are more likely to undertake greater labour market reforms and that the soundness of the public finance plays a major role in implementing reforms as well. Duval's argument might explain to some extent the controversies in the German example. There is also some evidence that the effects of labour market deregulation might be linked to the deregulation in other markets, like product market regulation (Fiori & al. 2012). These are issues not explicitly covered here but it is in any case important to be aware of them.

2.6 Case Germany: the Hartz reforms

Let us have a closer look on our benchmark reform: the Hartz reforms in Germany. From 90s to mid-2000s, Germany was deprived by relatively high unemployment[1], at its highest 11.3% in 2005 (Figure 1). Germany had a structural problem: employment[1] rates were rather low, mostly because of traditionally low female employment due to the culture of stay-at-home mothers. Economic growth in the 90s was sluggish and labour market performance seemed to be weakening (Eichhorst & Marx 2009, 2). The situation seemed particularly bad in the early 2000s when unemployment started to rise again. In 2002, under political pressure the German government, led by Social Democrat 'moderniser' Gerhard Schröder, set up the Hartz Committee to reorganise the German labour market policy, legislation, and employment-related social security. In the end, the unemployment rate did indeed drop drastically after the reforms, to 5.6% in 2012. In addition, total employment began to rise steadily after the last Hartz reform.

The final reform was implemented in four stages, called Hartz I-IV. The first ones, Hartz I and II, were implemented in December 2002. Hartz I established 'Personal-Service Agencies', reformed the legislation about temporary work and labour leasing, widened the definition of 'reasonable' job, and transferred the burden of proof when rejecting a job offer to the job-seeker. Hartz II, on the other hand, increased the benefits for business start-ups ('Ich-AG'), included 'Minijobs' and 'Midijobs' into legislation (short-time, low-wage, no tax jobs), reorganised the job centres and Bundesagentur für Arbeit (BA, Federal Labour Agency), and increased the company size for required employment protection from 5 to 10 employees. (OECD 2009, 232; Klinger & Rothe 2010, 9)

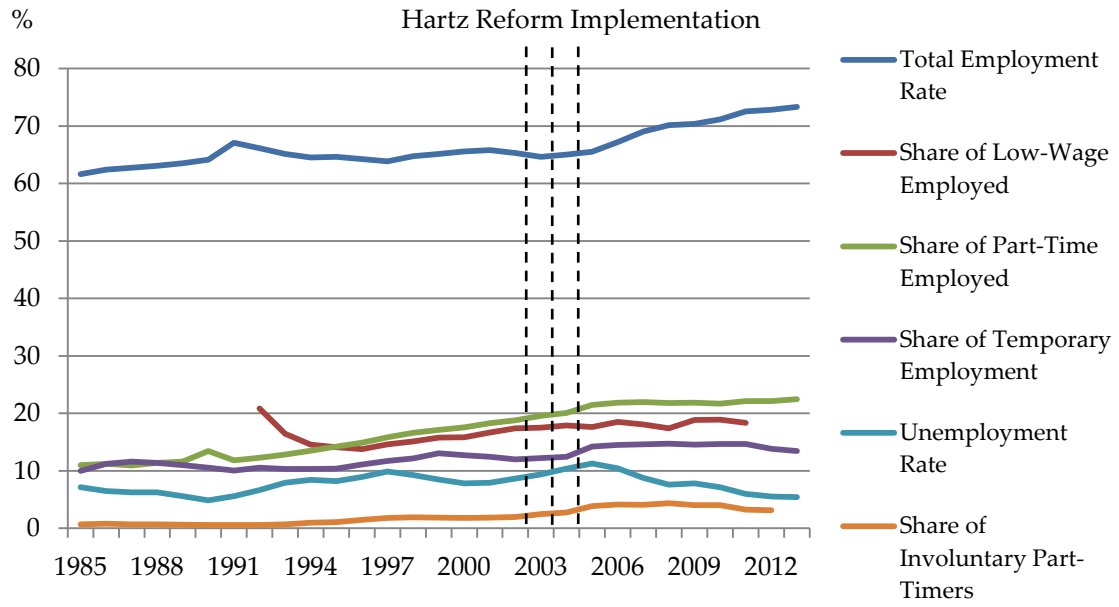
The next waves, Hartz III and IV, were implemented in October 2003 and July 2004 (came into effect January 2004 and 2005). Hartz III further reformed the BA allowing the Agency to cut the unemployment benefits by 30% if recipients refused a job offer on inadequate grounds. The focus on reintegrating

[1] Employment and unemployment statistics are counted as a percentage of working age-population, i.e. 15-64-year-olds (OECD Statistics 2014)

the unemployed into working life was also emphasised. Moreover, Hartz IV restricted unemployment benefits even further. The length of unemployment benefits was reduced, and the definition of a 'reasonable job' was tightened. (OECD 2009, 232; Klinger & Rothe 2010, 9)

European Commission (LABREF 2014) has defined the directions of Hartz reform policy measures being in 2002 decreasing for employment protection, unemployment benefits and labour taxation, while increasing active labour market policies. Some of the reforms carried out during the Hartz reforms were not the original propositions of the Hartz Commission but are instead called 'Agenda 2010'. Under Agenda 2010 there was a similar reform package in 2003 than the one in 2002, according to LABREF classification. Reforms in 2004 further decreased unemployment benefits (net replacement rate) and increased ALMPs. The reforms in 2005-2006 reduced again unemployment benefits and increased ALMPs. Regarding ALMPs some definitions here are more or less ambiguous, whether they are 'increasing' or 'decreasing' policy measures, especially the ones regarding job centre decentralisation.

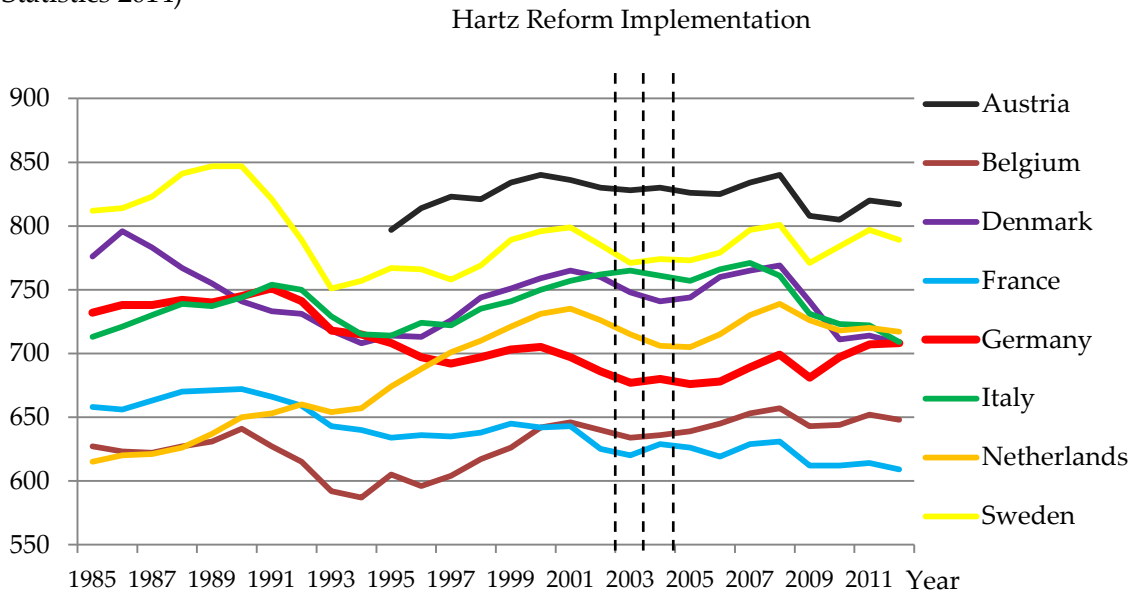
FIGURE 1 German employment statistics 1985 - 2012 (OECD Statistics 2014)



From a brief look it appears that Hartz reforms improved the German labour markets significantly. On the other hand, the poverty risk for of employed people in Germany rose sharply from 5% to 7% between 2005 and 2007 – right after the reforms (Eurostat 2012). The common public critique of the reforms is that they have decreased the quality of life for many people in a weak labour market position. As presented in the Figure 1, the number of part-time jobs has risen steadily in Germany from 1990 until 2007 when the growth rate became slower. The share of involuntary part-time jobs has, on the other hand, increased greatly after the Hartz reforms. The proportion of temporary jobs also jumped to a slightly higher level at 2004. The share of low-wage

employment did not change radically after the reforms. This does not, however, tell much since the numbers only count low-wage full-time employed, not part-timers. Hartz reforms were especially targeted to people who work less than normal hours (and also enabled such working conditions) but they did not radically change the situation of full-time employed. Eurostat[2] reports higher numbers, 22.2% in 2010, but only in a cross-country format. An issue further complicating the interpretation is the German unification in 1990, which is clearly visible in the employment graph as a decline. It is hard to measure, how long did it take for two Germanys to properly integrate, or did they even ever do so. All in all, these figures alone do not tell us whether the changes were caused by the Hartz reforms or general development in the labour markets.

FIGURE 2 Total hours worked[3] per capita in Germany and reference countries (OECD Statistics 2014)



The amount of total working hours in the German economy after the reforms had only a minor increase until 2010, and has only reached the level of the year 2000 in 2011 (Figure FIGURE 2). In short, the total working hours per capita did not increase significantly in Germany when compared to other European countries, until after 2010. During the banking crisis, German working hours started to increase while many other countries witnessed decreases. In 2012, the number of working hours per capita in Germany was near the Central European average, but still lagged behind the Nordic countries (except Denmark) and Austria. Actually, the second great labour policy reformer, Denmark, witnessed a strong decline in working hours per capita after the economic crisis in 2008. The percentage of 'economic short-time

[2] STAT/12/189

[3] Includes regular hours worked by all workers within a year including paid and unpaid overtime, hours worked in additional jobs, and time not worked because of public holidays, annual paid leave, strikes, labour disputes, and other reasons.

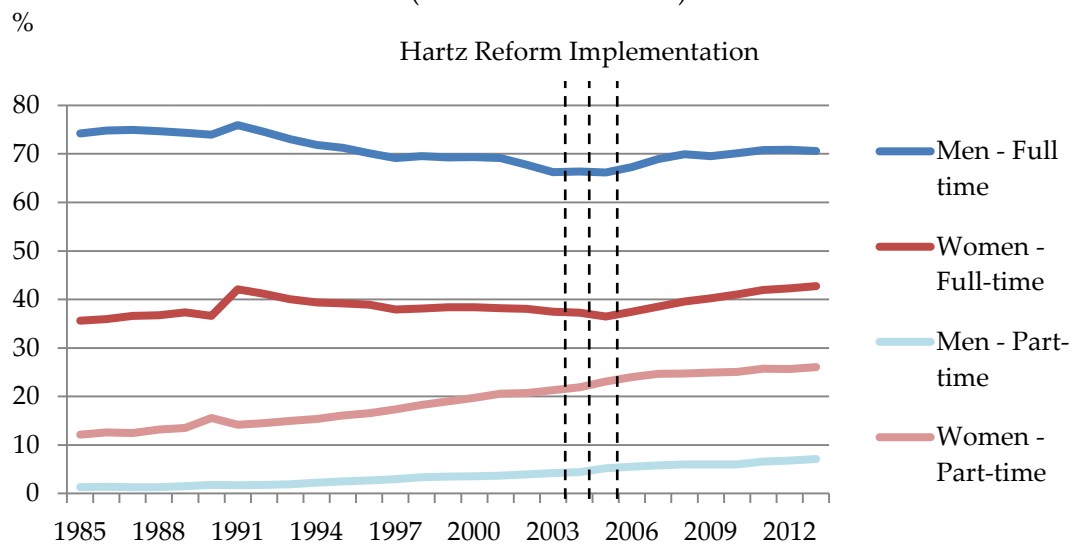
workers' (workers temporarily working less than usual) of the German labour force, on the other hand, had a peak at 2008 but the peak was probably due to the economic crisis. All in all, Germany has survived the recent economic crisis especially well.

Based on previous studies with advanced methods, it is hard to determine whether the increased employment was actually caused by Hartz reforms or something else. In Akyol, Neugart & Picher's (2013, 37-38) list more than a half of the studies found no significant employment effect. Yet, some of them did find a positive connection. Launov & Wälde (2013) argue that Hartz IV reform did not reduce unemployment but reforms I and III did. However, they also conclude that the total welfare effect of the reforms was negative, despite somewhat reduced unemployment (Launov & Wälde 2013, 24-25). A popular view is that Germany's strategy with the Hartz reforms was to increase flexibility at the margin of labour markets while keeping the core of labour markets mostly intact. Jobseekers in a weaker bargaining situation were encouraged and pressured to accept low-wage jobs and more atypical part-time jobs or temporary agency jobs. This process can be seen as dualisation of labour markets: the emergence of a 'secondary segment of atypical jobs' (Eichhorst & Marx 2009, 73-76) while regulation on conventional contracts remained relatively intact. Eichhorst and Marx argue, though, that the flexibilisation has not only influenced the margin of labour markets but affects the insiders as well. A growing amount of low-wage jobs also weakens the bargaining position of those with full-time employment. However, it should be noted that there have been some changes in the structure of the participating labour force in Germany, which might have led to differences in nominal average wage even if there was not any real change in wage setting. In other words, there could also be a composition bias. Nevertheless, there are studies suggesting flexibilisation might lower the odds of a high quality job for those who are to enter the labour market for the first time (Barbieri & Scherer 2009; Kahn 2007).

Another argument is that the flexibilisation has not taken place only through the easing of employment protection but also by liberalising collective bargaining. This view is presented by Dustmann & al. (2014, 176-183), but noticed also by Akyol, Neugart & Picher (2013, 43-45). They argue that the main reason behind increased employment was the moderate development of unit labour costs in Germany due to changes in wage-setting mechanisms. Dustmann & al. (2014) suggest that the effect was actually mostly caused by voluntary changes in collective bargaining, negotiated by labour unions, worker's councils, and trade unions a decade before actual Hartz reforms without any major involvement of German government. According to their argument, the decisive difference between Germany and some other countries in continental Europe would be a more flexible bargaining structure, more able to adjust to changes in global economy. Hartz reforms also coincide with the fall of collective bargaining coverage rates and general change in labour union structure due to the German reunification in 1990 and opening of the East-European economies after the collapse of the real socialist system and Soviet

Union. These events increased the supply of cheap but educated work force especially in Germany, which is strategically located in central Europe bordering ex East Bloc states. (Visser 2013, 8-9).

FIGURE 3 Part-time and full-time employment rates in Germany divided by genders before and after the Hartz reforms (OECD Statistics 2014)



From the statistics it appears (Figure FIGURE 3) that Hartz reforms had treated both genders in a similar manner even though there is a big level gap in both full-time and part-time employment. Weinkopf (2014, 210) however notes that there has been substantial decrease in female average weekly working hours in Germany during the crisis even though the decrease is less visible in full-time-part-time decomposition. Second gendered problem in German labour markets, according to Weinkopf, is that low-paying jobs are highly concentrated among women. As many have noted, German employment strategy in the economic crisis has been high internal flexibility rather than external flexibility. Therefore not all the changes are easily visible in employment statistics. It is also worth noting that according to Eurostat figures the increase in German employment in the 2000s has almost solely happened in the group of elderly workers (55-64-year-olds). In other groups the development has been very modest.

It has to be noted that not all the policy changes in Germany are not due to the Hartz reforms. For example already in 2000 employees were made entitled, under certain conditions, to reduce their working time if they wished. The part-time workers were also given possibility to early retirement, among other changes (LABREF 2014).

2.7 Labour market reforms in other OECD countries

2.7.1 The Nordics: flexicurity and gradual reforming

Besides the Hartz reforms, there have been lots of other labour market reforms in OECD countries in the past two decades. In Nordic countries the Danish model stands out of others. Understanding the nature of these reforms is important for assessing, whether labour market reform effect are generalizable across the countries.

Whereas the road of Germany in the 2000s was radical reforming after many years of only very conservative changes, Finland and Sweden are examples of modest gradual reforming. The focus in Sweden has been increasing the total employment in the long run by policies supporting an increased supply of labour. The labour market policy reforms in Sweden have also strongly emphasised the marginal groups in a weak position in the labour markets. In Finland, the majority of the reforms after 1990s have been about structural reforms in the job centre organisation. The biggest reforms in Finland were implemented in 1998 and 2001. Their role was mainly enforcing more efficient public job search services, and educating and helping people in the job search process. (Alatalo & Räisänen 2012, 32-36)

Denmark, on the other hand, has gone through extensive reforms in the mid-1990s. So-called 'flexicurity' policies had the idea of substantially increasing the amount of active labour market policy (ALMP) measures to balance the weakening of employment protection and the duration of unemployment benefits (while keeping the level of benefits relatively high). However, the flexicurity model was still deepened and developed in a series of smaller reforms in the 2000s as well. The main goal of Danish reforms has been a reduction in unemployment using incentives and activation. (Alatalo & Räisänen 2012, 34; Räisänen & al. 2012, 15-16)

Qualitative reform data in 15 EU countries is available from the Social Reforms Database by Fondazione Rodolfo Debenedetti and Institute for the study of Labor (IZA) for years 1980-2007. LABREF (2014) maintained by the European Commission and European Policy Committee has qualitative data about labour market reforms from the year 2000. These sources reveal that temporary work agencies were permitted and their functions liberated for private markets in early 1990s in the Nordic countries. Late 1990s Finland and Sweden gave employers with temporary or part-time status priority to permanent vacancies after a set period of time, but Sweden also further deregulated fixed-term contracts lasting less than a year. In other words, after liberalising non-regular contracts Finland and Sweden took a step back implementing some de jure employment protection for people with atypical contracts. Denmark, on the other hand, introduced flexible job contracts in 1998.

After the year 2000, there were a number of reforms in Denmark increasing ALMP policy programmes and some reducing labour taxes. After

2008 Denmark also reduced unemployment benefits. Finland on the other hand has been decreasing labour taxes, to some extent increasing ALMPs but not nearly as much as Denmark and also increasing unemployment benefits to some extent. Finland increased employment protection of collective dismissals in 2005 and again in 2008 and 2011 about temporary agency work. In 2007 Sweden simplified the regulation on fixed-term contracts and reduced employees' rights. Additionally, Sweden has been substantially reducing its labour taxation.

In Norway the regulations on temporary employment was made a bit more restrictive in 1996. In 2002, however, a substantial deregulation of the ban on temporary agency work was implemented (Eurofound 2009). The OECD summary measure considers the total effect of these two reforms to be liberalising.

2.7.2 Liberal regime: the tradition of low employment protection

United Kingdom removed its protective employment legislation on women and youth in 1989, and additionally removed some labour union rights, making United Kingdom a very market liberal society in terms of employment protection. In 1993, the trial period was extended from one year to two years. In 1999 there was some re-regulation on dismissal protection but the level of employment protection still remained weak. In 2000, there was finally a major change, when part-time workers were granted a guarantee to equal rights as full-time workers. The reform narrowed the gap between permanent full-time contracts and non-regular part-time contracts in the United Kingdom. Later in 2000s there were also a series of smaller reforms introducing new regulation, for example on fixed-term contracts, but they did not change the big picture in UK employment protection. (fRDB-IZA Social Reforms Database)

Ireland, like UK too, had very low employment protection to start with in the early 1990s. In Ireland the process has been introducing new regulation in small steps, while reducing taxation. In 2003 Ireland introduced an important law increasing employment protection of fixed-term workers. The law restricted the amount of fixed-term contract renewals that an employer can make, thus separating Ireland from extra-liberal United Kingdom and United States. Ireland is also an example of a country de-liberalising its labour markets. On American side of the Gulf, United States and Canada have not had any major labour market reforms affecting the level of employment protection in past two decades. In these countries the level has traditionally been low, and there has not been will to increase it either. (OECD Statistics, LABREF; fRDB-IZA Social Reforms Database)

The labour legislation in Australia and New Zealand was originally heavily influenced by British leissez-faire approach. In Australia *The Workplace Relations Act 1996* introduces workplace agreements that were mainly meant to be individual-level agreements but could also an enterprise. The law also introduced some employer duties no-disadvantage tests, actin. These changes moderately increased Australian dismissal protection, as they acted as a

minimum floor for employee rights, but did not affect the low level of temporary contract regulation. The following amendment, *Work Choices Act 2005*, by contrast individualised labour contracts again, removing the protective function the 1996 reform had. In New Zealand, the *Employment Relations Act 2000* re-introduced regulation for both temporary employment and regular contract dismissals. (Vranken 2005, 31-34)

2.7.3 Conservative-corporatist countries: mostly static

Central Europe, besides from Germany and Belgium, has not been very enthusiastic in doing major labour market reforms. Belgium in late 1980s was a very highly regulated labour market, one of the most regulated in Europe. In 1994 and 1997 Belgium implemented a significant liberalising reform packages liberalising fixed-term contracts and temporary work. First in 1994, fixed-term contracts were made renewable for maximum number of four times. In the 1997, the limit was abolished altogether. Yet, the level of regulation on non-regular contracts remains still relatively high in Belgium as compared to Anglo-Saxon or Nordic countries. (fRDB-IZA Social Reforms Database)

France also had relatively high level of employment protection in late 80s but unlike Belgium, France has not had any major liberalising reforms. In Austria and Switzerland too the changes have been very modest the past two decades, and there has not been any notable reforms affecting employment protection legislation.

Netherlands differs somewhat from other countries traditionally regarded conservative-corporatist. Netherland, unlike others, had relatively low level of temporary employment protection to begin with in late 80s. It is not without a reason that Netherlands is sometimes considered to have common qualities with the Nordic countries in terms of social policy. Moreover, in 1998 Netherlands further liberalised the employment protection of people working on temporary contracts. A large package included repealing the permit system of temporary work agencies and a raise of the maximum term length, but also increased individual-level protection. It is worth noting, however, that Netherlands still has relative high employment protection on dismissals. (fRDB-IZA Social Reforms Database)

Japan, the only Asian country in the dataset, liberalised its part-time, temporary, and fixed-term work near the change of millennia, but keep the regulation on regular employment untouched. (Song 2012, 162)

2.7.4 Southern Europe: rigid labour markets with some reforming

South-Europe has traditionally been the most conservative (in the sense used by Esping-Andersen 1990) part of Europe in terms of organising welfare systems. In practice, South-European conservatism means high employment security for the primary (male) bread-winner of the family. Greece was a good example of rigidly regulated South-European country until 2003, when both fixed-term contracts and temporary work agencies were greatly liberalised all at once.

Greece still maintained relatively high employment protection legislation until latest economic crisis but the difference between temporary contract protection and dismissal protection is not very big. Italy, on the other hand, has been constantly liberalising its temporary labour markets until 2000s, while keeping employment protection of permanent contract workers intact. According to OECD definition, Italian regulation of temporary contracts was highest in non-communist Europe in 1985. There were liberating reforms on temporary contracts in 1987, 1991, 1997, 1998, 1999, 2001, and 2003. In the year 2000, the legislation on part-time employment was reformed but it was not purely a liberalising reform since new protection was also included (fRDB-IZA Social Reforms Database).

Portugal has traditionally had exceptionally high dismissal protection and also relatively high regulation on temporary contracts. Portugal had important liberalising reforms in 1996, 2003, and 2007 regarding temporary contracts. In addition, there has been moderate deregulation on permanent employment protection but nothing very influential. Spain, on the contrary, is a country with relatively high regulation on temporary contracts but rather average one on dismissal protection. Spain had major liberalising large-scale labour protection reforms in 1994 and 2010, which affected both non-regular and regular contracts. The first one in 1994 also legalised temporary work agencies. (fRDB-IZA Social Reforms Database)

Cappellari, Dell'Aringa & Leonardi (2012) note, using two reform cases from Italy as an example, that in South-European legal environment the reforms might be hampered by the increased uncertainty due to the complexities in legal procedures. They argue that any reform in such a situation may be a cause of uncertainty for firms and thus have negative effects at least on the short run. This is a troublesome finding since it implies that reform effects might not be uniform with respect to reform direction in all the countries in question.

2.7.5 Eastern Europe: new regulation after the fall of communism

After the collapse of Soviet-led communist 'East-bloc', East-European countries witnessed a drastic social, political and economic reversal. The whole institutional system had to be rebuilt. After the democratisation of East Bloc in early 1990s, many countries went through a massive labour market deregulation. However, the regulation regarding labour markets was partly re-introduced after the system subversion. Poland, for instance, deregulated the labour markets in several stages in the course of 90s and early 2000s, regarding especially fixed-term contracts, making reforming essentially partial. Consequently, the share of temporary employment in Poland rose from 5% to 27% between 2000 and 2006 (Eurostat 2015).

Many East-European countries increased their regulation on temporary contracts in the course the 2000s after initial liberalisation. For many countries, the reregulation was necessary harmonisation for EU directives (Davidsson 2011, 5 & 11). Major reforms of that type were implemented in Czech Republic 2004, Hungary 2003, Poland 2004 and Slovakia 2007. Czech Republic set limit of

two years for maximum total duration of temporary contracts, Hungary limited the duration of fixed-term contracts to five years and later in 2005 increased the rights of agency workers, and Poland introduced a rule according to which the second renewal of a fixed-term contract must be for indefinite period. Furthermore, Poland tightened the definition of temporary work in 2003. In 2007, Slovakia increased the compensations for employees at collective dismissals, tightened the requirements of a part-time employee dismissal without a cause, limited the number of fixed-term contract renewals, and widened the definition of dependant employment. At least Polish and Slovakian reform packages can be considered examples of notable re-regulation (OECD Statistics, LABREF).

2.8 Previous study results regarding the quality of employment

And what do we actually know already about the effects of labour market deregulation on the quality of employment? Studies concerning quality of employment and institutional changes are not very abundant. A very influential study covering many issues discussed in this paper was Bassanini & Duval's (2006) *Employment Patterns in OECD Countries: Reassessing the Role of Policies and Institutions*. They argue in their empirical study that strict employment protection laws do not have a significant effect on aggregate unemployment but for women they do substitute part-time jobs for full-time jobs. Ergo, flexibilisation can be assumed to affect women more than men, possibly in a positive way. In addition, they find out that strict EPL reduces youth entry into labour markets. In their baseline two-way Fixed Effects model (estimated with SURE, Seemingly Unrelated Regression Equations) high EPL decreases female full-time employment but does not affect male employment. Although it is important to realise EPL in Bassanini's & Duval's study is general EPL, not EPL of non-regular contracts which was mostly affected by the Hartz reforms. Bassanini & Duval also notice that unemployment benefit effects are connected to ALMP spending and minimum wage levels. Additionally, they point out that macroeconomic condition matter: negative total factor productivity shocks, deteriorations in the terms of trade, increases in the long-term real interest rates or negative labour demand are connected to the increased unemployment. These effects also depend on institutional circumstances. They have also included OECD definition of product market regulation in the analysis and found a significant positive correlation with unemployment. Bassanini's and Duval's research setting is very similar to this study with the main difference that they concentrate mainly on unemployment instead of employment.

Kahn (2007) uses micro-level household panel data from nine countries (1996-2001) to examine the effects of employment protection reforms on total and temporary employment. The countries in question are Belgium, Finland, France, Germany, Italy, the Netherlands, Portugal, Spain and the United

Kingdom. He reaches the conclusion that such liberalising reforms do increase the likelihood of temporary jobs but do not necessarily improve general employment, in some cases they appeared to have actually lowered. The amount of people with permanent jobs has not increased. This finding is an important benchmark for this study. Kahn's conclusion is that employment protection reforms have increased the substitution of permanent work for temporary work, exactly opposite as Bassanini and Duval (2006), even though he notes these might be short-run effects reacting to the changed legal environment.

Hevenstone (2010) mapped the institutional determinants of atypical employment using macro-level Fixed Effects and random effects estimators on developed 30 countries. She found out that fixed-term (temporary) employment increased with union density, higher unemployment benefits, higher wages and more women in labour force. Part-time jobs, on the other hand, are positively connected to low amount of industrial actions, high real wages, and high amount of women in labour force. Hevenstone does not find a significant connection between employment quality and EPL but she does detect that a wide gap between regular and fixed-term EPL results in more fixed-term employment. There is no connection between part-time employment and EPL. A reason for that could be that in many countries part-time employment is covered by regular EPL.

Koeniger, Leonardi, and Nunziata (2007) present country-level panel data evidence on the effects of institutions, and changes in them, on wage inequality. They suggest that changes in the strictness of employment protection, benefit replacement rates, union density, and minimum wages explain a considerable part of the male wage inequality. The effects of labour market flexibilisation, which is also the main interest in this study, have had a particularly substantial effect on the increase of wage inequality. According to their simulation, if the institutions in Central-European countries were liberalised to match institutionally the level in the United States, the wage disparity would increase 50-80%. These results indicate a connection between liberalising labour market reforms and low-wage jobs, but they do not yet show anything about part-time or temporary work. Similarly, OECD report (2011, 110-115) discovers that even when controlling globalisation effects, technological development and financial openness, labour market deregulation has played a major part in increasing earning inequality. OECD report uses Fixed Effects within-country estimation on 22 OECD countries to reach these conclusions.

Causa (2009) uses European Labour Survey data between 1995 and 2005 on 20 OECD countries to examine the connection between hours worked per capita in a country and policy institutions. The analysis uses Fixed Effects estimators on country, time, employment, and marital status, and is interpreted conditional on employment. First of all, Causa finds out that results differ significantly among women and men. Secondly, she finds a positive connection between flexible labour markets and hours worked by men, but mostly concentrating on the EPL on working hours regulation. The results are

consistent with Bassanini & Duval (2006) in the sense that strict EPL may encourage to use to circumvent the regulation affecting full-time jobs. Both studies also agree that high EPL on regular contracts is associated with a substitution of part-time for full-time work for women.

Blanchard and Landier (2002) suggest that partial labour market reforms, aimed to affect only the margin of the labour market, not the regular primary sector, might actually lower the average productivity of labour rather than increase. Using French data from the 1980s institutional reforms, they argue that such reforms might lead to pervasive results, not increasing labour market efficiency due to the forced coexistence of fixed-duration and regular contracts, but lowering the welfare of the workers at the margin. The rationale here is the regulation gap between regular and non-regular contracts. Firing an employee with atypical contract is cheap but gets more expensive if employers choose to keep the workers as regular employees. This may lead to a situation where higher turnover actually means higher unemployment. Additionally, Fremigacci & Terracol (2013) find evidence from France suggesting that lower tax rate on part-time jobs, like the case with Mini- and Midijobs, actually lowers the odds of using part-time employment as a stepping stone for better jobs. With a higher tax rate, fewer people join the atypical labour markets but, on the other hand, a bigger proportion of them end up in full-time employment. Whether this kind of situation is beneficial for the society is an open question but at least supporting atypical jobs does not look likely to increase the amount of people in permanent employment. Blanchard and Landier (2002) note, being important regarding policy-making, that such partial reforms only affecting the margins are politically easier to adopt than full labour market reforms since they leave the core of the labour markets unaffected. Consequently, they might be favoured for political reasons, not social or economic ones.

In conclusion, empirical evidence about the connection between the quality of employment and labour market regulation is all but clear. There are few matters, which are agreed across the literature: the connection is per se gendered, and the structure of reforms matters. Partial reforms are expected to yield in different kind of results than all-around liberalisation. Previous studies suggest that changes in employment protection legislation would affect women full-time employment while on men it might have a bigger role for wage inequality and working time. Still, the overall effect of the EPL deregulation is more or less unclear, or there is no clear consensus. One reason for that might be the difficulties to disentangle, which part of the EPL changes have been related to partial labour market reforming, and which ones have affected the core labour force as well.

3 DATA SOURCES AND METHODS

3.1 Micro vs. macro: methodological examples

Reform study literature presents several methods for estimating the employment effects of labour market reforms. In micro-level, in most recent and advanced studies four of them prevail: Differences-in-Differences, Propensity Score Matching, and Stock-Flow Matching (see studies presented by Akyol, Neugart & Picher 2013, 37-38). Macro-level cross-country studies often rely on various panel data methods. Both of these approaches have their own strengths and weaknesses.

Differences-in-Differences (DID) utilises the idea that certain policy environments differ in an unobservable manner geographically but the changes among one unit can well be observed. For example, if there are two countries with different policy structures, but we do not know exactly in which way different, we can still use the other country as a comparison point for the country of interest. When an observable change in the policy environment happens, for example a labour market reform, the difference to the development in the other country without a reform can be observed. In this manner, DID offers a relatively simple way to analyse the policy effects by finding similar comparison points from other countries that did not reform during the observed time period. (Angrist & Pischke 2009, 169-182)

In policy analysis framework, Propensity Score Matching (PSM) is used to estimate the effects of a reform by finding the covariates that predict the effect. PSM aims to reduce the selectivity bias: a proportion of the difference between groups A and B is due to the selection, not the treatment (in this case the reform) itself. The main idea is to create confounding variables to imitate the potential results of the reform to those individuals who are not actually experiencing it: i.e. for those who opt out from the reform created programmes. In other words, PSM compares the potential outcomes of those individuals who received the treatment and those who did not. In order to do this, 'average treatment effect' is estimated for both the treated and non-treated. The confounding variables are

created by using observed variables that predict the participation to the treatment. (Rosenbaum & Rubin 1983; Angrist & Pischke 2009, 59-63)

Stock-Flow Matching (SFM) concentrates on finding a connection between outflows and inflows (from/to unemployment) and institutional changes on the background. SFM is thus a classical matching model with observations of job applications and vacancies. The matching function describes the process and the efficiency of matching those two variables. The major difference to basic search model is simultaneous applying to all available vacancies. The model can be further augmented with the information about timed reform effects. Other empirical micro-models used by previous studies are, for example, Potential Outcome Model (also known as the Rubin Causal Model), and Search-and-Matching General Equilibrium Model (Akyol, Neugart & Picher 2013, 37-38). (Pissarides 2000, for example see Klinger & Rothe 2010, 9-13)

Our approach is to study labour market reforms at the macro level instead of micro level. The problem with macro approaches generally is the elaboration of reform effects: there might be several kinds of biases, selection bias, simultaneous effects, composition bias, etc. Micro-level studies are, beyond doubt, more effective in terms of reducing geographically local biases and elaborating other policy-effects. Nevertheless, there is still the question about transnational interdependencies and international trends. In addition, macro studies can without a doubt better capture various kinds of spillover effects. Another benefit of macro studies is high external validity: the results can be easily generalised to all the countries instead of just one specific situation or geopolitical area. And of course choosing the level of the analysis is also always a question about how to acquire best possible data. Sometimes there is just not enough valid data for a proper micro-level analysis.

The method used in this study is cross-country panel data analysis. The idea of panel data methods is, like in Differences-in-Differences which actually often utilises panel data, that unobservable phenomena, which vary across observational units within time but not within the units across time, can be controlled with panel methods. The most common way to run panel data regression is to use Random Effects or Fixed Effects, which will be explained in the next chapter. For example, Fertig, Kluve & Schmidt (2006), Duval (2008); Bassanini & Duval (2006); Felbermayr, Larch & Lechthaler (2012), and Flaig & Rottmann (2013) all use panel data in their macro-level studies. Usually the idea with macro studies is to analyse the relationship between national labour market indicators and labour market functionality. Flaig & Rottmann (2013), for example, use several estimation methods on panel data about labour market institutions and unemployment rates in OECD countries 1960-2000, and try to explore the connection. Their empirical setting is thus to large extent similar than here, even though ours follows more closely Bassanini & Duval. Panel data also gives a possibility to examine broader phenomenon effects and control the regional variables.

There are also studies that combine the micro and macro approaches. Dieckhoff & Steiber (2012) use a two-step approach to estimate how labour

market regulation, labour unions, and wage-setting mechanism affect the inequality dynamics of the prime-age workforce. The strength of the method is that it can better assess the transitions between different labour market statuses on aggregate level. All in all, this method offers an interesting and potentially useful approach into reform study but here it will be left for future research.

3.2 Panel data methods: Pooled OLS and Fixed Effects

In panel data, there are both longitudinal and cross-sectional dimensions. There are two main estimation methods used here: Pooled OLS and Fixed Effects (FE). When using panel data, the simplest way to do regression analysis is to use pooled ordinary least squares (OLS) estimation. Pooled OLS is a close equivalent to linear regression analysis with OLS in cross-sectional data, with the difference that there are several observations for same units. Hence, we cannot assume that the observations were independently distributed across time. This is the weakness of simple pooled OLS method but it can still be tolerated to get basic results. The problem can also be solved using a time trend component or year dummy variables. Here I try the latter alternative (Areg models). There is a risk though that the panel data might suffer from typical time series problems, such as non-stationarity, stochasticity, etc. In this case the results might be biased. (Wooldridge 2013, 444-446)

Perhaps the easiest way to overcome the possible problems of panel data would be to use two-period analysis, for example First Differencing (FD). First Differencing is one manner to remove the variables (both observed and unobserved) that are static through time but vary cross-sectionally. Such might be in this context, for example, 'entrepreneurial spirit' affecting atypical employment statistics (see: Hevenstone 2010) and general social environment. Dutch society, for example, heavily encourages female part-time employment (Hevenstone 2010, 324). FD method greatly reduces the amount of possible omitted variable biases but also requires lots of observation units. In First Differencing, the time observations for each variable are simply subtracted from each other, i.e. taken a time-difference. The model assumes that the change of error term is uncorrelated with the change of the independent variables (strict exogeneity), which is consistent with normal OLS assumptions, but independent variables can actually be correlated with unobserved variables that stay constant over time (because the latter is erased in taking the difference). It is crucial here that the observed variables have some variation over time; otherwise there will not be any significant results. The strengths of FD method are, however, the flexibility in policy analysis framework: there can be several changes happened between the differenced periods and they all are considered in the analysis simultaneously. For example, if we want to examine the effects of liberalising policy reforms in several countries in little different moments in time, we can simply choose a wide enough time span for the differencing. This way the problems of time series autocorrelations and non-stationarities are also

effectively solved. Unfortunately, the method also loses a lot of valuable data variation, and thus is less effective, or requires a big enough group of observations (countries). Another problem is that there might have been other relevant changes during the time span not covered in the data, thus biasing the results. (Wooldridge 2013, 455-464)

Finally, a more developed method, which I am using here, to get rid of the time-static biases (c_i) is the Fixed Effects transformations. In Fixed Effects, the average over time is subtracted from each observation (i). This is called time-demeaning. Under strict exogeneity assumption and serially non-correlated error terms (u_{it}), like with first-differencing, the FE estimator is unbiased. The asset of FE is though that it utilises more time observations, hence the model is more effective. It is, however, not necessarily better than first-differencing if we want to concentrate on total changes after a particular moment of time, as the case often is with policy reforms taking place in certain moment of time. In this case, however, the reforms have been carried out at different times and often gradually. Another possibility would be to use random effects estimator but it requires stronger assumptions, not necessarily valid. Therefore Fixed Effects is the choice. (Wooldridge 2013, 481-486)

Fixed Effects estimator is written as follows (the case with only one explanatory variable, dependent variable is y_{it}, while X_{it} is independent):

$$y_{it} - \bar{y}_i = \beta(X_{it} - \bar{X}_i) + (c_i - \bar{c}_i) + (u_{it} - \bar{u}_i) = \ddot{y}_{it} = \beta\ddot{X}_{it} + \ddot{u}_{it}$$

$$where\ \bar{X}_i = \frac{1}{T}\sum_{t=1}^{T} X_{it}\ and\ \bar{u}_i = \frac{1}{T}\sum_{t=1}^{T} u_{it}\ \ and\ \bar{c}_i = \ c_i$$

$$where\ \ t = 1, \dots, T\ \ and\ \ \ i = 1, \dots, N$$

The problem of the Fixed Effects is that it removes useful information while time-demeaning (Angrist & Pischke 2009, 168). Usefulness, of course, depends on about what we are actually interested. If we are only interested about the effects of changes within one unit, like with reform policy analysis, this is not much of a problem if there is enough within-unit variation. We just have to keep in mind the interpretation, and that it loses some of the information. Another serious problem might be the serial correlation of error terms over time: in this case the FE estimator will be biased, and it might be better to use First Differencing instead (Wooldridge 2013, 487-488). Risk for serial correlation is lower, if there are not too many time observations chosen.

Sometimes there are reasons to believe that there might be both types of stable unobserved biases: the ones that remain stable over time within a country, and the ones that are globally (at least almost) uniform but vary over time. In this case, a two-way Fixed Effects estimator might be preferred. It does, however, greatly restrict the variance in the data for which reason I am not trying two-way FE approach here. What will be used to test the cross-country effects and get rid of possible underlying time trends instead is Time-absorbed

Pooled OLS (Areg model), which will be used to supplement Fixed Effects. Areg estimation uses systematic controlling for each separate time observation, therefore only considering cross-country variance. Areg controls time effects as Fixed Effects does the same for geographical bias. Together these two methods can be used to confirm each other.

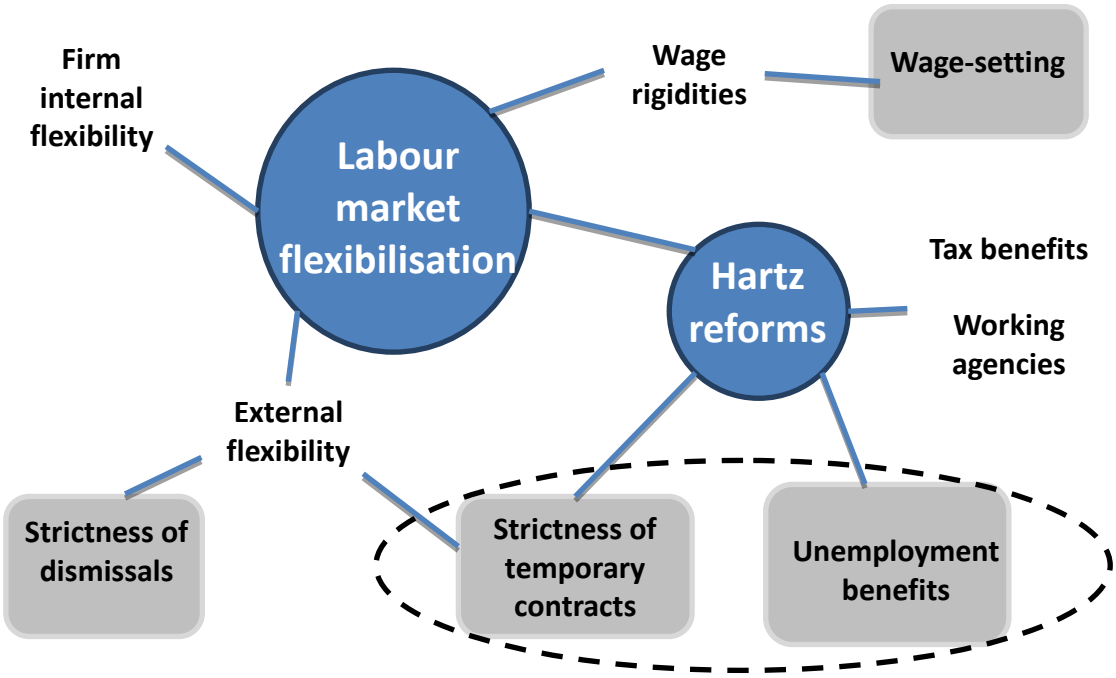
3.3 Research design

The main analysis method used in this study is an institutional approach with panel data regression. Policy reforms can be seen as changes in various institutional attributes. If these institutional attributes or their proxies can be observed, it is possible to estimate the reform effects through the institutional changes and their effects. In practice, the estimation can be done with Fixed Effects panel regression analysis. The indicators for the institutional variables can be derived from previous research and OECD supplies some indicators about labour market institutions, most importantly strictness of employment protection for different types of contracts. In the analysis, the indicator for employment protection of temporary contracts will form the primary operationalised variable of a liberalising partial labour market reform. This kind of analysis would not be optimal to analyse the effects of a precise change in a certain country since it misses a lot of information. In this case, however, it is not a problem since the main interest lies within the possible effects of Hartz-like reforms to other countries, not the absolute effects of Hartz reforms themselves. The specification of the econometric model uses Bassanini's and Duval's work (2006) as a reference point. The specification used in their study will be fitted to a suitable form and method. Bassanini and Duval use a SURE estimator with country and time Fixed Effects variables. This is not exactly what is done here but specification of control variables is to large extent similar: the biggest methodological difference being that time fixed effects are excluded. The variables describing the quality of employment in the analysis are part-time employment rate, involuntary part-time employment, temporary employment, and low-wage employment, compared to full-time employment rate. Additionally, the analyses are run for population sub-groups, provided by OECD, to assess the gender and age effects.

The information about the effects of institutional attributes, or the changes in them, on the quality of employment can further help us to evaluate the functionality of the different kinds of labour market reforms: Hartz reforms or any other labour market reforms can also be broken down into changes in institutional variables. Therefore, instead of observing a reform as a timed event, they can also be observed through institutional data. Sufficient elaboration of omitted variables could be achieved using common macro-economic variables and panel regression methods. In practice, the proxy for a liberalising labour market reform in this study will be a decrease in the protection of temporary contracts, and reduction of unemployment benefit entitlements, measured here

by gross replacement rate (GRR). The assumption is, if there is a connection between the quality of employment and liberalising reforms, it should be observable through these proxy variables. If the critique presented about Hartz reforms is valid for all such reforms that they are mainly increasing atypical jobs, then the indicators for employment protection of temporary contracts and GRR should have a negative connection to part-time, involuntary part-time, and temporary employment.

FIGURE 4 Liberalising labour market reform decomposition: the variables with grey background are operationalised from the data and are part of the analysis



FigureFIGURE 4 shows the most important concepts of liberalising labour market reforms and their sub-fields. All of the concepts are parts of labour market flexibilisation but only the ones with grey background are quantified with the data. The rest are left out from the analysis. The analysis will emphasise and the strictness of temporary contracts and unemployment benefits because they have been integral elements of the Hartz reforms as well. Strictness of dismissals and wage-setting are included in the analysis but rather in a controlling sense, not as a variable of interest an sich. It good to remember here that we are considering partial labour market reforms liberalising mainly non-regular employment contracts, not the regular ones. What are left uncontrolled of Harz Reforms are the changes in tax benefits and working agency organisation. Such changes are too detailed to be meaningfully analysed with macro-level quantitative methods.

The greatest challenge in this method is the plausible operationalisation of the institutional attributes and environments. If the operationalisation is not truthful, the results end up being meaningless. Jelle Visser (2013, ICTWSS Database) has provided an extensive quantification of several labour market

institutions in OECD countries, and this study will also rely on his work. Additionally, Esping-Andersen's (1990) policy regime division is used. It would have been very convenient to use the taxonomy about internal and external flexibility as presented by Eichhorst, Marx & Tobsch (2009). Unfortunately, the data is not available as panel form. It is, however, fortunate that there are OECD definition based indicators that are parts of different forms of flexibilisation. The problematic part left is the firm internal flexibility, which is not directly covered in strictness indicators and is also harder to measure. One possibility to circumvent internal flexibility problem would be to simply divide countries into groups based on the values of internal flexibility presented above, but that would not help to improve the Fixed Effect estimation of reform effects. The lack of a proxy for internal flexibility might not, however, be actually a huge problem. Johannes Giesecke (2009, 630), who uses Germany as an example, argues that external flexibility has more severe consequences for workers at the margin of labour markets than internal flexibility does. Yet, it may still cause some bias if there is unobserved variation.

In addition, there are control variables about macroeconomic conditions (output gap), ALMP spending, tax wedge and immigration inflows. Output gap provided by OECD is used, following the example of Bassanini & Duval (2006), to capture the major country-specific macroeconomic fluctuations. Immigration inflows is a variable not used e.g. in Bassanini & Duval's paper, or many other studies either. It might, nevertheless, be important factor explaining atypical employment. It is actually surprising that immigration statistics are not often used to control the effects on employment statistics even though immigration has a direct effect on labour market dynamics (see: Raess & Burgoon 2013). Additionally, the theory about labour market institutions also suggests that the results of different policies and shocks might be different depending on institutional environment. Therefore, interaction terms between institutional variables are also added into the regression to enhance the modelling. OECD also offers data on public childcare expenditure (ranging between 0 and 2%) but unfortunately the dataset ends already in the year 2009. Childcare spending can be assumed to affect women's employment, but also to be strongly linked to policy regimes. Due to the data restriction childcare spending is left out from Fixed Effects estimations but used in the Pooled OLS model.

Tertiarisation would possibly be a significant factor in atypical labour market dynamics (see: Eichhorst & al 2010), and it is easy to gather relevant data about it as well. Data about employment shares in different sectors is widely available. The real problem is, however, the multicollinearity between tertiarisation and employment protection legislation. As EPL very significantly explains tertiarisation ($p<0.001$), and both tertiarisation and EPL potentially explain atypical employment, we run into an identification problem. As a result, tertiarisation is not chosen as a controller in order to avoid the identification problem. Still, one has to remember the possible connection to employment quality, when making conclusions.

An additional possible explaining factor could also be an external time trend, caused by a slow socio-cultural change in western societies. It is a hypothesis problematic to test however, because many institutional changes are also time-correlated. There are some political trends as well, which shape the institutions. It is hard to separate these political trends from possible cultural trends regarding e.g. acceptance and preference of female employment. Here I have no choice but to assume there are no universal time trends causing changes in the average quality of employment, caused by unobserved variables. The only realistic way to circumvent the time trend bias would be using country-demeaning or two-way Fixed Effects instead of time-demeaning in order to eliminate all time-related unobserved biases that affect all the countries in a similar manner. Time-absorbed pooled OLS (Areg) also catches some time-trend effects but lacks the control country-specific unobserved biases.

Suitable time span is also an issue to consider. Some countries lack the data on some years altogether. Ex East Bloc countries, for example, do not have data before early 1990s. Besides, the collapse of real socialist system in Eastern Europe might have had an uncontrollable effect on western economies too. Therefore I am restricting the main analysis to the years between 1993 and 2011 (GRR data ends at the year 2011) but also briefly looking the results on the whole time span 1985-2013 for comparison. This restriction both balances the data and reduces biases caused from the radical systemic change in Europe around 1990. Bassanini & Duval (2006) circumvent the problem dividing some country into two time groups before and after the change. Their data is, however, older than here hence they need the older years in order to gather enough data. Also, there are only 11 year observations of GRR in the ex East Bloc countries in the analysis. GRR is needed in all the estimates, hence the available years for Eastern Europe are further restricted. This causes a possibility for a bias because there is a whole regime of countries with less observations than others, and the countries with less observations are not randomly assigned. Only straightforward way to fix the East Bloc collapse bias would be abandoning these countries from the analysis. There would then, however, be only 21 units in the analysis which might not be enough. Therefore, despite the possible bias, East-European countries are kept but with shorter time span the size of the bias is hopefully reduced.

Another important aspect to pay attention is nonlinearity. The basic assumption in Fixed Effects and linear pooled OLS is that possible connections between dependent variables and regressors are linear by nature. These assumptions might not always hold, which needs to be examined case-by-case. Possible nonlinearities can be hump-shaped, when effect is neither decreasing nor increasing for the whole range, or s-shaped, which happens mostly when dependent variable has a limit feasible range of values. This actually is the case with employment rates, since they are always percentages. Nonlinearities can be corrected e.g. with logarithmic transformations, adding dummy-variables, or adding exponential variables. Here, the possible hump-shape relationship

between wage-setting dynamics and employment are controlled using exponentials.

The regression analysis will be done first with simple linear pooled OLS regression using all the data available, i.e. all country-year observations with full data of all variables. Pooled OLS will show the links between institutional characteristics, and labour market performance, or quality, but will not be very helpful in interpreting causal effects of institutional changes. It will, on the other hand, enable the use of all independent variables, including those that remain constant over time. The proper analysis will be done using time-demeaned Fixed Effects estimator, which controls both observed and unobserved heterogeneity that stays constant over time. The regression method will tell us what the effect of change in the explanatory variable is on the dependant variable, with other variables controlled. The estimation will also be supplemented with Time-absorbed pooled OLS to increase the plausibility.

Even though the institutional panel regression method may give very plausible results of the temporal connections between institutional changes and changes in the labour market dynamics, there are still problems in interpreting causality. Institutional changes are political processes, and they may well be driven by current beliefs of good practises, in other words, they are not random processes. They might be linked to the previous labour market performance causing simultaneous causality problems, and they are probably linked to the reforms made in other countries. Therefore, interpreting the causality from Fixed Effects model is not completely trivial. In Spain, for example, employment protection reregulation was politically driven by high levels of temporary employment (Davidsson 2011, 15-16). There might be a political force driving higher EPL if the levels of atypical employment are very high. Nonetheless, the political processes should not affect the impacts labour market liberalisation has on atypical employment, even though it might create a counter-reaction. If labour markets adapt fast to the changes in EPL, this phenomenon should not cause a major bias in the analysis, even though it might give some troubles for interpretation. It could, however, also create a bias if there is a significant time lag between the reforms and labour market adaption. (Reed 2010, 80-82)

Other possible threats for correct identification are looming unobserved variable biases. It might be that employment variables change over time for a reason not covered in the analysis. Product market regulation, for example, might be such issue especially since product market liberalisation is often linked to labour market liberalisation. Other possible hidden culprits are globalisation and tertiarisation, which might cause changes over time. However, Potrafke (2010) reaches the conclusion using same data as Bassanini & Duval (2006) that globalisation did not have a systematic influence on labour market institutions in OECD countries. Nevertheless, the interpretation still leaves room for globalisation driving the precarisation of jobs due to increased global competition even if institutions remain unchanged. Changes in group compositions might also cause bias especially to the share of low-wage

employment. I am also unable to cover the effect of reforms that change organisational structure instead of directly affecting to the levels of EPL or other benefits. Moreover, here we have to rely on two numerical measures of EPL: there is no way to guarantee that there would not be any major qualitative differences in employment protection legislation. Besides, these measures only take into account de jure legislation, not practical law enforcement.

3.4 Collecting the data

There will be in total 25 OECD countries in the analysis: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland, the UK, and the USA. South-Korea was first considered but then left out of the final stage of the analysis due to the lack of data in certain key variables. The dataset is collected between the years 1985 and 2013, so there are altogether 727 observations, of which 254-443 are full observations depending on explanatory variable in question. Time span used in the analyses is 1993-2011. The required cross-country data is to large extent available in OECD Statistics database. Eurostat database is also used as supplementary source of data. All the data used in the study, except for historical tax wedge data from OECD, is open to public. The variables offered are aggregates such as total employment, total unemployment, hours worked per capita, part-time employment, involuntary part-time employment, and share of temporary employment (of dependant employment). The variables describing atypical employment are counted as a percentage of total employment. In addition to labour statistics, OECD Statistics also offers a wide range of macro variables, e.g. public expenditure on active labour market policy programs, and several indicators about labour market strictness. The latter would play a crucial role in panel analysis method. Employment statistics are counted per working age population, namely 15-64-year-olds, and they cover both dependant employees and self-employed.

In addition to OECD, ILO and Eurostat, I use Jelle Visser's institutional decomposition on ICTWSS Database to form the variables describing collective bargaining structure and the role of labour unions. ICTWSS data provides indicators of labour market coordination, centralisation, level, and type, among others. Even though the values are not strictly additive, they still have a linear interpretation and can thus be used normally as a control in regression analysis. We just need to keep in mind the nature of these variables when interpreting the results. In addition to the wage bargaining indicators, I also divided the examined countries into social policy regimes based on Esping-Andersen's classical taxonomy (1990) for the OLS regression to control even more profound institutional differences, which cannot be explained by simple flexibility or wage bargaining variables. The regimes are Liberal, Conservative, Nordic, South-European and Developing. Japan is here considered a Conservative

country. Table 2 presents the explanations for different values of ICTWSS indicators for wage-setting and collective bargaining.

TABLE 2 Methodology and explanations of wage-setting and collective bargaining indicators (ICTWSS 2013)

Coordination of wage-setting	
5	a) centralised bargaining by peak association(s), with or without government involvement, and/or government imposition of wage schedule/freeze, with peace obligation (example: Sweden prior to 1980) b) informal centralisation of industry-level bargaining by a powerful and monopolistic union confederation (example Austria prior to 1983) c) extensive, regularised pattern setting and highly synchronised bargaining coupled with coordination of bargaining by influential large firms (Japan prior to 1998)
4	a) centralised bargaining by peak associations with or without government involvement, and/or government imposition of wage schedule/freeze, without peace obligation (example: Ireland 1987-2009) b) informal (intra-associational and/or inter-associational) centralisation of industry and firm level bargaining by peak associations (both sides) (example Spain 2002-8) c) extensive, regularised pattern setting coupled with high degree of union concentration (example: Germany most years)
3	a) informal (intra-associational and/or inter-associational) centralisation of industry and firm level bargaining by peak associations (one side, or only some unions) with or without government participation (Italy since 2000) b) industry-level bargaining with irregular and uncertain pattern setting and only moderate union concentration (example: Denmark 1981-86) c) government arbitration or intervention (example: UK 1966-8, 1972-4)
2	mixed industry and firm-level bargaining, with no or little pattern bargaining and relatively weak elements of government coordination through the setting of basic pay rates (statutory minimum wage) or wage indexation (example France most years)
1	fragmented wage bargaining, confined largely to individual firms or plants (example USA and UK since 1980)
Type of coordination of wage-setting	
6	State-imposed bargaining (incl. statutory controls in lieu of bargaining)
5	State-sponsored bargaining (this includes pacts)
4	Inter-associational by peak associations
3	Intra-associational ('informal centralisation')
2	Pattern bargaining
1	Uncoordinated bargaining.
Level of bargaining: The predominant level(s) at which wage bargaining takes place	
5	bargaining predominantly takes place at central or cross-industry level and there are centrally determined binding norms or ceilings to be respected by agreements negotiated at lower levels
4	intermediate or alternating between central and industry bargaining
3	bargaining predominantly takes place at the sector or industry level
2	intermediate or alternating between sector and company bargaining
1	bargaining predominantly takes place at the local or company level
Centralisation of wage bargaining	
0-1	Summary measure of centralisation of wage bargaining, taking into account both union authority and union concentration at multiple levels

Most of the changes happened in wage-setting indicators in the dataset are either more or less permanent switches into a lower level of bargaining, or frequent changes between two or three types and levels of wage-setting (regarding type, level, and coordination). These anomalies can be explained with the nature of collective bargaining: in some years a centralised agreement may be agreed on, while on other years not. Therefore, the changes are not always of a permanent type, but depending on the current situation. However, those changes that are stable are almost all decentralising and de-coordinating. Such reforms have been carried out for example in Australia 1992, Czech Republic 1994, Ireland 2008, Japan 1997, and in the United Kingdom 1993. Changes in centralisation are, on the other hand, mostly linear and continuous in time within a country, there being development into both directions. Regarding the types of coordination, uncoordinated bargaining is typical in liberal regime countries such as Canada, the UK, and the USA, but also in countries such as France and Greece (the difference comes in other indicators). Belgium is the only country typically to have state-imposed (type 6) bargaining. Germany, Austria, Japan, Denmark, and Sweden typically use pattern bargaining, while many other countries have changes the type frequently. To some extent, the wage-setting indicators are also interconnected: high-level highly coordinated bargaining cannot happen in an uncoordinated bargaining system. Therefore, these indicators are not fully independent, which could bias the estimation, but there is still fairly much room for variation.

An issue is, since we are dealing with longitudinal data, that some time series are shorter than others. Partly to counter the problem, I chose a reasonable time span (from 1993 to 2011), and favour the variables that are available for the chosen period. Nevertheless, there are still some missing values, which are corrected as far as possible using alternative sources for mostly unambiguous variables. Additionally, since there are also some gaps in the time series, the missing data is, when possible, filled with average values of the previous and the next observation, or in case of two continuous missing values calculating a linear interpolation. Nonetheless, there will still be lots of missing values in several variables.

Due to the missing indicators for some countries, regressions will be run on those countries that have the matching values. The problem is more serious, however, if the missing values are not just randomly missing, but form a pattern, which would result in biased estimation (Wooldridge 2013, 488-489). This might be a risk but on the other hand, the unbalancedness seems to apply to different kind of countries, not just certain types. In addition, Howell, Baker, Glyn & Schmitt (2007, 9) address the critique of international labour statistics: even in the past few years, there has been some variation in the standards and applying the ILO definitions. Another problem is variables that are missing altogether: for example, there is data available for minimum wages only in countries that have minimum wage legislation. In many countries, minimum wage levels are part of the collective bargaining and may vary sector-to-sector, which is also the reason why minimum wages are not controlled here. This

study uses share of full time low-wage workers of all full time working population from OECD to indicate the amount of people in low-income jobs. The downside is that there are several countries without proper data available. Eurostat has good cross-country data about low-wage employment but only in 2006 and 2010.

TABLE 3 Countries with lots of missing variables in the dataset

Variable	**Countries with only little or no data**
Employment/population ratio (%)	
Part-time employment of all employed (%)	Japan, Switzerland for young adults
Share of involuntary part-timers of all employed (%)	Poland
Share of temporary employment of dependant employed (%)	New Zealand, Poland, USA
Share of low-wage earners of all full-time employed (%)	Austria, Belgium, Finland, France, Greece , Netherlands, Norway, Poland, Portugal, Slovakia, Spain, Sweden
Strictness of employment protection – temporary contracts (0-5)	
Strictness of employment protection – individual and collective dismissals (0-5)	
Unemployment benefit entitlements: Gross Replacement Rate, GRR (%)	Czech Republic, Hungary, Poland, Slovakia; Data ends 2011
Centralisation of wage-setting (0-1)	
Coordination of wage-setting (1-5)	
Type of bargaining (1-6)	
Level of bargaining (1-5)	
Tax wedge: single persons without children, earning 100 % of the AW (%)	
ALMP spending on active measures of GDP (%)	
Output gap of the total economy (+/- %)	
Immigration inflows (% of population)	
Public childcare expenditure	Data ends in 2009 for all countries

The most important indicator of liberalising policy reform, such as the Hartz reforms, is the 'Strictness of employment protection – temporary contracts' provided by OECD. As a control, I will also use an indicator about the strictness of individual and collective dismissals. Both strictness indicators are built from several quantified qualitative characteristics, which can be more closely examined in OECD website[4]. In Germany, there has been a significant change in the indicator of strictness of temporal contracts during the reform years 2002–2004.

[4] http://www.oecd.org/els/emp/EPL-Methodology.pdf

There are some problematic variables in terms of data coherence: the indicators for unemployment benefit entitlements and tax wedge have been gathered from two different sources because no single source had all the needed data. In the tax wedge case, the data is combined from OECD tax wedge measure on a single person without children at 100% of average income, and OECD Taxing Wages Historical Model A. The values on up-to-date measure only cover years 2000-2013, and are therefore projected backwards into 1985 using obsolete historical measure. Historical model A only covers two types of family, married and single, which does not allow much specification on income level. The pure mathematical extension of up-to-date measure using obsolete definition surely causes some validity risks, because tax reforms might treat different groups differently. This is, however, a risk I am willing to take in order to capture more years for the analysis.

The OECD historic summary measure of gross replacement rate (GRR) offers data about unemployment benefit entitlements from 1961. GRR is a gross measure of unemployment insurance and unemployment assistance benefits. Here GRR express gross unemployment benefit levels as a percentage of previous gross earnings. Social assistance benefits are not generally included in the GRR unless there is a general entitlement (OECD Statistics 2014). The historic data on uneven years ends 2005. The current dataset begins 2001 but is calculated a bit differently, using average worker wage instead of average production worker wage. The change in method causes only little discontinuity but the real problem is that in Italy there are other very significant differences in interpretation of social policy measures causing huge differences in the two figures.

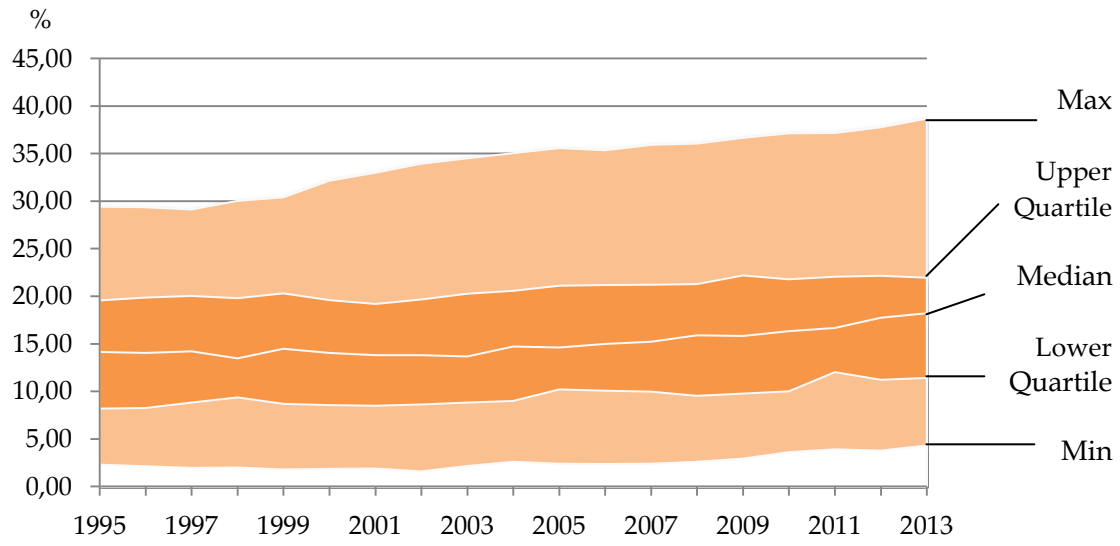
The indicator for the total active labour market policy expenditure is coherently acquired from the OECD database, except for the cases of Italy and Greece. Due to the shortage of the Greek and Italian data in OECD statistics the series is supplemented with Eurostat data on ALMP spending on active measures. The difference is that OECD counts measures 1-7, and Eurostat for many observations only measures 2-7. The difference in the series is filled with an assumption that the difference is stable, close to 0.10% of the Italian GDP (average from Eurostat data). Similar estimate was done for Greece. The data of part-time employment is also supplemented with alternative series, in this case with the data on national definitions instead of the common ones. The difference between these two series is calculated as an average of the three consecutive year values closest to the cap. The difference is added to the national definition to make the data coherent with the values by common definitions. These fixes regard Australia, Norway, Poland and Sweden. Australian involuntary employment of all employed is calculated directly from the data of the share of involuntary part-timers of the labour force. Immigration inflows are the percentage of foreign population migrating into a country as a percentage of host country's population. The data is gathered from OECD.

4 IMPACTS OF LIBERALISATION: EMPIRICAL RESULTS

4.1 Descriptive analysis – Atypical labour markets in the West

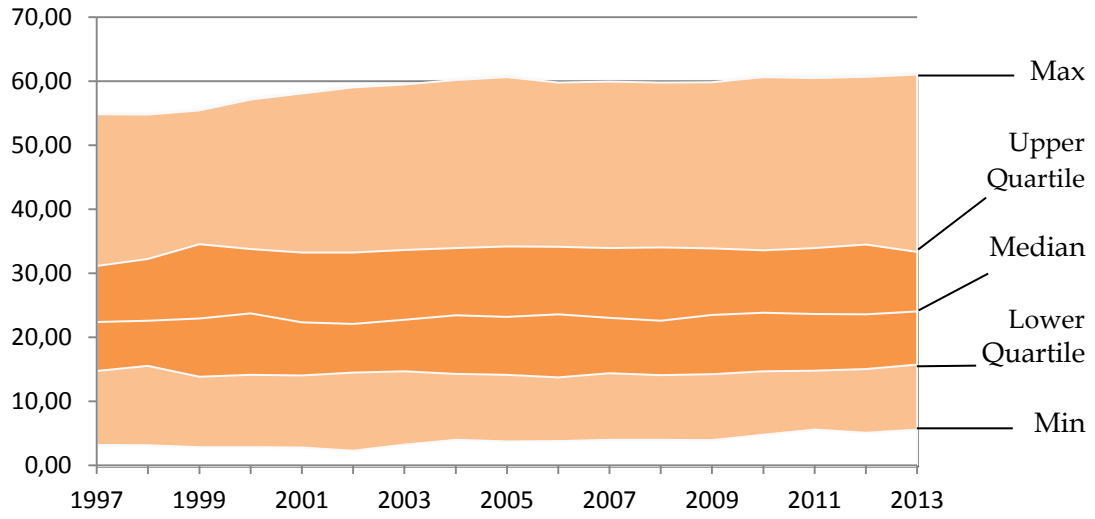
How has the development of the labour markets in been during the past decades? In order to give an overall view, I examine the situation of the countries in the dataset. From here on, the descriptive analysis will be considering all countries in the dataset with enough data on current phenomenon. Due the lack of data in some countries on given times, the figures here use either shorter time span or reduced amount of countries, in order to give coherent information.

FIGURE 5 Development of the share of part-time employment out of total employment in countries with full data 1995 - 2013 (Japan excluded): presented as quartiles of countries (OECD Statistics 2014)



FigureFIGURE 5 presents the development of the share of part-time employment in observed countries, except for Japan due to the lack of data. The figure clearly tells that part-time employment has been becoming constantly more common in the past two decades. The increase has been uniform in both countries with traditionally high and traditionally low shares of part-time employment. The growth of the share of part-time employment has been very stable, but still rather moderate. The greatest share of part-time employed of all employed has for the whole time period been in Netherlands. The lowest ones can be found from Slovakia, Hungary and Czech Republic. Part-time employment has indeed became more common across the OECD, not just in Germany. What the figure here does not tell is whether the increased amount of part-time jobs is a shift from previous full-time employment, unemployment or from outside of the labour force. Whereas part-time employment is more common among women than men, the expansion of part-time jobs has mostly happened among men although there has been some increase in the share of part-time employment among women as well. In 2013 in Netherlands 60.7% of female employees were working part-time.

FIGURE 6 Development of part-time employment among women (Japan and Australia excluded): presented as quartiles of countries (OECD Statistics 2014)



To some extent, similar development has also happened with the share of temporary employment (FigureFIGURE 7) – with the exception of Spain (the highest value). Spain had very high share of temporary contracts of total employment until the beginning recent economic crisis in 2007, which affected especially secondary labour markets. These findings raise the issue about possible composition problems in the dataset. Fortunately business cycle variation can to some extent be captured through the output gap variable. Nevertheless, in most of the other countries, the share of temporary jobs has increased but more slowly than the amount of part-time jobs. The lowest amounts of temporary contracts can be found liberal regime countries (USA,

United Kingdom and Ireland) and in some East-European countries, e.g. Slovakia. These findings are in line with the logic that low regulation puts off pressure to hire people in temporary contracts to avoid the high costs of layoffs when downsizing.

FIGURE 7 Share of temporary employment of total employment in selected countries with data available 1997 – 2012: presented as quartile values of the countries (OECD Statistics 2014)

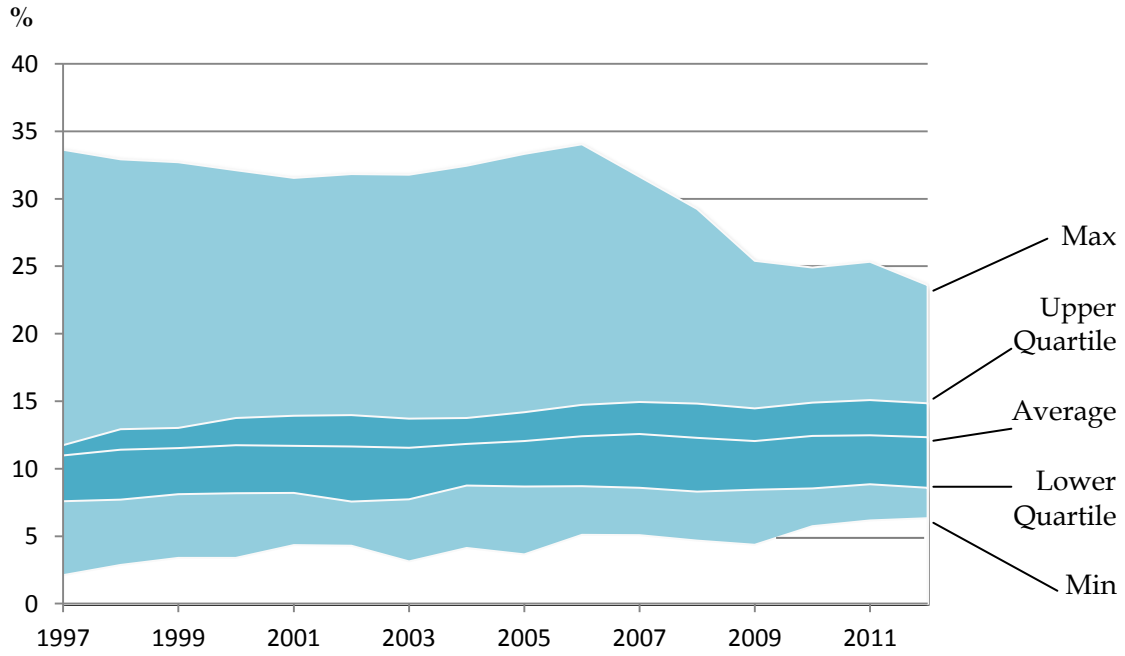
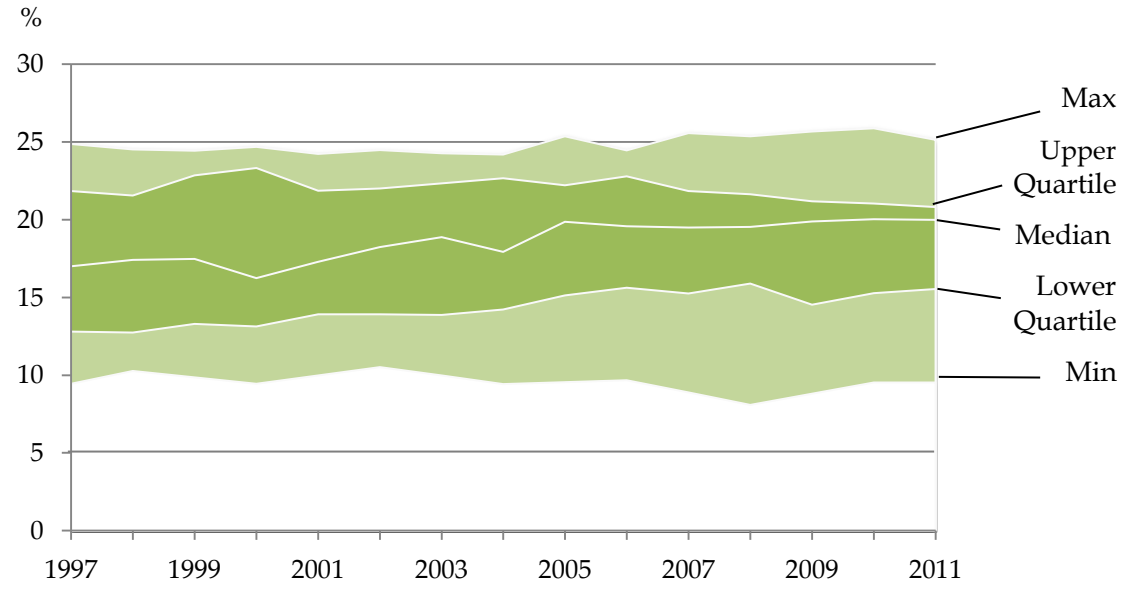


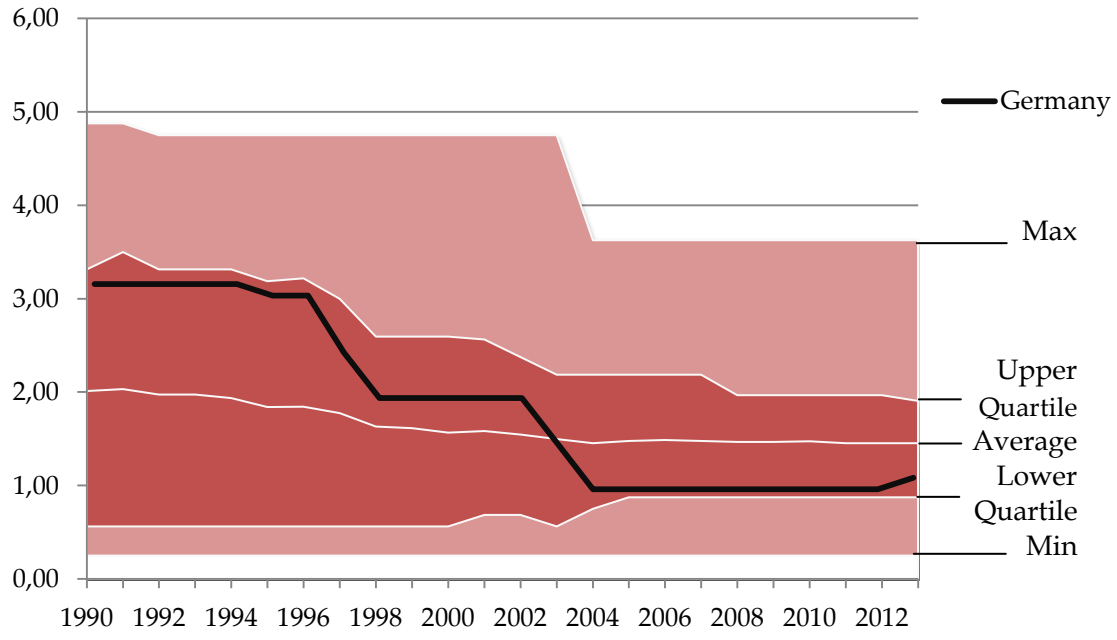
FIGURE 8 Share of low-wage employees of all employed in selected countries with data available 1997-2011: presented as country quartiles (OECD Statistics 2014)



The data about the share of employees working in the low-wage sector provided by OECD is unfortunately inadequate. There is full data between 1997 and 2011 only from 13 countries: Australia, Canada, Czech Republic, Denmark, Germany, Hungary, Ireland, Italy, Japan, South-Korea, United Kingdom and United States. FigureFIGURE 8 presents the development in these selected countries with sufficiently data available. The highest shares can be found in the United States and the lowest in 1997 in Denmark, after that in Italy. The values for both median and lower quartile have increased since 1997 where the upper quartile has shrunk. As the figure shows there is not been very significant trend in the share of low-wage jobs in the selected countries. But again it is worth reminding that these numbers only count the low-wage employees who work full-time. Those working less than full hours are not included, which is potentially problematic. The limitations in the data might therefore result in losing an important aspect of the quality of employment. All in all, what can be concluded here is that atypical jobs have become increasingly more common.

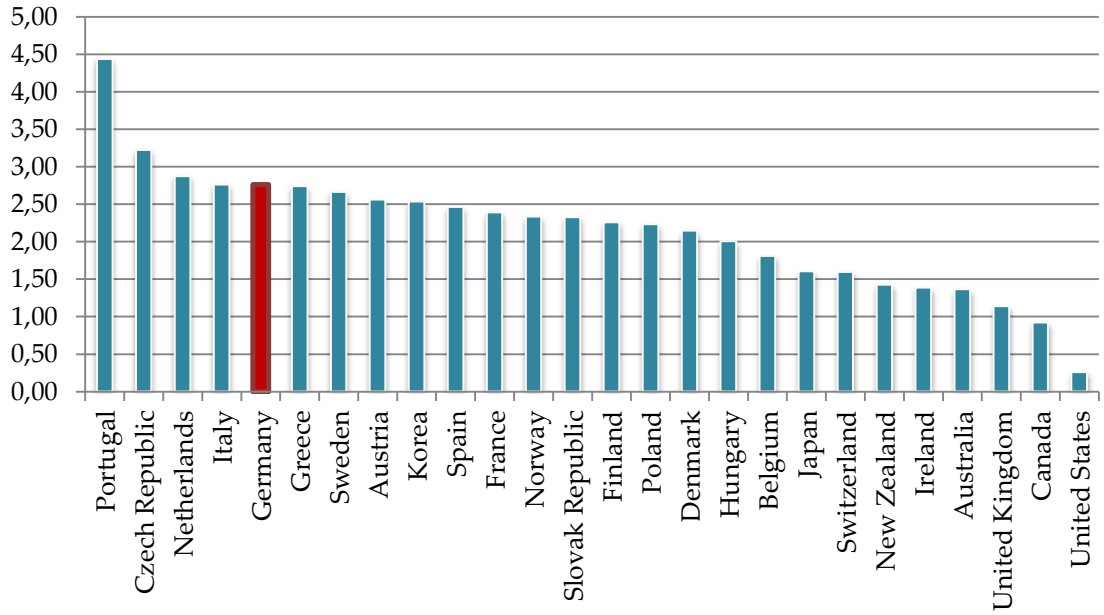
One way to assess the reliability of the low-wage data in use is to compare it to more detailed Eurostat cross-country data (2010). In Germany, where the share of low-wage workers of full-time employees was 18.9% according to OECD (Eurostat: 20.9 for workers with indefinite contracts), the share of low-wage workers among temporary employees was as high as 38%. Hence, there are good reasons to believe that OECD classification does not show the whole picture. Eurostat data, however, lacks the needed amount of observation years to be utilised here.

FIGURE 9 Strictness of employment protection of temporary contracts: quartile values of all countries 1990-2013 (OECD Statistics 2014)



A visible evidence of a common trend in labour markets is the development of the regulation of temporary contracts (FigureFIGURE 9). There has been significant de-regulation in a number of countries in the dataset. The trend in the strictness of temporary contracts seems also to be to some extent converging. The countries with most strictness have liberalised their legislation during the 90s and early 2000s. Some countries with low strictness, on the other hand, have increased their regulation moderately. All countries which have introduced more regulation are the one with very low starting values: ex East Bloc and market liberal countries. The liberalisation process of temporary contracts has been, nonetheless, especially strong in Germany during the observed period. In the early 90s, the German temporary contracts were still highly regulated but finally after the Hartz reforms the level of regulation in Germany has been rather low. It is worth noting, however, that there was also a legal reform in Germany 2001, easing the regulation of part-time and temporary contracts (Schank, Schnabel & Gerner 2009, 391). It might thus be that not all the drop in the strictness of temporary contracts between 2002 and 2004 has been precisely due to the Hartz reforms. On the other hand, it does not matter in the big picture, since both are examples of similar reforming; Hartz was just bigger and better known. Highest values in temporary contract regulation are prior to 2004 in Italy and Greece, afterwards in France. The minimum represents United States and Canada for the whole time period, and United Kingdom and Republic of Ireland in the early years.

FIGURE 10 Average values for strictness of employment protection – individual and collective dismissals on regular contracts between 1994-2012 (OECD Statistics 2014)



There are only a couple of countries in the dataset, namely Spain and Portugal, that have any greater (> 1 unit) variation over time in the strictness indicator for individual and collective dismissals. Therefore, the cross-country variation is here more important. This also shows that labour market reforming

has mostly been partial, targeted at the margin, not the core. It is not surprising that the lowest values in the indicator (FigureFIGURE 10) belong to countries that are 'liberal' in Esping-Andersen's classification (1990): USA, Canada, UK, Australia, Ireland and New Zealand. The highest values in the early years are Italy, Greece and Belgium, later France. Many Continent-European countries have high ranks, Germany included. In Germany, there is also very little change in dismissal strictness between 1985 and 2012. The Nordic countries have medium values in the strictness which also fits to Esping-Andersen's taxonomy.

Using the changes in the strictness of temporary contracts as an indicator of liberalising labour market reforms, Table 3 presents the countries and periods witnessed a major liberalising reform. All the countries in the data, that have a fall of at least one unit in maximum three years, are listed on the table. There are actually quite a few reforms happened during the observed period, which is a good sign for the validity of the analysis. It is especially good that most of them happened relatively close to the Hartz reforms, which makes it easier to use first-difference method and get relevant results. There are also several smaller decreases in the data, not listed here. In Germany, there has also been a significant drop in gross replacement rate 2004-2007, which fits well into the idea of operationalising the reforms with these two variables. The list, based on the data values, of course is meant to represent actual policy reforms. Table 4 demonstrates how the qualitative changes in policies reflect to the quantified values in the data. In total, there are 35 liberalising reforms and 16 regulative reforms of any volume in the dataset regarding temporary contracts.

TABLE 4 Liberalising labour market reforms according to the indicator 'Strictness of employment protection - temporary contracts': value decrease at least one unit (OECD Statistics 2014)

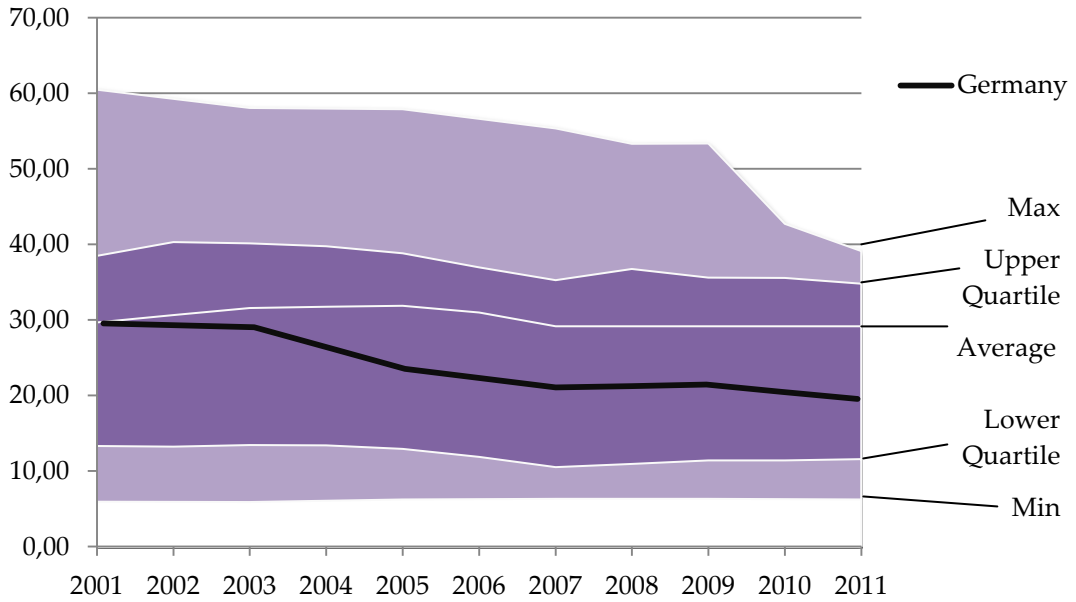
Belgium	1997-1998
Denmark	1994-1995
Germany	1996-1998, 2002-2004 (Hartz reforms)
Greece	2003-2004
Italy	1997-1998, 2001-2003
Sweden	1993-1994

The reform in Belgium 1997-1998 was a reduction in the restrictions on temporary work agencies, and fixed-term contracts were made renewable. The Danish reform was the introduction of flexicurity-model. The German reform in 1996-1998 covers more liberty for temporary work agencies in terms of job duration and frequency, and an increase in fixed-term contracts. Italian reforms also liberalized fixed-term contracts, allowed temporary agency work and later removed some restrictions, and finally further liberalised fixed-term contracts. The Greek reform in 2003 liberalised both fixed-term contracts and temporary agency work. There were some counter measures in 2004 but OECD measurement still counts the total effect significantly liberalising. In Sweden

time work agencies were permitted and employers were given more rights in collective dismissals. (Kahn 2007, 34; fRDB-IZA Social Reforms Database).

In the case of Belgium there are some peaks in the data about part-time and temporary employment right after 1998, which imply to the reform effect. These peaks are to some extent adjusted after a couple of years but the levels still remain higher than before the reform. In the development of employment or unemployment it is difficult to see any trend change. On the other hand in Denmark the only visible trend change is the start of decrease in temporary employment share in 1995. In Greece the share of part-timers started to increase after 2004 and the share of low-wage workers decreased. There is, however, a risk that these are composition biases due to the economic crisis. Especially the share of low-wage workers might have dropped simply because people have lost their jobs. In Italy there has actually been an increase in employment and decrease in unemployment after the reforms but also significant increase in the share of part-timers, especially in involuntary ones. In Swedish case it is hard to see any significant patterns without a proper analysis.

FIGURE 11 Unemployment benefits (GRR) in Germany and other OECD countries with full data (USA and Italy missing): country quartiles 2001-2011 (OECD Statistics 2014)

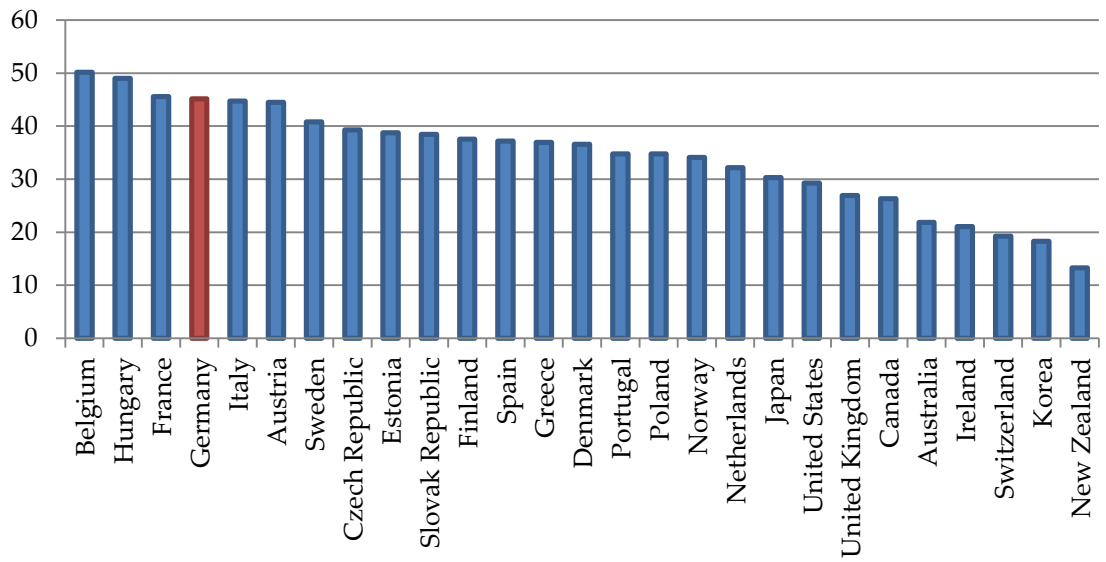


The trend in the labour market protection and regulation seems to be that countries with the most strictness have been liberalising their systems after the 1990s. The liberalisation development can be seen in both the strictness of employment protection for temporary contracts (FigureFIGURE 9) and gross replacement rate describing the level of unemployment benefits (FigureFIGURE 11). Unlike employment protection, with unemployment benefits Germany has traditionally been a middle-roader, but after Hartz programmes come closer to the lower quartile. The country with highest gross replacement rate is Denmark and the lowest ones are developing regime countries Czech Republic, Slovakia, Hungary, and Poland. Danish GRR rose sharply after the reforms made 1993-

1995, but decreased rapidly between 2009 and 2011. Flexicurity model reduced labour market regulation and increased the pressure of the unemployed to accept job offers but also simultaneously raised the unemployment benefits for a set time period to compensate the shortcoming to the unemployed. Denmark introduced again cuts for unemployment benefits 2008 and 2010 (LABREF 2014), eventually bringing it close to the European average in 2011. Nevertheless, there does not seem to be any common trend in unemployment benefits as in EPL. FigureFIGURE 11 covers only years after 2001, which include East-European countries as well, even though other countries have data from much earlier on.

Tax wedges, presented in FigureFIGURE 12 for the year 2013, do not show any trend development in chosen countries either. There are some increases and decreases in various countries but the big picture has remained relatively stable. Liberal and East-Asian countries, and Switzerland, have lowest tax wedges whereas the highest ones can be found mostly in conservative countries. Nordic countries represent here a middle road.

FIGURE 12 Tax wedges on low-income singles without children in 2013, all countries in the dataset (OECD Statistics 2014)

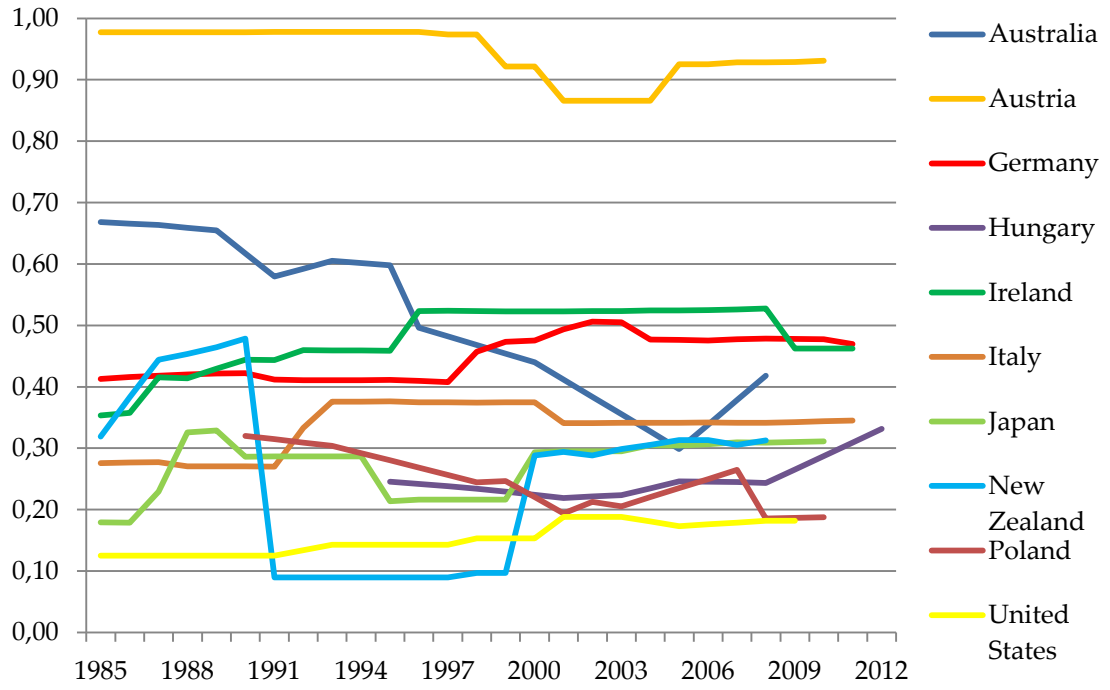


The structures of wage-setting institutions have also remained fairly intact in most of the countries in the dataset. Australia and New Zealand had a process of significant de-regulation between late 80s and early 90s which considered the whole structure of wage-setting including centralisation, level of coordination and level of bargaining. Several countries, on the other hand, have changed their type of wage-setting coordination between 1985 and 2013 but there is not any specific type of coordination which would have become popular. Some countries have maintained their centralised and highly coordinated wage bargaining models while others have liberalised their wage-setting dynamics. Due to their political and corporatist nature, the non-continuous wage-setting variables (level, type and coordination) often do not

develop slowly into one direction but instead change rapidly back and forth, as mentioned in the previous chapter.

Centralisation of wage bargaining differs from the other wage-setting indicators here due to its continuous interpretation. As a summary variable, it mostly develops gradually. As a bigger picture, there is not any kind of trend observable for bargaining centralisation in the dataset, but some countries have centralised moderately while some others have de-centralised. Still, many countries have had a very stable level of centralisation over the observed time period. FigureFIGURE 13 summarises the biggest changes between 1985 and 2012. As mentioned before, biggest reformers here have been Australia and New Zealand. New Zealand is also the only country to witness a significant non-continuous temporary shock in wage-setting centralisation between 1991 and 2000. Austria is solely the most centralised bargaining system while many liberal regime countries are among the least centralised, especially the UK and USA. Germany is an average case regarding centralisation with a slight increase after 1998.

FIGURE 13 Centralisation of wage bargaining index in selected countries with significant changes between 1985 and 2012



Government spending on active labour market policies has also been very volatile in countries in question. Sweden used to be the highest contributor but has decreased the spending a lot since early 90s whereas Denmark has taken the role of leading ALMP-spending country. There is not any kind of trend going on in ALMP spending: some countries have increased their spending and some have been decreasing.

In FigureFIGURE 14 both full-time and part-time employment rates are represented as averages for each welfare regime. The numbers are calculated using the countries of the dataset except for Japan due to the lack of data. The figure shows clearly that part-time employment has been becoming more common especially in Conservative regime (Central Europe), Mediterranean regime (South-Europe), and Liberal regime (Anglo-American countries). Full-time employment levels have, on the other hand, fallen the most in Mediterranean regime during the economic crisis after 2008. Nordic regime fares best employment-wise having highest full-time employment rate and a stable level of part-time employment. Conservative regime, where also Germany belongs to, does rather modest in full-time employment but has had the highest level of part-time employment since 2006. A natural conclusion from Figure FIGURE 14 is that low quality of employment is a problem especially for conservative welfare regime with low levels of full-time employment but lots of part-timers. The Nordics have exactly opposite situation while developing regime countries might need even more part-time employment to replace unemployment. Especially the differences between the regimes in the employment development after the financial crisis in 2008 suggest that welfare regime qualities might indeed be an explanatory factor for the quality of employment: the greatest increases in part-time employment have happened in conservative and Mediterranean regimes, which also have lowest levels of full-time employment. In this study there are estimation models that control the regime effects so that it would not bias the assessment of liberalisation effects on employment quality.

FIGURE 14 Full-time versus part-time employment averages of different welfare regimes (only countries except for Japan in the dataset considered)

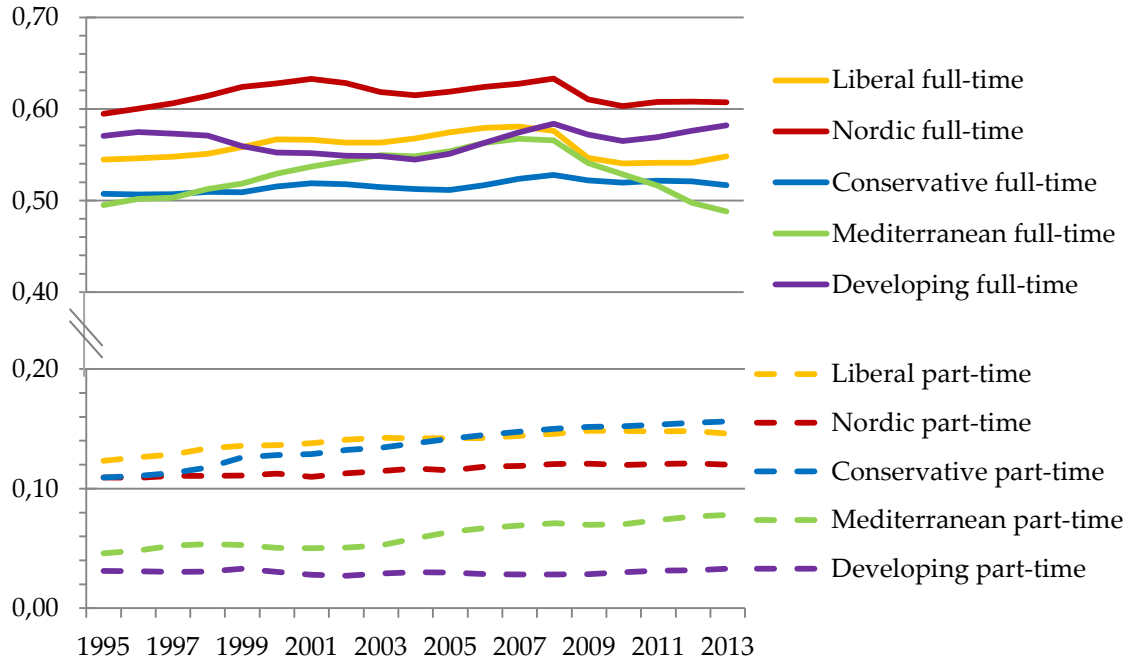


Figure FIGURE 15 presents all countries in the dataset in 2013 and displays a simple correlation between strictness of temporary contracts (Employment protection laws) and total employment on working-age population. The correlation is negative, i.e. more protection would on average mean less employment. This is, however, just a crude simplification without any background factors. In any case, the plot shows the national variances in both variables: some countries are able to achieve higher employment with more employment protection. Norway and France are examples of such outliers. It appears that without Norway (a rich oil country) and France, the correlation would be clearly negative. On the other hand, we must recognise that there are other anomalies too: Greece and Spain are in a middle of a crisis and Switzerland has its own historical assets. Without these countries, the correlation would be much weaker.

FIGURE 15 The connection between total employment rate and employment protection: a scatter plot of all countries in the dataset 2013

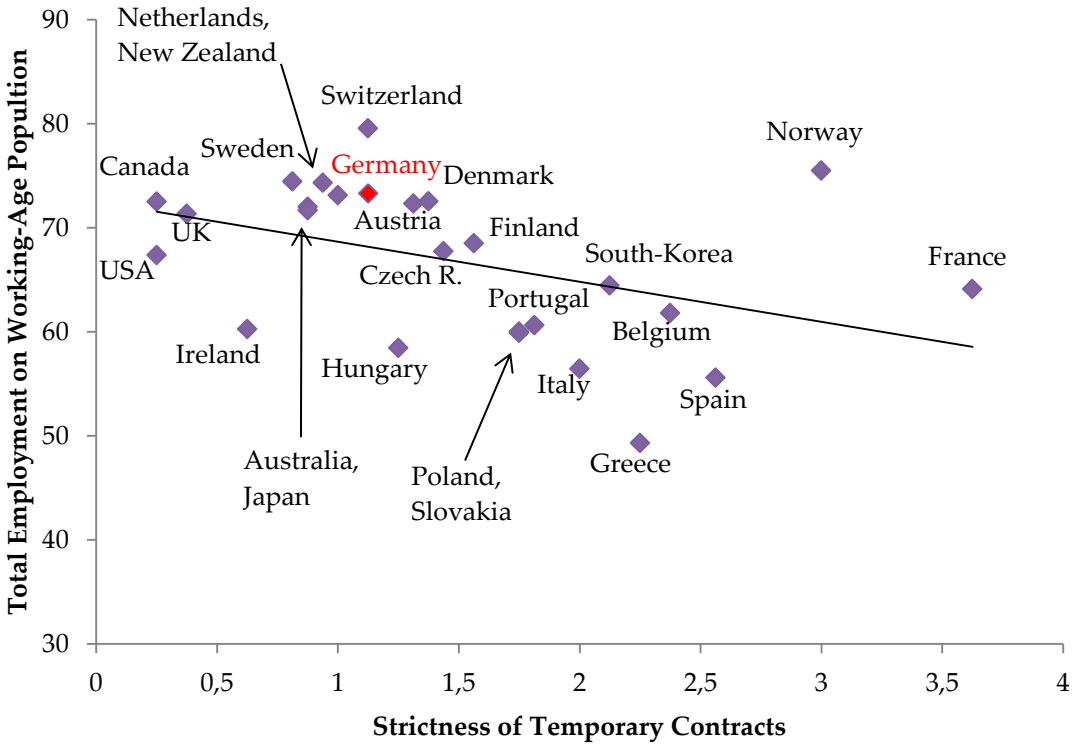
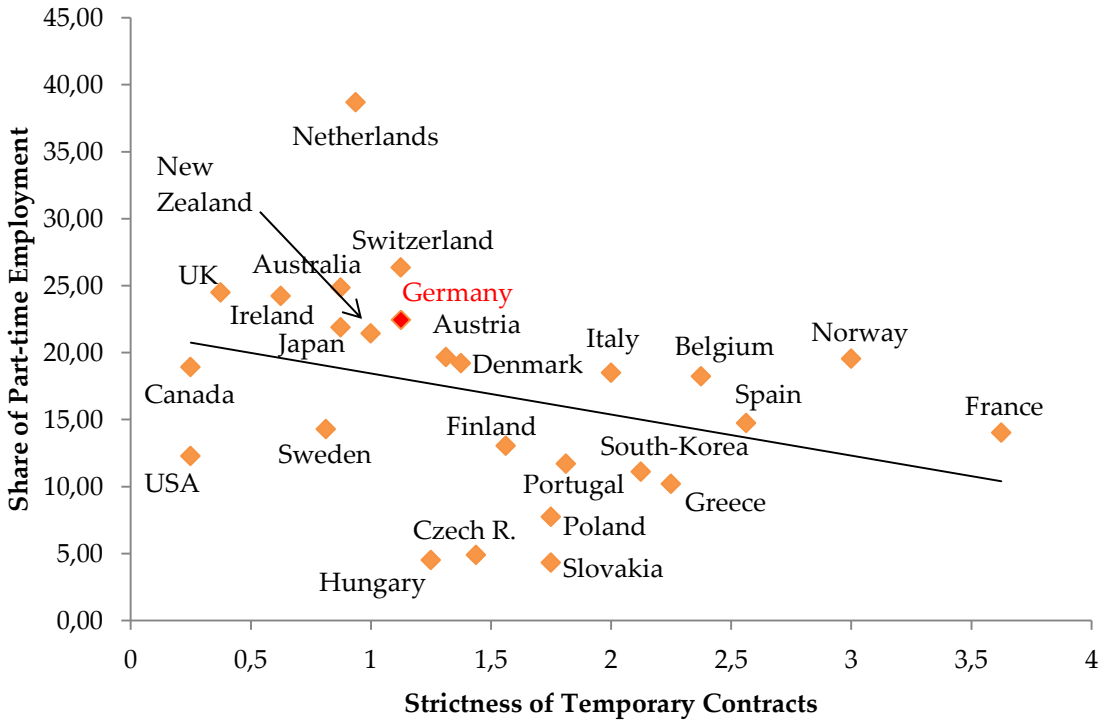


Figure FIGURE 16 presents similar scatter plot as before but this time with the share of part-time employees of all employees. Again, strict employment protection seems to have negative correlation with the size of part-time sector. Theory suggests that relatively high protection on permanent contracts while having only low protection on non-regular contracts might lead to a big secondary labour market with lots of people working part-time. This might explain the huge part-time sector in Netherlands but, on the other hand, there is a big gap between strictness of temporary contracts and strictness of dismissals in Czech Republic too, and the Czech part-time sector is minimal. Nevertheless,

the figure draws a picture that strictness of temporary contracts would be positively associated with the average quality of employment.

The descriptive analysis here tells that atypical employment is indeed becoming slowly more and more common. Meanwhile the employment rates were slowly and uniformly increasing until the economic depression in 2008, which started a process of divergence between countries. The developments of the incidence of atypical employment and labour market flexibility suggest that there might be a positive connection. That is still too early to state since we do not know anything yet on country-level, just averages, nor have we yet discussed any other factors. It is still a reality that these two phenomena have happened almost hand-in-hand. Whether this is just a coincidence or actually a causal development is a matter of further investigation with panel data methods. Second issue to investigate is, whether there has been enough increase in employment or decrease in unemployment to compensate these changes in the labour markets, and how this dynamic functions between genders and age-groups.

FIGURE 16 The connection between the share of part-time employment in total employment and employment protection: a scatter plot of all countries in the dataset 2013



4.2 Effects of labour market institutions on the quality of employment

4.2.1 Introduction to institutional panel regression

All the countries in the analysis are divided into five regime-groups based on Esping-Andersen's classification (1990). The regimes are modelled as binary (dummy) variables in the pooled OLS method. Fixed Effects method is unable to benefit from regime taxonomy because the variables maintains static over time.

A major question in panel data analysis is, are we considering the variation across countries within single year, across years within country, or all observations. For either dimension, there are several ways to perform the 'fixed effects' estimation: either using country or year dummies, absorbing countries or years, or using actual Fixed Effects estimator presented in chapter 3.2. All of these methods can be assumed to have different standard errors. An alternative where neither of the dimensions is demeaned is the basic pooled OLS, which is also most prone to various biases. It is also possible to include both dimensions of Fixed Effects estimation deleting all biases that stay constant over time or over all countries within a time observation. Such estimation would only consider observations that vary both over time and over place.

Since the goal of this study is to examine reform effects, changes over time within a country are most relevant. Nevertheless, the results are also compared to the results of other estimation methods. The comparison will test the underlying assumption that there is no cultural time trend that would explain the changes in employment dynamics, not political or institutional reforms. Areg-models (time-absorbed pooled OLS) here are able to capture time trends but not country-specific biases. The major analyses are divided between genders and also provided separate for young adults in the age of entering working life (24-29-year-olds). All analyses here use robust standard errors, and the standard errors in Fixed Effects model are adjusted for the country clusters.

4.2.2 Interactions between institutional variables

Institutional theory of labour market and previous empirical studies suggest there might be important interactions between institutional factors, as well as some nonlinear connections of institutional variables. In other words, the effects of one factor might depend on institutional environment. Therefore, the statistical significance of various interactions is tested and the results can be read in Table 5.

As presented in the table, several interaction terms are indeed statistically significantly connected to the dependent employment quality variables in both pooled OLS and Fixed Effects models. The interaction between unemployment benefits (GRR) and wage-setting coordination, nonlinearity term of wage-setting centralisation, and ALMP spending in liberal countries are the only ones

not significant in Fixed Effects estimation. All the rest are significant on both methods for at least one dependent variable. ALMP spending seems to be closely connected to policy regimes: ALMP spending in some regimes appears to be more effective than in some regimes than others; although the coefficients should not be over-interpreted since the country groups are relatively small and sensitive to single outliers. Otherwise the interaction effects of the two methods are in line with each other except for one interaction: ALMP spending effect on temporary employment in Nordic countries. Pooled OLS suggest the effect is negative while Fixed Effects method estimates a positive effect. In any case, the main role of the interaction terms is to serve as control variables, improving the soundness of the analysis.

TABLE 5 Interactions between institutional variables in Pooled OLS and Fixed Effects models

	Full-time Employment	Part-time employment	Involuntary part-timers	Temporary employment	Low-wage employment
			Pooled OLS with regimes 1993-2011		
GRR * Tax wedge		-0.01 ***			
GRR * Coordination	0.05 *	0.08 ***	-0.03 ***	-0.17 ***	0.08 **
Tax wedge * Coordination			0.05 ***	0.25 ***	-0.13 ***
ALMP * Tax wedge		-0.35 ***			
ALMP * Nordic	9.19 ***	-4.83 ***	3.12 ***	-6.55 **	
ALMP * Liberal		-10.29 ***	4.00 ***	12.39 ***	-8.78 **
ALMP * South-Europe	13.47 ***		5.44 ***		
ALMP * Developing			4.92 ***	20.54 **	
Centralisation²	9.04 *	-7.97 *	-14.59 ***	-18.66 ***	
Coordination²	-0.76 *			1.35 ***	
Level of Bargaining²				1.03 ***	0.64 ***
			Fixed Effects 1993-2011		
GRR * Tax wedge		-0.01 *	-0.003 *		-0.01 **
GRR * Coordination					
Tax wedge * Coordination			0.04 *	0.14 **	
ALMP * Tax wedge			-0.09 *		
ALMP * Nordic			2.64 **	4.33 *	
ALMP * Liberal					
ALMP * South-Europe	13.42 ***		4.91 **		
ALMP * Developing	11.38 *			23.92 *	
Centralisation²					
Coordination²			-0.14 *	0.90 *	
Level of Bargaining²	-0.31 *	0.34 **			

The test about institutional controllers gives some support for the hump-shape theory of wage-setting dynamics: as the theory suggests, effects of wage-setting parameters indeed appear to be significantly non-linear. Adding exponentials in variables allows regression function to perform a hump-shaped connection between the variables. It is noteworthy though that in Pooled OLS method centralisation of wage-setting dominates while in Fixed Effects method level of bargaining seems to be more important explanatory factor. Those two variables also seem to have exactly opposite effect to the quality of employment.

4.2.3 Full-time versus part-time employment: gendered effects

There are few points that immediately arise when looking the results tables. First, the gender division matters and many effects are adverse between the genders. Secondly, labour market liberalisation has different effects on the amount full-time and part-time jobs: there is some substitution. Thirdly, the most important Hartz reforms proxy 'Strictness of temporary contracts' has relatively robust and statistically significant effects across the specifications, while other effects vary.

Baseline Pooled OLS cross-country estimation (Tables 6 and 7) would suggest that strictness of temporary contracts significantly decrease both full-time and part-time employment. Strictness of dismissals, on the other hand, seems to increase full-time employment and decrease part-time employment, while unemployment benefits had no effect. The results do, however, look somewhat different when gender division, time-absorbing, and country Fixed Effects are taken into account. Fixed Effects estimation suggests that the effect of the EPL of temporary contracts, the main component of Hartz reforms, has negative effect on women's full-time employment but actually a positive full-time employment effect for men. The result here implies that liberalisation would raise female employment at the expense of male employment. FE is the most important estimation method for this study because it tells the average reform effect within a single country. In part-time employment case, temporary contracts liberalisation has increased the amount of part-time jobs for both genders but the effect has been more than double as great for women as for men. Cross-country time-absorbed (Areg) models suggest high unemployment benefits decrease part-time employment for men, whereas Fixed Effects models suggest the effect is positive for women.

The results imply that labour market liberalisation reforms in OECD countries between the years 1993 and 2011 have substituted part-time employment for full-time employment for male employees, i.e. increased part-time employment at the cost of full-time employment. The reforms are also connected to increased female employment regarding both full-employment and part-time employment, the increase in part-time employment having been the greater one. The effects of temporary contracts deregulation seem to have much bigger labour market outcomes for women than men: the increase in female part-time employment due to liberalisation is estimated to be about twice as high as the increase in male part-time employment. These results are

robust across Fixed Effects methods, e.g. also country-absorbing OLS (country-Areg), which is not presented here due to close similarity to the FE models. They are also mostly supported by time-absorbing model 2, with the exception that men would neither lose nor gain in full-time employment. Model 3 shows less significant results, which could be due to the fact that regime taxonomy decreases the amount of variation in the analysis.

TABLE 6 Estimation results on full-time employment rate (relative to 15-64 years old population) 1993-2011

	(1) Pooled OLS	(2) Areg model A		(3) Areg model B		(4) FE model A		(5) FE model B	
		Women	Men	Women	Men	Women	Men	Women	Men
Strictness temporary contracts	**-1.25 *** **	**-1.17 ***	-0.35	-0.41	0.11	**-0.85 ***	0.54	-0.77	**0.59 ***
	(0.35)	(0.54)	(0.27)	(0.44)	(0.22)	(0.41)	(0.30)	(0.42)	(0.28)
Strictness dismissals	**1.72 *** **	**2.15 ** **	**1.01 ***	**3.00 *** **	**1.83 *** **	-1.13	-0.35	0.44	-0.22
	(0.47)	(0.74)	(0.36)	(0.82)	(0.35)	(1.54)	(1.12)	(1.35)	1.01
Unemployment benefits (GRR)	-0.15	0.11	**-0.39 *** **	-0.04	**-0.23 ***	-0.07	-0.10	0.04	-0.07
	(0.14)	(0.25)	(0.12)	(0.18)	(0.10)	(0.30)	(0.19)	(0.24)	(0.16)
Main controllers	N	N	N	N	N	N	N	N	N
Public childcare expenditure	-	N	N	-	-	-	-	-	-
Wage-setting exponentials	N	N	N	N	N	N	N	N	N
Interactions	N	N	N	N	N	N	N	N	N
Type of bargaining	N	N	N	N	N	-	-	-	-
Regime dummies	-	-	-	N	N	-	-	-	-
ALMP * Regimes	-	-	-	N	N	-	-	N	N
Constant	74.69 ***	65.30 ***	88.11 ***	55.37 ***	82.20 ***	59.54 ***	67.04 ***	52.96 ***	61.31 ***
	(3.68)	(6.36)	(2.85)	(6.70)	(3.96)	(14.85)	(10.66)	(11.04)	(8.24)
N	367	339	339	367	367	367	367	367	367
Adj. R^2 / R^2 Within	0.42	0.46	0.67	0.71	0.79	0.56	0.57	0.64	0.61
F	23.69 ***	23.53***	64.31 ***	65.04 ***	86.00 ***	24.33 ***	74.49 ***	2820 ***	191.9 ***

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, Areg = Pooled OLS with years absorbed, FE = Fixed Effects, N = included

The results of the dismissal protection and unemployment benefits are ambiguous and not robust across the methods. Dismissal protection is not significant in FE models, which might be due to the relatively little reforming done in this policy field. It does not make much sense to try analysing dismissal protection effects in detail without major variation in the data. In any case, dismissal protection is not the main area of interest here as it was not part of the Hartz reforms. Unemployment benefits were, on the other hand, and they only appear to have significant negative effect on male employment, both part- and full-time, but again not in FE models. The reform effects (FE models) are

statistically insignificant hence omitted variable bias is possible. As a conclusion the results do not give strong evidence that unemployment benefits would a decisive factor for employment. Only relatively strong implication here is that the effects are on average different for women and men.

The estimation results for wage-setting centralisation provide support for hump-shaped curve theory (see: Appendix): mid-level centralisation tends to yield worst employment outcomes. Curiously, centralisation seems to mostly affect male full-time employment but female part-timers, although the connection is not significant in Fixed Effects models. Nevertheless, in cross-country estimates the coefficients are very large, explaining more than dozen per cents of employment. On the other hand, lowering the level of bargaining appears to substitute male full-time employment for part-time employment of both genders. Here coordination of wage-setting appears to have mostly negative effects for full employment but the effects lose their significance in Fixed Effects. The correlation with centralisation is high (0.59), which potentially steals the explanatory power. Wage-setting institution effects are also significantly gendered here, often affecting male full-time employment but female part-time employment. It is important to note, however, that the asymmetry between genders can partly be explained with the fact in many countries part-time sector is dominated by women while men mostly work full-time. Nevertheless, this fact does not alone explain the adverse effects between genders observed by Areg models. These results support the idea that wage-setting dynamics actually matter much more employment-wise than reforming employment protection legislation, like the Hartz reforms did.

Other controlling variables also offer significant connections but with less clear implications. The effects of tax wedge on both full-time and part-time employment are either negative or insignificant. The effects of immigration are significant but ambiguous: the effect is positive for full-time employment rate but unclear whether women or men are affected. The effects for part-time employment might be either positive or negative; the direction of effect varies from specification to another. Output gap is very important in explaining full-time employment but not part-time employment. Public spending on childcare institutions has a significant effect substituting female full-time employment for female part-time employment. The result suggests it is a very effective policy increasing female full-time employment two times more than it reduces part-time employment. Institutional results based on Areg without regime dummies are, however, prone to country-based omitted variable bias, hence the results should be interpreted with caution.

Due to the gaps in data, the variable of childcare benefits is only included in Areg model A to avoid losing explaining power in Fixed Effects estimation. Differencies between Areg models are still mostly caused by policy regime dummies, not childcare expenditure. The test runs using childcare spending in Fixed Effects models report similar coefficients, than without childcare variable, but lower significance levels all around, possibly due to the lower amount of observations. Fixed Effects model with childcare spending estimates a more

conservative connection between childcare spending and female employment than Areg model A: roughly two per cent increase in full-time employment without effect for part-time.

TABLE 7 Estimation results on part-time employment rate (relative to 15-64 years old population) 1993-2011

	(1) Pooled OLS	(2) Areg model A		(3) Areg model B		(4) FE model A		(5) FE model B	
		Women	Men	Women	Men	Women	Men	Women	Men
Strictness temporary contracts	**-1.08 ***	**-1.43 ***	**-0.77 ***	0.23	**-0.55 ***	**-1.45 ***	**-0.60 **	**-1.39 ***	**-0.60 **
	(0.33)	(0.60)	(0.14)	(0.43)	(0.12)	(0.61)	(0.18)	(0.59)	(0.20)
Strictness dismissals	**-0.82 ***	**-1.67 **	**-0.36 ***	**2.37 ***	**0.49 ***	-3.31	-1.14	-3.51	-0.83
	(0.38)	(0.63)	(0.16)	(0.57)	(0.15)	(2.09)	(0.76)	(2.24)	(0.70)
Unemployment benefits (GRR)	0.00	0.22	**-0.14 ***	0.11	**-0.19 ***	0.34	0.03	0.26	0.06
	(0.14)	(0.24)	(0.06)	(0.14)	(0.05)	(0.19)	(0.09)	(0.17)	(0.10)
Main controllers	N	N	N	N	N	N	N	N	N
Public childcare expenditure	-	N	N	-	-	-	-	-	-
Wage-setting exponentials	N	N	N	N	N	N	N	N	N
Interactions	N	N	N	N	N	N	N	N	N
Type of bargaining	N	N	N	N	N	-	-	-	-
Regime dummies	-	-	-	N	N	-	-	-	-
ALMP * Regimes	-	-	-	N	N	-	-	N	N
Constant	16.17 ***	21.35 **	16.74 ***	8.87	10.35 ***	32.94 *	18.24 ***	30.98 **	18.64 ***
	(3.79)	(6.76)	(1.71)	(5.97)	(1.63)	(10.80)	(4.55)	(10.50)	(4.72)
N	367	339	339	367	367	367	367	367	367
Adj. R^2 / R^2 Within	0.59	0.55	0.70	0.81	0.84	0.43	0.53	0.46	0.55
F	76.55 ***	63.29 ***	61.72 ***	101.1 ***	85.25 ***	11.60 ***	39.87 ***	109.9 ***	178.21 ***

* p < 0.05, ** p < 0.01, *** p < 0.001, Areg = Pooled OLS with years absorbed, FE = Fixed Effects

The coefficients of determination (R^2s) are rather high in all specifications. Especially regime dummying naturally causes high R^2s but the R^2 Within values are also high in Fixed Effects model, which implies good reliability. High coefficient of determination signals that the institutional variables used in the analysis are both important and relevant in explaining the quality of employment. A major point of doubt in the analysis is the possible explanatory time trend: adding time trend into Fixed Effects model would lose most of the significance levels. This might either be due to the time being the confounding variable, which explains the changes, or for multicollinearity reasons. The latter suspect is caused by the fact that policy changes are time-correlated too. The results that remain robust across different specifications, including both Fixed Effects and time-absorbing Areg models, most likely are not biased by possible

unobserved variables related to time. Such robust results regarding the main variable, strictness of temporary contracts, are female full-time employment effects, and part-time employment effects for both genders.

4.2.4 Low-wage incidence, involuntary part-timers, and temporary employment: quality does matter

The information on the liberalisation effects on full-time versus part-time employment rates are a significant part of the quality of employment but not the whole story. It does not tell, whether we are talking about good or bad part-time jobs. One way to assess this question on macro level is to look at the effects for low-pay incidence (Table 8), the share of involuntary part-time employment (Table 9), and the share of temporary employment (Table 10). These analyses are done for the shares of total employment, not ratios of population as in previous chapter. Here a negative coefficient should be read as more good jobs, and less bad jobs.

TABLE 8 Estimation results on the share of low-wage employment relative to total employment 1993-2011

	(1) Pooled OLS	(2) Areg model A		(3) Areg model B		(4) FE model A		(5) FE model B	
		Women	Men	Women	Men	Women	Men	Women	Men
Strictness temporary contracts	-0.70	**-2.63 *** **	-0.03	-0.70	-0.71	-0.40	-0.24	-0.27	-0.23
	(0.37)	(0.52)	(0.40)	0.61	(0.56)	(0.59)	(0.49)	(0.75)	(0.65)
Strictness dismissals	**-0.95 ***	**1.67 ** **	**-2.04 *** **	**1.52 ***	**-1.60 ***	0.56	-0.78	-0.28	-0.87
	(0.42)	(0.56)	(0.44)	(0.72)	(0.63)	(3.15)	(1.19)	(2.77)	(1.22)
Unemployment benefits (GRR)	-0.11	-0.23	0.02	-0.22	-0.04	0.23	0.12	0.32	0.21
	(0.12)	(0.18)	(0.11)	(0.15)	(0.12)	(0.35)	(0.13)	(0.31)	(0.17)
Main controllers	N	N	N	N	N	N	N	N	N
Public childcare expenditure	-	N	N	-	-	-	-	-	-
Wage-setting exponentials	N	N	N	N	N	N	N	N	N
Interactions	N	N	N	N	N	N	N	N	N
Type of bargaining	N	N	N	N	N	-	-	-	-
Regime dummies	-	-	-	N	N	-	-	-	-
ALMP * Regimes	-	-	-	N	N	-	-	N	N
Constant	14.53 ***	34.88 ***	5.78	22.55 ***	-7.82	5.76	5.13	8.04	10.48
	(3.88)	(4.75)	(4.17)	(5.71)	(4.30)	(12.86)	(10.78)	(12.47)	(8.76)
N	234	217	217	234	234	234	234	234	234
Adj. R^2 / R^2 Within	0.78	0.78	0.77	0.84	0.85	0.29	0.39	0.34	0.45
F	57.43 ***	46.28 ***	51.33 ***	56.86 ***	61.40 ***	136.4 ***	79.67 ***	4366 ***	6394 ***

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, Areg = Pooled OLS with years absorbed, FE = Fixed Effects, N = included

Regarding low-wage incidence, there is only one statistically significant result for the main Hartz-variable, the strictness of temporary contracts. Higher strictness does have a significant negative effect female low-wage pay incidence on Areg A model without regime controllers or Fixed Effects. If we add these controlling mechanisms, the effect disappears. There are two possible reasons for that: either the effects were not real in the first place but instead caused by a confounding variable, or then there is simply not enough variation in the data without cross-country aspect. There is much less data on low-wage incidence than on employment levels, which might cause the lack of variance in Fixed Effects estimation. The data is missing altogether from France, Norway and Sweden, and there is only a handful of observations from Netherlands, Austria, Belgium, Poland, Portugal, and Spain. At least we can conclude that the results suggest that liberalisation either puts more women into low-wage jobs or then it does not have an effect on low-wage job allocation or prevalence. On the other hand, the results here only cover full-time low-wage jobs, not part-time low-wage ones, which would possibly be even more important in social terms. Once again, unemployment benefits do not appear to have any effect.

Interestingly, strictness of dismissals appears to have an opposite effect for men and women in all Areg models regarding low pay incidence. Unfortunately there connections cannot be confirmed with FE models due to the limitations of variance in the data. Nevertheless, there is yet again the finding that men gain from the regulation in terms of job quality while women lose, which is in line with the dual labour market theory. Regulation benefits the core, and men more often than woman find themselves in the core.

Basing on the results of Areg estimations, wage-setting institutions have much bigger role in explaining the share of low-wage pay than employment protection or unemployment benefits, which is not very surprising. The same observation can, however, also be done for employment levels. Again, the Areg model results for low-wage incidence repeat the finding that collective bargaining institutions have opposite effect for men and women. It is interesting that mid-level centralisation, which in hump-shape curve theory is seen as a bad policy employment-wise, results in considerably smaller proportion of female low-wage work than either extreme. In the case of men, mid-level centralisation is connected to more low-wage jobs. One should be careful with the conclusions though: in such labour market system women in low-wage sector might be discouraged to enter labour force at all, and would rather concentrate on domestic life. These findings are not significant in Fixed Effects models, probably due to the small amounts of within-country variance in these institutions. In Fixed Effects models, high immigration inflows seem to increase the share of low-wage employment for men, possible because immigrants themselves end up in low paying jobs. Other factors controlled, high tax wedge also appears to yield in more low-wage employment, even though the connection is not significant in Fixed Effects models.

TABLE 9 Estimation results on the share of involuntary part-time employment relative to total employment 1993-2011

	(1) Pooled OLS	(2) Areg model A		(3) Areg model B		(4) FE model A		(5) FE model B	
		Women	Men	Women	Men	Women	Men	Women	Men
Strictness temporary contracts	**-0.19 ***	0.14	**-0.28 *****	0.28	**-0.12 ***	-0.37	**-0.29 ***	-0.18	**-0.25 ***
	(0.09)	(0.15)	(0.06)	(0.15)	(0.06)	(0.49)	(0.13)	(0.41)	(0.11)
Strictness dismissals	**-0.54 *****	**-0.69 *****	**-0.30 *****	-0.13	0.09	**-2.05 ***	-0.47	**-2.23 ***	-0.49
	(0.11)	(0.16)	(0.08)	(0.23)	(0.09)	(0.82)	(0.33)	(0.95)	(0.38)
Unemployment benefits (GRR)	**0.09 ***	0.09	0.05	0.09	0.02	0.17	0.07	0.14	0.05
	(0.04)	(0.07)	(0.03)	(0.07)	(0.03)	(0.17)	(0.05)	(0.16)	(0.05)
Main controllers	N	N	N	N	N	N	N	N	N
Public childcare expenditure	-	N	N	-	-	-	-	-	-
Wage-setting exponentials	N	N	N	N	N	N	N	N	N
Interactions	N	N	N	N	N	N	N	N	N
Type of bargaining	N	N	N	N	N	-	-	-	-
Regime dummies	-	-	-	N	N	-	-	-	-
ALMP * Regimes	-	-	-	N	N	-	-	N	N
Constant	7.08 ***	12.30 ***	4.71 ***	10.57 ***	2.30 *	5.78	1.59	7.00	1.90
	(1.23)	(1.91)	(0.90)	(2.20)	(0.95)	(11.80)	(3.29)	(11.50)	(3.39)
N	371	343	343	371	371	371	371	371	371
Adj. R^2 / R^2 Within	0.56	0.51	0.54	0.61	0.67	0.36	0.49	0.43	0.52
F	22.13 ***	25.30 ***	18.09 ***	34.37 ***	28.27 ***	28.74 ***	379.6 ***	205.3 ***	8598 ***

* p < 0.05, ** p < 0.01, *** p < 0.001, Areg = Pooled OLS with years absorbed, FE = Fixed Effects, N = included

Only truly robust finding about liberalisation effects on involuntary part-time employment (Table 9) is that liberalisation of temporary contracts appears to slightly increase the share of involuntary part-time employment for men. The coefficients are negative for women too in Fixed Effects estimation, but due to higher variance the results are not significant for women. There is no evidence to claim the effect would be greater for men than women, but for men there is just less variance. It makes sense that allowing greater freedom for firms to hire employees with non-regular contracts might put few into the position where they are only offered part-time positions even if they would rather work full-time. According to Fixed Effects model female involuntary part-time employment seems to be more affected by dismissal protection than EPL of non-regular contracts: much more than the effect of temporary contract regulation on men. In any case, employment protection legislation seems to protect workers from involuntary part-time employment. Once again, unemployment benefits are irrelevant and do not affect the incidence of involuntary part-time employment. Furthermore, wage setting institutions play

an important role here as well, and probably have bigger impact on the quality of employment than EPL.

TABLE 10 Estimation results on the share of temporary employment relative to total employment 1993-2011

	(1) Pooled OLS	(2) Areg model A		(3) Areg model B		(4) FE model A		(5) FE model B	
		Women	Men	Women	Men	Women	Men	Women	Men
Strictness temporary contracts	**1.64 ****	**1.96 ****	**2.14 *****	**-1.67 *****	**-0.93 ***	-0.12	-0.29	-0.29	-0.45
	(0.61)	(0.63)	(0.63)	(0.47)	(0.47)	(0.73)	(0.67)	(0.49)	(0.44)
Strictness dismissals	**2.06 ****	**1.81 ****	**1.44 ***	-0.92	-1.03	0.38	-1.77	-0.95	**-2.79 ***
	(0.65)	(0.65)	(0.60)	(0.97)	(0.91)	(0.98)	(1.11)	(0.85)	(1.04)
Unemployment benefits (GRR)	0.21	-0.06	0.31	**0.61 ***	**0.92 *****	0.23	0.24	0.41	0.35
	(0.25)	(0.33)	(0.30)	(0.28)	(0.25)	(0.24)	(0.24)	(0.27)	(0.27)
Main controllers	N	N	N	N	N	N	N	N	N
Public childcare expenditure	-	N	N	-	-	-	-	-	-
Wage-setting exponentials	N	N	N	N	N	N	N	N	N
Interactions	N	N	N	N	N	N	N	N	N
Type of bargaining	N	N	N	N	N	-	-	-	-
Regime dummies	-	-	-	N	N	-	-	-	-
ALMP * Regimes	-	-	-	N	N	-	-	N	N
Constant	10.57 *	15.62 ***	6.00	63.98 ***	46.31 ***	33.69 ***	32.87 **	27.62 **	26.94 *
	(5.24)	(5.68)	(5.23)	(6.16)	(5.75)	(9.16)	(10.51)	(9.36)	(11.90)
N	337	313	313	337	337	337	337	337	337
Adj. R^2 / R^2 Within	0.51	0.51	0.50	0.70	0.66	0.29	0.29	0.44	0.40
F	24.02 ***	34.44 ***	30.13 ***	39.74 ***	27.59 ***	313.9 ***	109.8 ***	124.7 ***	625.1 ***

* p < 0.05, ** p < 0.01, *** p < 0.001, Areg = Pooled OLS with years absorbed, FE = Fixed Effects, N = included

The results for temporary employment share (Table 10) are especially interesting in the sense that they elaborate the importance of regime division as controlling variables, even though the Fixed Effects estimations here are not statistically significant. In first two models liberalisation seems to increase the share of permanent employment, improving the average quality. Introducing regime dummies into the estimation changes the direction altogether. It could well be argues that liberalising overall EPL could increase the share of permanent jobs since firms would not face the need to circumvent the regulations using atypical contracts. Here we are, however, talking about strictness of temporary contracts. It would be counter-intuitive to assume that liberalisation at the margin would increase the stability of an average job. What somewhat complicates the interpretation is that the Fixed Effects estimations are statistically not significant. Perhaps there is just too much noise and

uncertainty to reach significance in more restricted FE estimation. Again, women are affected on average much more by the liberalisation than men, resulting in a higher share of female temporary employment.

Wage bargaining dynamics dominate also the effect on temporary employment over the effects of Hartz-variables. The greatest share of permanent jobs can be achieved with highly coordinated high-level bargaining systems with either very low or very high centralisation. The result for coordination is also robust in FE models. High tax wedge seems also to decrease the share of temporary employment but on the other hand also total employment.

R^2 Within -values for Fixed Effects estimations are lower than the ones for full-time and part-time employment but still adequate. Areg-models for low-wage employment on the other hand provide very high adjusted R^2s. The models about involuntary part-time employment shares have lots of observations in the data but still the connections are statistically weak. It might be due to the highly subjective nature of involuntary part-time employment, which can explain bigger variance and less predictability.

4.2.5 Effects for young adults: substitution of full-time by part-time work

The empirical analysis on full-time-part-time employment relation done separately on young adults 25-29 years of age (Tables 11 and 12) suggest there is some difference to general population. The results of FE estimations imply the effects of liberalisation improve employment less on young people than older generations. The FE estimation actually suggest that the liberalising reforms of temporary contracts had substituted part-time jobs for full-time jobs for young adults, and the lost full-time jobs would have been lost from young men. Actually the biggest difference to the estimation on all age-groups is that young women have not got more full-time jobs from the liberalisation, only part-time jobs. Areg model A supports the results for part-time employment but the results for full-time employment are not robust across the specifications. Areg model A, which controls time-effects but not cross-country biases, estimates a much more positive effect for labour market liberalisation.

The results for young adults differ from general population also in the sense that strictness of dismissals has a significant effect for part-time employment in all the models but Areg B, which has limited variation due to the regime dummying. For young adults, strictness of dismissals seems to yield in worse employment outcomes than for older workers, which is realised as less part-time jobs, but not a significant effect for full-time jobs in FE estimations. There are some positive full-time employment effects in Areg models, but the interpretation is unclear without FE verification.

Additionally, young adults seem to be affected more by the changes in unemployment benefits than older people, yielding in lesser employment outcomes. Young men lost more full-time jobs than men on average. High unemployment benefits, according to the Fixed Effects estimation, result in less full-time employment young adults but somewhat more part-timers, but not

enough to cover the decrease in full-time work. Apparently, unemployment benefits are a bigger factor in explaining youth employment than for the whole population. On young adults, the changes in dismissal protection reach statistically significant negative effects for part-time employment rate. The coefficients are similar than with general population but with young people there is less noise. Wage-setting centralisation also seems to greatly increase young adult part-time employment rate without significant effect on full-time employment. The controller variable effects on young adult full-time employment are very similar than for total population.

TABLE 11 Estimation results on full-time employment rate of young adults (relative to 24-29 years old population) 1993-2011

	(1) Pooled OLS	(2) Areg model A		(3) Areg model B		(4) FE model A		(5) FE model B	
		Women	Men	Women	Men	Women	Men	Women	Men
Strictness temporary contracts	**-1.15 ****	**-1.82 *****	-0.80	0.58	-0.01	-0.02	**1.19 ***	0.08	**1.16 ****
	(0.38)	(0.51)	-0.45	(0.48)	(0.46)	(0.55)	-0.49	(0.58)	(0.41)
Strictness dismissals	**2.89 *****	**2.82 *****	**2.92 *****	**6.07 *****	**3.51 *****	-0.81	1.02	0.68	1.34
	(0.52)	(0.73)	(0.54)	(0.80)	(0.52)	(2.10)	(1.83)	(1.82)	(2.11)
Unemployment benefits (GRR)	**-0.49 ****	-0.32	-0.34	-0.35	**-0.60 *****	**-1.06 ***	**-0.98 ***	-0.93	**-0.92 ****
	(0.16)	(0.24)	(0.19)	(0.22)	(0.18)	(0.42)	(0.39)	(0.34)	(0.30)
Main controllers	N	N	N	N	N	N	N	N	N
Public childcare expenditure	-	N	N	-	-	-	-	-	-
Wage-setting exponentials	N	N	N	N	N	N	N	N	N
Interactions	N	N	N	N	N	N	N	N	N
Type of bargaining	N	N	N	N	N	-	-	-	-
Regime dummies	-	-	-	N	N	-	-	-	-
ALMP * Regimes	-	-	-	N	N	-	-	N	N
Constant	16.46 ***	71.45 ***	104.1 ***	53.13 ***	105.3 ***	77.59 **	75.90 ***	66.27 ***	68.36 ***
	(4.25)	(5.86)	(5.09)	(8.31)	(7.66)	(22.98)	(16.02)	(16.41)	(15.11)
N	311	284	284	311	311	311	311	311	311
Adj. R^2 / R^2 Within	0.45	0.35	0.48	0.48	0.61	0.52	0.58	0.60	0.60
F	18.90 ***	12.81 ***	18.86 ***	15.05 ***	20.52 ***	73.74 ***	127.0 ***	4*10^4 ***	446.0 ***

* p < 0.05, ** p < 0.01, *** p < 0.001, Areg = Pooled OLS with years absorbed, FE = Fixed Effects, N = included

The finding that liberalisation has had worse effect on the quality of young adults' employment than for the average population contradict the theory-based assumption that strict EPL should mostly benefit just prime-age workers. In terms of employment quality it seems that younger people have been stuck into part-time jobs due to the reforms. However, the decreases in prime employment concern mostly just young men while more women have found

their way into part-time employment. A possible explanation for the contradiction could be an omitted time variable: perhaps the changes in the global economy have treated young people worse than before, which would also correlate with reforming.

TABLE 12 Estimation results on part-time employment rate of young adults (relative to 24-29 years old population) 1993-2011

	(1) Pooled OLS	(2) Areg model A		(3) Areg model B		(4) FE model A		(5) FE model B	
		Women	Men	Women	Men	Women	Men	Women	Men
Strictness temporary contracts	**-0.73 ****	**-0.99 ***	**-0.46 ****	0.23	-0.02	**-1.09 ***	**-0.85 ****	**-1.06 ***	**-0.85 ****
	(0.26)	(0.43)	(0.15)	(0.32)	(0.15)	(0.40)	(0.27)	(0.40)	(0.28)
Strictness dismissals	**-0.72 ***	**-1.15 ***	**-0.71 *****	0.33	-0.13	**-3.33 ***	-1.77	**-3.02 ***	**-1.71**
	(0.32)	(0.53)	(0.15)	(0.39)	(0.15)	(1.27)	(1.02)	(1.36)	(1.04)
Unemployment benefits (GRR)	-0.11	-0.14	-0.05	**-0.49 *****	-0.06	**0.39 ***	0.26	**0.41 ***	**0.29 ***
	(0.12)	(0.18)	(0.06)	(0.11)	(0.04)	(0.16)	(0.13)	(0.18)	(0.13)
Main controllers	N	N	N	N	N	N	N	N	N
Public childcare expenditure	-	N	N	-	-	-	-	-	-
Wage-setting exponentials	N	N	N	N	N	N	N	N	N
Interactions	N	N	N	N	N	N	N	N	N
Type of bargaining	N	N	N	N	N	-	-	-	-
Regime dummies	-	-	-	N	N	-	-	-	-
ALMP * Regimes	-	-	-	N	N	-	-	N	N
Constant	12.00 ***	26.75 ***	8.59 ***	17.44 ***	2.90	6.00	6.62	5.21	7.18
	(3.14)	(4.89)	(1.53)	(5.09)	(2.12)	(7.77)	(5.36)	(8.11)	(6.07)
N	311	284	284	311	311	311	311	311	311
Adj. R^2 / R^2 Within	0.56	0.53	0.72	0.81	0.81	0.42	0.52	0.44	0.53
F	23.44 ***	22.97 ***	36.91 ***	81.80 ***	53.50 ***	47.87 ***	40.04 ***	397.2 ***	1336 ***

* p < 0.05, ** p < 0.01, *** p < 0.001, Areg = Pooled OLS with years absorbed, FE = Fixed Effects, N = included

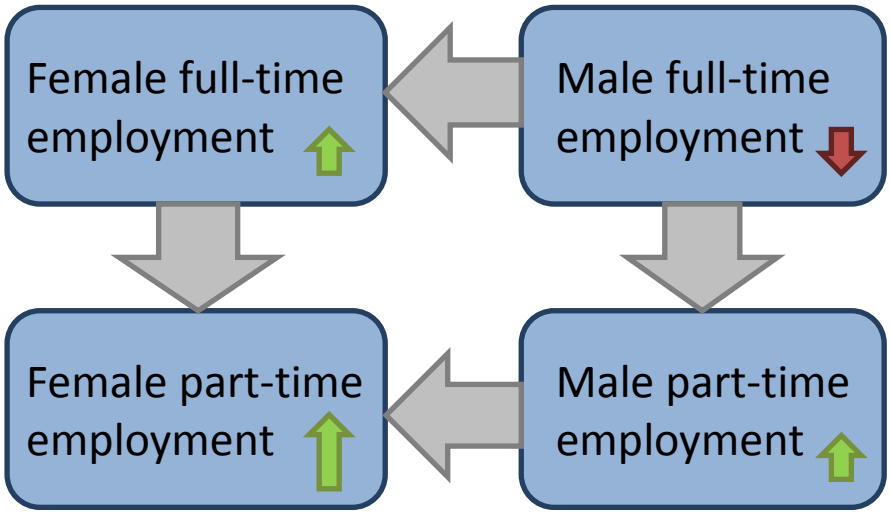
In any case, these findings suggest that there might be two kinds of substitution forces caused by the liberalisation of temporary contracts: a shift from male employment into female employment, and then a shift from full-time into part-time employment. The shift from male into female employment could negate the loss from female full-time employment, and thus cause a zero correlation. The results also suggest that due to the liberalisation done in OECD countries, there are now more young people employed than there would otherwise be, but the increase has happened almost conclusively in part-time sector. One possible explanation for age group differences is that the substitution of female employment for male employment due to the liberalisation is relatively stronger among older workers than younger ones.

This view is supported by the finding that the gender effects on part-time employment are much smaller for young adults than whole population. Therefore young people might be relatively more affected by the substitution of part time jobs for full-time jobs than male-female employment substitution.

4.3 Summary of the empirical results

The results of the empirical analyses suggest the effects of temporary contract liberalisation affect the average quality of employment contracts, and the effects are not uniform among gender and age groups. Women's employment has generally increased due to the reforms done, but at the cost of the job more likely being a temporary job and possibly also a low-wage one. Men, on the other hand, seem to have lost some full-time jobs, and got more part-time jobs instead, possibly with less permanent contract. The employment outcomes of liberalising reforms are estimated to be lesser for young adults than people on average, but the result might be partly biased due to the time-fixed effects. Considering total employment effects for both genders, the effect for full-time employment is almost none-existent while part-time employment has increased due to liberalisation of labour markets.

FIGURE 17 Two-way substitution effect between male-female and full-time-part-time employment due to the liberalisation of temporary contracts. Small arrows indicate overall effect.



The findings suggest the liberalisation of temporary contracts increases total employment but causes two kinds of substitution as well: a substitution of female employment for male employment, and a substitution of part-time work for full-time work (see Figure FIGURE 17). The latter effect might be due to the gap between regular and non-regular EPL. Partial reforms widening the gap are expected to yield in less fixed employment structure. Since most of the major liberalising reforms in the dataset can be considered partial reforms targeted 'at

the margin', the theory is plausible. The results might have been different if employment protection legislation had been liberalised all-around, not just EPL of non-regular contracts.

Even though the effects of EPL are significant, the results still suggest wage-setting dynamics matter more for the quality of employment. The effects of wage setting centralisation are very closely hump-shaped, especially in pooled OLS models. Other aspects of wage bargaining institutions might have more linear outcomes on labour market dynamics, but the major finding here is that wage-setting institutions explain much bigger chunk of the variance in the employment quality indicators than Hartz reform variables do. The Hartz effect is definitely not negligible but it is also not the primary explanation for country-to-country differences. Other controlling factors also have some effect, but clearly not as great as wage-setting institutions have. ALMP spending has some very large (and unrealistic) coefficients in pooled OLS and Areg models but the effects disappear in Fixed Effects estimations. Most likely this is a reflection from the fact that ALMP correlates with several other institutional characteristics in cross-country basis, which is then controlled in FE estimations. Therefore, these estimations do not tell much of actual ALMP spending effects but it can still serve as a useful controller variable. Additionally, output gaps are very significant in Fixed Effects models, which is a good sign for their relevance regarding macroeconomic fluctuations.

Unemployment benefit entitlements, also being part of the Hartz reforms, appear to be almost insignificant in explaining either employment quality or quantity. For young people, the study shows a small effect of reduced full-time employment if unemployment benefits are high. For all age groups, there is no trustworthy evidence of any effect.

TABLE 13 Summary of the effects of the main Hartz reform variable: 'Strictness of temporary contracts'

	Women		**Men**	
	Areg	FE	Areg	FE
Full-time employment	- / 0	-	0	+
Part-time employment	- / 0	-	-	-
Share of low-wage employment	- / 0	0	0	0
Share of involuntary part-timers	0	0	-	-
Share of temporary employment	-	0	-	0
Youth full-time employment	- / 0	0	0	+
Youth part-time employment	- / 0	-	- / 0	-

Table 13 summarises the effects of main proxy of Hartz reforms 'Strictness of temporary contracts'. Plusses and minuses concern the level of strictness, which means that liberalisation would affect in exact opposite way. Liberalising temporary contracts would then, for example, be expected to increase the share of involuntary part-timers among men but not among women. The evidence is strongest for those influences, for which both Areg and FE estimations show the same result. Often though, either one is not significant, sometimes due to the lack of variation, but it might also be a sign that either one of the estimations is biased by a confounding variable. The strongest evidence here regards part-time employment. There is strong evidence suggesting that liberalisation of temporary contract regulation had been associated with an increase in part-time employment: both the absolute amount of part-time jobs for all and also the share of involuntary part-timers among men. Other effects cannot be confirmed by both models but in any case I have already assumed that Fixed Effects is the better one as long as there is enough within-country variation in the data. As FE is generally more restricted, here I will consider statistically significant FE results as final results. In the case of temporary employment, Areg model result could be right as FE fails to reach statistical significance.

The results of this study clearly differ from the results of Bassanini & Duval (2006) even though both are carried out in a similar manner. Here liberalisation seems to have substituted full-time jobs with part-time jobs for men while the results of Bassanini and Duval suggest the opposite but for women, leaving men unaffected. Both studies agree that women have been more affected by the liberalisation than men, and mostly in a positive way (more employment, not better or worse than before). The biggest difference is the overall effect which here is estimated to be grimmer as in Bassanini's & Duval's work. Bassanini & Duval state that men have been unaffected by the changes in EPL while this study suggest the employment quality has decreased for men. On the other hand, this study finds out that actually both female part-time and female full-time employment has increased due to the reforms. In the end, the results might not be that contradictory: Bassani & Duval use different time span with different countries. Perhaps bringing the years 2006-2011 into analysis changes the picture slightly giving worse overall reform effect with similar dynamics between the genders.

Selected time span also affects the results: in the test runs using the whole available time span between 1985 and 2011, the effects of temporary EPL liberalisation faded away and EPL of dismissal protection started to dominate. In this setting, main Hartz variables mostly got just insignificant results. However, I already concluded that the setting with full time span is not the best possible, and is most likely biased. Also, the changes in two EPL variables prior to 1993 coincide to large extent, creating an identification problem. An additional problem regarding the gender division of the analysis is the non-linearly gendered nature of the financial crises. There is empirical literature suggesting (Périvier 2014) that the employment effects of a financial crisis mostly happen in different stages for men than for women, mostly because of

the gendered sectoral labour division. Initial crisis affects mostly men while austerity measures coming later usually affect mostly women. The crisis effects might not be perfectly captured for both genders with just one variable (Output gap) modelling economic fluctuations.

Furthermore, an issue regarding possible biases is an external globalisation effect. Even though not included in the analyses reported here, a country-specific globalisation index KOF from ETH Zürich (Dreher 2006; Dreher & al. 2008) was also considered afterwards. The indicator consists of different subfields of globalisation, not only financial or economic globalisation. With globalisation variable included, the effect of deregulation for full-time employment was even more negative. It removed the positive full-time employment effect of women, implying it could have been caused by other factors than labour market reforms. Nevertheless, part-time employment effects remained unaffected. With globalisation added to the picture EPL liberalisation seems more questionable as seems in the analysis here, but that is still too early to say without a proper analysis, and there is also the possibility of simultaneous bias. Tertiarisation of the economy might also be a biasing factor for the reasons described in previous chapters. Unclear connections between tertiarisation and labour market liberalisation make it hard to derive clear causal interpretation. In these results it is assumed that labour market reforms are the major force causing the changes, not some external unchangeable process of global tertiarisation. Of course this assumption might not be true but with the data in use, there is no possibility to prove it either way. We simply do not know, and there is no clear evidence in the literature either.

5 DISCUSSION

This study argues that liberalisation of labour markets, especially partial reforms at the margin, do not come without a cost. The quality of employment will be hurt for some people while others might benefit from easier access into atypical labour markets. It can be assumed that most of the jobs to be created by liberalisation of temporary contracts will be part-time jobs, not full-time jobs, and many of them will also be temporary jobs.

When deciding, what kind of labour policy is seen desirable, purely positive analysis might not always be sufficient. The most of people would probably agree that any kind of job chosen voluntarily is better than no job at all, if it does not affect the others. There might not, however, be any Pareto optimal win-win situations available, and we might need to decide what to value. Do we want to maximise employment, i.e. offer some work for highest amount of people possible, and make them to work as well? Or do we just look at the amount of work done? Or do we try to maximise the amount of people in job contracts they can be assumed to be happy with - even if it might mean that some people are left totally without employment? What should be the social valuation between typical and atypical employment?

While liberalisation does not come without a cost, it cannot be said either that it would be an utterly bad policy. While generally men are expected to lose in terms of employment quality, women are expected to benefit of an increase in both full-time and part-time employability. However, as pointed out by Rubery (2011) this might not be an everlasting effect, and is likely to reflect the current gendered structure of our labour markets. In total, the overall employment rate is estimated to rise due to liberalisation.

There are two clear conclusions drawn from the results. First, the labour market reform dynamics are definitely gendered as expected. Therefore, the results give support for dual labour market hypothesis. Dual labour market theory is not the only possible explanation for the gender disparity in the results but it offers one plausible interpretation: allowing firms to utilise so called 'secondary' labour markets more extensively increases the employability of those groups already highly represented in the secondary markets. Men are

overrepresented in primary labour market 'insiders', and might lose their positions when it becomes possible to replace insiders with more flexible outsiders. Increased flexibility might serve the purposes of women with child-care burden as more flexible part-time job arrangements are available. According to the theory, women are more often than men 'outsiders' of the primary labour markets, and therefore also have lower labour market attachment. As a result, women are more affected by the changes in incentives to work than men. For young adults the reforms effects are less gendered, probably because the labour market attachment of young women is higher than the attachment of older women. Young adults also yield on average less positive benefits from liberalisation than the whole population, possibly because the young generation has not yet managed to fully establish their position in the labour markets. This might also explain why the reform effects are less gendered for young people.

The second conclusion from the results is that flexibility of job contracts matters much less in terms of employment quality than wage-setting dynamics. Centralisation of wage-setting follows hump-shape curve theory, not just for the level of employment, but also for the employment quality. There are similar findings for other collective bargaining indicators as well, suggesting that there is indeed a highly non-linear relationship between the quality of employment and wage-setting institutions. The results here suggest that the difference between high-employment and low-employment countries in Europe might not be strongly explained by labour market flexibility but rather by differences in wage-setting dynamics. The same point has been raised by several scholars (Akyol, Neugart & Picher 2013; Bell & Blanchflower 2009; Dustmann & al. 2014) regarding the German 'employment miracle': the major change is believed to be happened in wage-setting, not necessarily due to the Hartz reforms.

To answer the question whether Hartz-like reforms are a solution for the rest of the Europe, probably not. Even if similar reforms might increase the employment rate modestly, it is unlikely that there would be a major difference. Introducing public childcare spending of 1% government budged is alone estimated to increase employment more than the whole Hartz effect in reducing EPL. Moreover, OECD (2014, 143-144) believes that better results would have been yielded with liberalisation of standard contracts of the labour market insiders, thus narrowing the gap between the primary and the secondary labour markets. According to the OECD report, asymmetric deregulation is not an optimal policy. Danish flexicurity-policies are more in line with the OECD stance than German road of partial reforms. Additionally, there are lots of individual aspects of Hartz reforms which are highly criticised, the Minijob system for instance. European countries with lowest employment levels suffer from a. macro-financial problems caused by the current crisis b. institutionally low female employment, and c. wage-setting institutions that prevent high employment. Liberalising EPL, especially if carried out only at the margin, would do only little to solve these problems.

OECD Employment Outlook 2014 (143-144) suggests that instead of partial labour market deregulation, the countries should aim creating a system with uniform cost of contract termination (instead of different for each type of contract). In practice it would mean deregulating the regular contracts while increasing the protection of employees with non-regular contracts. This would naturally prove to be difficult in countries with high overall employment protection level: such reforms might be politically unfeasible. Nevertheless, if partial labour market reforms are still carried out, as they might indeed have a modestly positive employment effect, there will be a need to compensate the increased insecurity. As increasing amount of workers are with contracts that lack certain fringe benefits, for example proper retirement insurance, there is some social welfare loss. In order to maintain the level of social security offered for people, it would be just to extend the social security networks to cover atypical contract work in a way that it offers sufficient level of security. Extending social security net would not only be a necessity in order to fix the problems caused by liberalisation but also to prevent rising inequality. Examples of necessary measures would be the extension of unemployment benefits and retirement insurances to be more flexible with series of non-regular employment stints. This way deregulation of employment protection could truly benefit also the ones with weaker labour market standing in a long run.

There are some possible confounding factors that risk the correct interpretation of the results. First, theoretically globalisation caused by external technological development could cause changes in the employment quality. The estimation test run with KOF globalisation index (Dreher 2006; Dreher & al. 2008) suggests that it might indeed be important explanatory factor for the changes in full-time employment but not for part-time employment. Hence, globalisation is definitely an issue that should be assessed more in future studies of this topic. In addition, tertiarisation is also a possible cause of omitted variable bias. Tertiarisation and EPL liberalisation are highly correlated in the data, and it is possible that labour market liberalisation can cause tertiarisation. A proper way to assess this problem would be to use an instrument variable which affects tertiarisation but is not affected by changes in EPL. Another similar issue is product market regulation, which is already discussed in some studies of similar kind (i.e. Bassanini & Duval 2006). Here we did not have sufficient data to properly analyse both labour and product market regulation.

For future research it would be interesting to have better data about actual low-wage employment. Such data is already collected by Eurostat but until now only twice. The data for low-wage incidence used here was not fully adequate and it had lots of gaps. Hence, this study fails to find hardly any connections explaining low-wage employment. After there is sufficiently data available, it could make a great contribution to our knowledge of the employment quality. Further possibilities to take into account in future research of labour market liberalisation are spillover effects caused to other countries from the reforming country, and better quantification of the level of internal flexibility supported labour market institutions. What I consider the main contributions of this study

in the field are extensive assessment of different types of employment quality, combination of data from different sources, and proper analysis of gendered effects.

All in all, it is reasonable to assume atypical employment is not free of social costs. If we accept the rise of atypical labour, we should also provide better social security for those people who work constantly at the margin of labour markets, increasing pension security for instance. The trickiest question is how to balance the costs of unemployment and the costs of non-regular employment. There is previous study literature suggesting labour market liberalisation is not Pareto optimal policy measure: there are people who lose in the process. There are without a doubt also people who gain, people who are able to enter the labour markets while otherwise not being able. On the other hand, there are most likely also people who have a risk a falling into atypical work traps without sufficient employment protection. If labour markets in European economies are to be further de-regulated, the deregulation should be carried out in an efficient way and, for the sake of fairness, the adverse effects should be compensated for those who suffer from the liberalisation. Deregulation of regular contract should be preferred over deregulation of non-regular contracts and the lack of fringe benefits in atypical jobs should be better compensated in social security if large-scale liberalisation of labour markets is to be executed.

BIBLIOGRAPHY

Akyol, Metin; Neugart, Michael & Pichler, Stefan (2013): Were the Hartz Reforms Responsible for the Improved Performance of the German Labour Market? Economic Affairs. Feb, Vol. 33 Issue 1, p34−47.

Alatalo, Johanna & Räisänen, Heikki (2012): Mistä on menestyksellinen työmarkkinareformi tehty – ja mitä Suomi voisi oppia Ruotsista, Saksasta ja Tanskasta? Työpoliittinen aikakauskirja 2/2012.

Angrist, Joshua & Pischke, Jörn-Steffen (2009): Mostly Harmless Econometrics: An Empiricist's Companion. Princeton: Princeton University Press.

Arpaia, Alfonso & Mourre, Gilles (2005): Labour Market Institutions and Labour Market Performance: A Survey of the Literature. European Comission Economic papers Number 238.

Atkinson, John (1985): Flexibility, uncertainty and manpower management. Issue 89 of IMS report. Institute of Manpower Studies.

Baker, Dean; Glyn, Andrew; Howell, David & Schmitt, John (2002): Labor Market Institutions and Unemployment: A Critical Assessment of the Cross-Country Evidence. SCEPA Working Paper 2002−17.

Barbieri, Paolo & Scherer, Stefani (2009): Labour Market Flexibilization and its Consequences in Italy. European Sociological Review, Vol. 25, No. 6, p677-692.

Bassanini & Duval (2006): Employment Patterns in OECD Countries: Reassessing the Role of Policies and Institutions. OECD Social, Employment and Migration Working Papers no. 35. OECD Publishing.

Bell, D. & Blanchflower, D. (2009): What Should Be Done About Rising Unemployment in the OECD? IZA Discussion Paper 4455. Bonn: Institute for the Study of Labor.

Bill, Anthea; Mitchell, William & Welters, Riccardo (2007): Labour Reform and Labour Mobility with in Cities: have the Hartz reforms succeeded? Centre of Full Employment and Equity, working Paper No. 07−16. Callaghan: the University of Newcastle.

Blanchard, Olivier & Wolfers, Justin (2000): The Role of Shocks and Institutions in the Rise of European Unemployment: The Aggregate Evidence. The Economic Journal, Vol. 110, No. 462, Conference Papers (Mar.), pC1−C33.

Blanchard, Olivier & Landier, Augustin (2002): The Perverse Effects of Partial Labor Market Reform: Fixed Duration Contracts in France. Economic Journal, Vol. 112, p214−244.

Booth, Alison; Francesconi, Marco & Frank, Jeff (2002): Temporary Jobs: Stepping Stones or Dead Ends? The Economic Journal. Royal Economic Society, Vol. 112(480), pF189−F213.

Cappellari, Lorenzo; Dell'Aringa, Carlo & Leonardi, Marco (2012): Temporary Employment, Job Flows and Productivity: A Tale of Two Reforms. Economic Journal. Vol. 122 Issue 562, pF188−F215.

Causa, Orsetta (2009): The Policy Determinants of Hours Worked across OECD Countries. OECD Journal: Economic Studies 2009, p1−39

Davidsson, Johan Bo (2011): An Analytical Overview of Labour Market Reforms Across the EU: Making Sense of the Variation. European University Institute Working Paper no. 111.

De la Rica, Sara & Amaia, Iza (2004): Career Planning in Spain: Do Fixed-term Contracts Delay Marriage and Parenthood? Review of Economics of the Household. 3, p49−73.

Dieckhoff, Martina & Steiber, Nadia (2012): Institutional reforms and age-graded labour market inequalities in Europe. International Journal of Comparative Sociology, Vol. 53 No. 2, p97-119.

Dreher, Axel (2006): Does Globalization Affect Growth? Evidence from a new Index of Globalization, Applied Economics Vol. 38 No. 10, p1091−1110.

Dreher, Axel; Gaston, Noel; and Martens, Pim (2008): Measuring Globalisation – Gauging its Consequences. New York: Springer.

Dustmann, Christian; Fitzenberger, Bernd; Schönberg, Uta & Spitz-Oener, Alexandra (2014): From Sick Man of Europe to Economic Superstar: Germany's Resurgent Economy. Journal of Economic Perspectives Vol. 28 No. 1, p167-188; also available as CReAM Discussion Paper No. 06/14.

Duval, Romain (2008): Is there a role for macroeconomic policy in fostering structural reforms? Panel evidence from OECD countries over the past two decades. European Journal of Political Economy. Jun, Vol. 24 Issue 2, p491−502.

Eichhorst, Werner; Konle-Seigl, Regina; Koslowski, Alison & Marx, Paul (2010): Quantity over Quality? A European Comparison of the Changing Nature of Transitions between Non-Employment and Employment. IZA Discussion Paper No. 5285. Bonn: Institute for the Study of Labor.

Eichhorst, Werner; Feil, Michael & Marx, Paul (2010): Crisis, what crisis? Patterns of adaptation in European labor markets, Applied Economics Quarterly Supplement, Vol. 56 No. 61, p29−64.

Eichhorst, Werner & Marx, Paul (2009): Reforming German labour market institutions: A dual path to flexibility. Journal of European Social Policy, Vol. 21 No. 1, p73−87.

Eichhorst, Werner; Marx, Paul & Tobsch, Verena (2009): Institutional Arrangements, Employment Performance and the Quality of Work. IZA Discussion Paper 4595. Bonn: Institute for the Study of Labor.

Eurofound (2009): Flexicurity and Industrial relations. See online (30.10.2014): <http://www.eurofound.europa.eu/eiro/studies/tn0803038s/index.htm>

Eurostat (2012): Statistics in Focus 48/2012.

Eurostat Statistics by theme (2014). European Comission.

Esping-Andersen, Gøsta (1990): The three worlds of welfare capitalism. Cambridge: Polity Press.

Esping-Andersen, Gøsta (1999): The Social Foundations of Postindustrial Economies. Oxford University Press.

Felbermayr, Gabriel; Larch, Mario & Lechthaler, Wolfgang (2012): Labour market reforms in a globalised world. Intereconomics. Sep, Vol. 47 Issue 5, p307−312.

Fertig, Michael; Kluve, Jochen; Schmidt, Christoph (2006): Die makro-ökonomische Wirkung aktiver Arbeitsmarktpolitik* eine Panelanalyse auf Ebene regionaler Arbeitsmärkte. Zeitschrift für ArbeitsmarktForschung, Vol. 39 No. 3/4, p575−601.

Fiori, Giuseppe; Nicoletti, Giuseppe; Scarpetta, Stefano & Schiantarelli, Fabio (2012): Employment Effects of Product and Labour Market Reforms: Are There Synergies? Economic Journal. Feb, Vol. 122 Issue 558, pF79−F104.

Flaig, Gebhard & Rottmann, Horst (2013): Labour market institutions and unemployment: an international panel data analysis. Empirica, Vol. 40 Issue 4, p635−654.

Fournier, Jean-Marc & Koske, Isabell (2012): The determinants of earnings inequality: evidence from quantile regressions. OECD Journal: Economic Studies, Vol. 2012/1, p7-36.

fRDB-IZA Social Reforms Database. Fondazione Rodolfo Debenedetti & Institute for the study of Labor (Bonn).

Freeman, Richard (2007): Labor market institutions around the world, NBER Working Paper, 13242.

Fremigacci, Florent & Terracol, Antoine (2013): Subsidized temporary jobs: lock-in and stepping stone effects. Applied Economics. Vol. 45 Issue 33, p4719−4732.

Giesecke, Johannes (2009): Socio-economic Risks of Atypical Employment Relationships: Evidence from the German Labour Market. European Sociological Review, Vol. 25 No. 6, p629−646

Gordon, Robert J., & Dew-Becker, Ian (2006): The Slowdown in European Productivity Growth: A Tale of Tigers, Tortoises, and Textbook Labor Economics. Paper presented at the NBER Summer Institute Macroeconomic and Productivity Workshop, Cambridge, MA.

Green, Francis & al. (2013): Is Job Quality Becoming More Unequal? Industrial & Labor Relations Review July 2013 Vol. 66, p753−784.

Green, Francis (2008): Subjective Employment Insecurity Around The World. Cambridge Journal of Regions, Economy and Society. Cambridge Political Economy Society, Vol. 2 No. 3, p343−363.

Grip, A. de, Hoevenberg, J. & Willems, E. (1997): Atypical Employment in the European Union. International Labour Review, Vol. 136, p49–71.

Hevenstone, Debra (2010): National Context and Atypical Employment. International Sociology, Vol. 25, p315−347.

Howell, David, Baker, Dean, Glyn, Andrew & Schmitt, John (2007): Are Protective Labor Market Institutions at the Root of Unemployment? A Critical Review of the Evidence, Capitalism and Society, Vol. 2 No.1, Article 1.

ICTWSS (2013): Database on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts in 34 countries between 1960 and 2007. Amsterdam Institute for Advanced labour Studies. <http://www.uva-aias.net/208> (16.03.2014)

Kahn, Lawrence (2007): Employment Protection Reforms, Employment and the Incidence of Temporary Jobs in Europe: 1995–2001. IZA Discussion Paper No. 3241. Bonn: Institute for the Study of Labor.

Kalleberg, Arne (2000): Nonstandard Employment Relations: Part-time, Temporary and Contract Work. Annual Review of Sociology, Vol. 26, p341-365.

Kaufman, Bruce & Hotchkiss, Julie (2006): The Economics of Labour Markets. Mason: Thomson Higher Education.

Kauhanen, Merja (2013): Olisiko Saksan työmarkkinamallista opiksi Suomelle? Talous & Yhteiskunta 3/2013. Helsinki: Palkansaajien tutkimuslaitos (Labour Institute for Economic Research).

Kauhanen, Merja & Nätti, Jouko (2011): Involuntary temporary and part-time work, job quality and well-being at work. Discussion Paper 272. Helsinki: Palkansaajien tutkimuslaitos (Labour Institute for Economic Research).

Klinger, Sabine & Rothe, Thomas (2010): The impact of labour market reforms and economic performance on the matching of short-term and long-term unemployed. Scottish Journal of Political Economy. Feb2012, Vol. 59 Issue 1, p90−114.

Koeniger, Winfried; Leonardi, Marco & Nunziata, Luca (2007): Labor market institutions and wage inequality. Industrial and Labor Relations Review, Vol. 60, No. 3, p340-356.

Konle-Seidl, Regina & Trübswetter, Parvati (2011): Are insecure contracts the price of more employment? IAB Brief Report 25. Nürnberg: Institute for Employment Research of the German Federal Employment Agency.

LABREF, European Commission & European Policy Committee (2014).

Launov, Andrey & Wälde, Klaus (2013): Estimating Incentive and Welfare Effects of Nonstationary Unemployment Benefits. International Economic Review, Vol. 54 Issue 4, p1159–1198.

Lindbeck, Assar, and Snower, Dennis (1984): Involuntary Unemployment as an Insider-Outsider Dilemma. Seminar Paper No. 309. Institute for International Economic Studies, University of Stockholm.

Martin, John (2000): What works among active labour market policies: evidence from OECD countries' experiences. OECD Economic Studies No. 30, 2000/14.

Månsson, Jonas & Ottosson, Jan (2011): Transitions from part-time unemployment: Is part-time work a dead end or a stepping stone to the labour market? Economic & Industrial Democracy. Vol. 32 Issue 4, p569-589.

OECD (2011): Divided We Stand: Why Inequality Keeps Rising. Paris: OECD.

OECD (2009): Germany: The Hartz reforms of the labour market, 2002-05. OECD General Economics & Future Studies, Volume 2009, Number 7, August, p203−226.

OECD Employment Outlook 2014.

OECD Employment Outlook 2013.

OECD Statistics (2014).

Osterman, Paul (2013): Introduction to the Special Issue on Job Quality: What Does it Mean and How Might We Think about It? Industrial & Labor Relations Review July 2013, Vol. 66, p739−752.

Périvier, Hélène (2014): Men and women during the economic crisis employment trends in eight European countries. Revue de L'OFCE, Vol. 133 Issue 2, p41-84.

Pfeifer (2005): Flexibility, dual labour markets, and temporary employment: Empirical evidence from German establishment data. Management revue: the international review of management studies.

Piore, Michael & Doeringer, Peter (1971): Internal Labor Markets and Manpower Adjustment. New York: D.C. Heath and Company.

Pissarides, Christopher (2000): Equilibrium unemployment theory. Cambridge, MA, and London: MIT Press.

Potrafke, Niklas (2010): Labor Market Deregulation and Globalization: Empirical Evidence from OECD Countries. Review of World Economics, September 2010, Vol. 146 Issue 3, p545−571.

Raess, Damian & Burgoon, Brian (2013): Flexible Work and Immigration in Europe. British Journal of Industrial Relations. Vol. 53 Issue 1, p94–111.

Reed, Howard (2010): Flexible with the Truth? Exploring the Relationship between Labour Market Flexibility and Labour Market Performance. A Report for the TUC, Landman Economics.

Rosenbaum, Paul & Rubin, Donald (1983): The Central Role of the Propensity Score in Observational Studies for Causal Effects. Biometrika Vol. 70 No.1, p41−55.

Rubery, Jill (2011): Towards a gendering of the labour market regulation debate. Cambridge Journal of Economics, Vol. 35 No. 6, p1103-1126.

Räisänen, Heikki; Alatalo, Johanna; Henriksen Krüger, Kristian; Israelsson, Torbjörn & Klinger, Sabine (2012): Labour Market Reforms and Performance in Denmark, Germany, Sweden and Finland. Helsinki: Ministry on Employment and Economy.

Saint-Paul, Gilles (1996): Dual labor markets: a macroeconomic perspective. Cambridge, Mass: MIT Press.

Sarkar, Prabirjit (2013): Does an employment protection law lead to unemployment? A panel data analysis of OECD countries, 1990−2008. Cambridge Journal of Economics Vol. 37 No. 6, p1335-1348.

Schank, Thorste; Schnabel, Claus & Gerner, Hans-Dieter (2009): Stimulating part-time work by legal entitlements? Evidence from a German policy experiment. Applied Economics Letters. Vol. 16 Issue 4, p391−394.

Song, Jiyeoun (2012): The Diverging Political Pathways of Labor Market Reform in Japan and Korea. Journal of East Asian Studies. Vol. 12 No. 2, p161-191.

Spermann, Alexander (2011): The New Role of Temporary Agency Work in Germany. IZA Discussion Paper 6180. Bonn: Institute for the Study of Labor.

Sturn, Simon (2011): Labour Market Regimes and Unemployment in OECD Countries. IMK Working Paper 6/2011. IMK at the Hans Boeckler Foundation.

Traxler, Franz & Brandl, Bernd (2012): Collective Bargaining, Inter-Sectoral Heterogeneity and Competitiveness: A Cross-National Comparison of Macroeconomic Performance. British Journal of Industrial Relations Vol. 50 No.1, p73−98.

Traxler, Franz & Kittel, Bernhard (2000): The Bargaining System and Performance: A Comparison of 18 OECD Countries. Comparative Political Studies, Vol. 33 No. 9, p1154-1190.

Visser, Jelle (2013): Wage Bargaining Institutions - from crisis to crisis. European Commission Economic Papers 488.

Vranken, Martin (2005): Labour law reform in Australia and New Zealand: Once united, henceforth divided? Victoria University of Wellington Law Review Yearbook, p25-41.

Wasmer, Etienne (2006): The Economics of Prozac (Do Employees Really Gain from Strong Employment Protection?). CEPR Discussion Papers 5991, C.E.P.R. Discussion Papers.

Weinkopf, Claudia (2014): Women's Employment in Germany: Robust in Crisis but Vulnerable in Job Quality. Revue de L'OFCE, Vol. 133 Issue 2, p189-214.

Wooldridge, Jeffrey (2013): Introductory Econometrics: A Modern Approach. Mason, South-Western Cengage Learning.

APPENDIX

List of variables and sources:

Employment rate

Source: OECD Statistics, Labour Force Statistics, LFS by sex and age

Definition: Percentage all employed persons of 15-64 years old population. Employed people cover both self-employed and paid (dependent) employed.

Also divided by genders.

Young Adult Employment Rate

Source: OECD Statistics, Labour Force Statistics, LFS by sex and age

Definition: Percentage all employed persons of 24-29 years old population. Employed people cover both self-employed and paid (dependent) employed.

Divided by genders.

Share of part-time employment to total employment

Source: OECD Statistics, Labour Force Statistics, Full-time Part-time employment

Definition: Percentage of part-time workers of all employed. Part-time employment is based on a common 30-usual-hour cut-off in the main job.

Also divided by genders. Australian data prior to 2001 interpolated using national definition as a benchmark for changes.

Share of part-time employment to total employment of young adults

Source: OECD Statistics, Labour Force Statistics, Full-time Part-time employment

Definition: Percentage of part-time workers of all employed among 24-29-year-olds. Part-time employment is based on a common 30-usual-hour cut-off in the main job.

Divided by genders.

Share of full-time employment to population

= Employment rate - (Employment rate * Share of part-time to total employment) / 100

Also divided by genders, and among young adults (24-29-year-olds).

Share of part-time employment to population

= (Employment rate * Share of part-time to total employment) / 100

Also divided by genders, and among young adults (24-29-year-olds).

Share of involuntary part-time workers

Source: OECD Statistics, Labour Force Statistics, Incidence of part-time workers

Definition: Ratio of involuntary part-time work and total employment. Involuntary part-time work comprises three groups: i) individuals who usually work full-time but who are working part-time because of economic slack; ii) individuals who usually work part-time but are working fewer hours in their part-time jobs because of economic slack; and iii) those working part-time because full-time work could not be found. The information is based on subjective announcements and surveys.

Australian data is supplemented with own calculation using the OECD measure of involuntary part-time workers per population.

Share of temporary employment

Source: OECD Statistics, Labour Force Statistics, Permanent temporary employment

Definition: Ratio of temporary employment and total dependent employment (self-employed not included). Temporary employment comprises work under a fixed- term contract, in contrast to permanent work where there is no end-date. Employment under temporary contracts often entails a different set of legal obligations on behalf of employers; in particular, certain aspects of employment protection legislation do not apply to temporary contracts.

Share of low-wage employment

Source: OECD Statistics, Earnings, Decile rations of gross earnings

Definition: Percentage of full-time workers who earn less than two-thirds of gross median earnings of all full-time workers.

Strictness of temporary contracts

Source: OECD Statistics, Employment Protection

Definition: A Synthetic indicator (values 0-5) of the strictness of regulation and the use of temporary contracts. For each year, indicators refer to regulation in force on the 1st of January. For more information and full methodology, see www.oecd.org/employment/protection.

Strictness of individual and collective dismissals

Source: OECD Statistics, Employment Protection

Definition: A synthetic indicator (values 0-5) of the strictness of regulation on dismissals (regular contracts). For each year, indicators refer to regulation in force on the 1st of January. For more information and full methodology, see www.oecd.org/employment/protection.

Gross replacement Rate of unemployment benefits

Source: OECD, Tax-Benefit Models

Definition:

1. GRR (APW) 1961 - 2005, uneven years: this is the historic OECD summary measure of benefit generosity. The OECD summary measure for APW is defined as the average of the gross unemployment benefit replacement rates for two earnings levels, three family situations and three durations of unemployment. Pre-2003 data have been revised.
2. GRR (AW) 2001 - 2011, uneven years: this is constructed in a similar way as the GRR (APW) series but is calibrated to the AW. The OECD summary measure is defined as the average of the gross unemployment benefit replacement rates for two earnings levels, three family situations and three durations of unemployment.

Final parameter is formed merging these two datasets whenever possible.
For further details, see OECD (1994), The OECD Jobs Study (chapter 8) and Martin J. (1996), 'Measures of Replacement Rates for the Purpose of International Comparisons: A Note', OECD Economic Studies, No, 26.

Tax Wedge

Source: OECD Statistics, Taxing Wages

Definition: Tax wedge on a single worker without children at 100% of average earnings. Tax wedge means the difference between before- and after-tax income. Data is based on Average Worker (AW) on private sector. Data before the year 2000 is projected backwards using obsolate OECD measure on tax wedge, Historical Model A*. Historical model A uses Average Production Worker (APW) solely on manufacturing sector instead of AW more generally, and only covers two types of a household.

*In the case of Slovakia, the projection is done using Eurostat measure of tax wedge on low-income instead.

Active Labour Market Policy (ALMP) spending

Source: OECD Statistics, Eurostat

Definition: Public expenditure on ALMP measure categories 1-7 as a percentage of GDP.

The indicator for the total active labour market policy expenditure is coherently acquired from the OECD database, except for the cases of Italy and Greece. Due to the shortage of the Greek and Italian data in OECD statistics the series is supplemented with Eurostat data on ALMP spending on active measures. The difference is that OECD counts measures 1-7, and Eurostat for many observations only measures 2-7. The difference in the series is filled with an assumption that the difference is stable, close to 0.10% of the Italian GDP (average from Eurostat data). Similar estimate was done for Greece.

Output gap

Source: Economic Outlook No 95 - May 2014 - OECD Annual Projections

Definition: Deviations of actual GDP from potential GDP as a percentage of potential GDP.

Variables are defined in such a way that they are as homogenous as possible for the countries covered. Breaks in underlying series are corrected as far as possible. Sources for the historical data are national statistical agencies and OECD statistical publications such as the Quarterly National Accounts, the Annual National Accounts, the Annual Labour Force Statistics and the Main Economic Indicators. The cut-off date for information used in the compilation of the projections was the 30 April 2014.

Immigration inflows

Source: OECD, Migration Statistics

Definition: Amount of foreign citizens immigrating into the country in a year as a percentage of population multiplied by 1000. Percentage counted using OECD data on population.

Public expenditure on childcare

Source: OECD, Social protection, Social expenditure

Definition: Percentage of national gross domestic product used for public or mandatory private day care and home-help services.

Centralisation of wage-setting

Source: ICTWSS: Database on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts in 34 countries between 1960 and 2012 by Jelle Visser, Amsterdam Institute for Advanced Labour Studies

Definition: Summary measure of centralisation of wage bargaining, taking into account both union authority and union concentration at multiple levels. The variable gets values 1-0 (1 is the most centralised). It is counted weighting the degree of authority or vertical coordination in the union movement with the degree of external and internal unity, and union concentration or horizontal coordination, taking account of multiple levels at which bargaining can take place, and assuming a non-zero division of union authority over different levels.

Coordination of wage-setting

Source: ICTWSS, Jelle Visser

Definition: 5-1 classification of the degree of wage-setting coordination, five being the most coordinated, and one least coordinated.

Level of bargaining

Source: ICTWSS, Jelle Visser

Definition: Predominant level(s) at which bargaining takes place. 'Predominant' accounts for two thirds of the total bargaining coverage rate. The value five means the most centralised level while one stands for the most local level.

Type of coordination of wage-setting

Source: ICTWSS, Jelle Visser

Definition: Categorical variable for the type of coordination:

6 = State-imposed bargaining (incl. statutory controls in lieu of bargaining)
5 = State-sponsored bargaining (this includes pacts)
4 = Inter-associational by peak associations
3 = Intra-associational ('informal centralisation')
2 = Pattern bargaining
1 = Uncoordinated bargaining

Policy Regimes

Source: Esping-Andersen (1990)

Definition: Countries divided into:

1. Nordic (Social Democratic): Denmark, Finland, Sweden, Norway
2. Continental (Conservative-Static): Austria, Belgium, France, Germany, Netherlands, Japan
3. Anglo-Saxon (Liberal): Australia, Canada, Ireland, New Zealand, United Kingdom, United States
4. South European: Greece, Italy, Spain, Portugal
5. East European (Developing): Czech Republic, Hungary, Poland, Slovakia

Full results tables:

Estimation results on full-time employment rate (relative to 15-64 years old population) 1993-2011

	(1) Pooled OLS	(2) Areg model A		(3) Areg model B		(4) FE model A		(5) FE model B	
		Women	Men	Women	Men	Women	Men	Women	Men
Strictness temporary contracts	**-1.25** ***	**-1.17** *	-0.35	-0.41	0.11	**-0.85** *	0.54	-0.77	**0.59** *
	(0.35)	(0.54)	(0.27)	(0.44)	(0.22)	(0.41)	(0.30)	(0.42)	(0.28)
Strictness dismissals	**1.72** ***	**2.15** **	**1.01** *	**3.00** ***	**1.83** ***	-1.13	-0.35	0.44	-0.22
	(0.47)	(0.74)	(0.36)	(0.82)	(0.35)	(1.54)	(1.12)	(1.35)	1.01
Unemployment benefits (GRR)	-0.15	0.11	**-0.39** ***	-0.04	**-0.23** *	-0.07	-0.10	0.04	-0.07
	(0.14)	(0.25)	(0.12)	(0.18)	(0.10)	(0.30)	(0.19)	(0.24)	(0.16)
Tax wedge	-0.34 ***	-0.25	-0.61 ***	0.02	-0.24 **	-0.45	-0.24	-0.28	-0.06
	(0.10)	(0.15)	(0.09)	(0.18)	(0.09)	(0.29)	(0.26)	(0.20)	(0.17)
ALMP spending	-27.78 ***	-50.36 ***	-12.57 ***	N	N	4.84	-0.35	N	N
	(3.49)	(6.61)	(3.28)			(6.37)	(4.27)		
Output gap	0.29 ***	0.21	0.34 ***	0.44 **	0.54 ***	0.22 ***	0.53 ***	0.21 ***	0.52 ***
	(0.09)	(0.20)	(0.10)	(0.15)	(0.09)	(0.06)	(0.06)	(0.05)	(0.06)
Immigration	0.75	-2.00	3.19 ***	1.38	2.43 ***	4.47 **	0.71	3.43 **	0.40
	(0.76)	(1.45)	(0.66)	(1.01)	(0.57)	(1.35)	(0.93)	(1.09)	(0.95)
Public childcare expenditure	-	11.30 ***	0.87	-	-	-	-	-	-
		(1.45)	(0.58)						
Centralisation of wage-setting	-16.41 ***	5.70	-37.77 ***	-2.74	-21.30 ***	14.79	-9.01	9.55	-10.86
	(4.65)	(10.81)	(4.17)	(9.01)	(3.83)	(10.76)	(10.76)	(9.31)	(9.89)
Centralisation²	9.81 **	-6.30	31.10 ***	-0.07	15.86 ***	-6.47	14.51	-3.93	13.04
	(4.18)	(9.24)	(3.28)	(7.67)	(3.39)	(15.37)	(9.15)	(13.06)	(8.35)
Coordination of wage-setting	-0.08	-7.32 **	5.27 ***	-5.11 **	2.93 *	-4.78	1.49	-5.11	1.67
	(1.79)	(2.33)	(1.26)	(1.86)	(1.33)	(3.36)	(2.48)	(2.72)	(1.60)
Coordination²	-0.43	-0.12	-1.19 ***	0.07	-1.34 ***	-0.48	-0.04	-0.43	-0.08
	(0.42)	(0.55)	(0.30)	(0.43)	(0.30)	(0.56)	(0.32)	(0.43)	(0.22)
Level of bargaining	-0.03	-3.09	3.09 **	-1.91	0.80	0.78	3.76 **	0.53	3.79 **
	(1.34)	(2.12)	(1.14)	(1.70)	(0.95)	(1.46)	(1.24)	(1.27)	(1.09)
Level of bargaining²	0.20	0.94 **	-0.47 *	0.55	-0.07	-0.15	-0.44 *	-0.10	-0.58 **
	(0.24)	(0.36)	(0.19)	(0.30)	(0.15)	(0.20)	(0.17)	(0.15)	(0.15)
Interactions	-	N	N	N	N	N	N	N	N
Type of bargaining	N	N	N	N	N	-	-	-	-
Regime dummies	-	-	-	N	N	-	-	-	-
ALMP * Regimes	-	-	-	N	N	-	-	N	N
Constant	74.69 ***	65.30 ***	88.11 ***	55.37 ***	82.20 ***	59.54 ***	67.04 ***	52.96 ***	61.31 ***
	(3.68)	(6.36)	(2.85)	(6.70)	(3.96)	(14.85)	(10.66)	(11.04)	(8.24)
N	367	339	339	367	367	367	367	367	367
Adj. R^2 / R^2 Within	0.42	0.46	0.67	0.71	0.79	0.56	0.57	0.64	0.61
F	23.69 ***	23.53***	64.31 ***	65.04 ***	86.00 ***	24.33 ***	74.49 ***	2820 ***	191.9 ***

* p < 0.05, ** p < 0.01, *** p < 0.001, Areg = Pooled OLS with years absorbed, FE = Fixed Effects, N = included

Estimation results on part-time employment rate (relative to 15-64 years old population) 1993-2011

	(1) Pooled OLS	(2) Areg model A		(3) Areg model B		(4) FE model A		(5) FE model B	
		Women	Men	Women	Men	Women	Men	Women	Men
Strictness temporary contracts	**-1.08 ***	**-1.43 ***	**-0.77 ***	0.23	**-0.55 ***	**-1.45 ***	**-0.60 **	**-1.39 ***	**-0.60 **
	(0.33)	(0.60)	(0.14)	(0.43)	(0.12)	(0.61)	(0.18)	(0.59)	(0.20)
Strictness dismissals	**-0.82 ***	**-1.67 **	**-0.36 ***	**2.37 ***	**0.49 ***	-3.31	-1.14	-3.51	-0.83
	(0.38)	(0.63)	(0.16)	(0.57)	(0.15)	(2.09)	(0.76)	(2.24)	(0.70)
Unemployment benefits (GRR)	0.00	0.22	**-0.14 ***	0.11	**-0.19 ***	0.34	0.03	0.26	0.06
	(0.14)	(0.24)	(0.06)	(0.14)	(0.05)	(0.19)	(0.09)	(0.17)	(0.10)
Tax wedge	-0.31 **	-0.30	-0.35 ***	0.21	-0.15 ***	0.08	-0.14	-0.01	-0.16
	(0.11)	(0.18)	(0.05)	(0.14)	(0.04)	(0.19)	(0.09)	(0.20)	(0.09)
ALMP spending	7.06	10.07	3.16	N	N	-2.87	0.48	N	N
	(4.90)	(9.14)	(2.00)			(4.49)	(1.90)		
Output gap	-0.04	-0.38	-0.06	-0.18	-0.06	0.04	-0.04	0.01	-0.03
	(0.09)	(0.19)	(0.06)	(0.13)	(0.04)	(0.06)	(0.02)	(0.05)	(0.02)
Immigration	2.74 ***	4.01 **	-0.47	-0.25	-0.58 *	0.91	0.72 *	0.96	0.58
	(0.72)	(1.40)	(0.35)	(0.94)	(0.28)	(0.94)	(0.27)	(0.87)	(0.28)
Public childcare expenditure	-	-5.68 ***	-0.29	-	-	-	-	-	-
		(1.38)	-0.33						
Centralisation of wage-setting	-3.29	-28.58 **	6.31 *	-3.54	11.51 ***	8.20	3.75	4.86	3.60
	(6.01)	(10.93)	(2.85)	(6.87)	(1.59)	(16.26)	(2.44)	(14.96)	(2.59)
Centralisation²	3.09	25.00 **	-7.02 *	1.68	-10.74 ***	11.02	0.63	10.80	1.50
	(4.96)	(8.98)	(2.25)	(6.09)	(1.43)	(26.07)	(3.82)	(23.72)	(3.47)
Coordination of wage-setting	-1.82	-0.29	-1.18	-1.16	-0.20	-0.99	-2.02	-1.55	-2.03
	(1.24)	(2.10)	(0.61)	(1.46)	(0.51)	(1.78)	(0.83)	(1.92)	(0.84)
Coordination²	0.79 *	0.96	0.08	-0.52	-0.17	-0.20	-0.19	-0.21	-0.19
	(0.37)	(0.62)	(0.16)	(0.37)	(0.11)	(0.27)	(0.14)	(0.25)	(0.14)
Level of bargaining	4.96 ***	7.95 ***	0.45	3.50	-1.38 **	-3.90 *	-1.24 *	-3.51 *	-1.36 *
	(1.48)	(2.42)	(0.69)	(1.52)	(0.49)	(1.80)	(0.54)	(1.59)	(0.53)
Level of bargaining²	-1.06 ***	-1.65 ***	-0.15	-0.77 *	0.09	0.54 *	0.16 *	0.49 *	0.18 *
	(0.28)	(0.45)	(0.13)	(0.37)	(0.09)	(0.23)	(0.07)	(0.21)	(0.07)
Interactions	N	N	N	N	N	N	N	N	N
Type of bargaining	N	N	N	N	N	-	-	-	-
Regime dummies	-	-	-	N	N	-	-	-	-
ALMP * Regimes	-	-	-	N	N	-	-	N	N
Constant	16.17 ***	21.35 **	16.74 ***	8.87	10.35 ***	32.94 *	18.24 ***	30.98 **	18.64 ***
	(3.79)	(6.76)	(1.71)	(5.97)	(1.63)	(10.80)	(4.55)	(10.50)	(4.72)
N	367	339	339	367	367	367	367	367	367
Adj. R^2 / R^2 Within	0.59	0.55	0.70	0.81	0.84	0.43	0.53	0.46	0.55
F	76.55 ***	63.29 ***	61.72 ***	101.1 ***	85.25 ***	11.60 ***	39.87 ***	109.9 ***	178.21 ***

* p < 0.05, ** p < 0.01, *** p < 0.001, Areg = Pooled OLS with years absorbed, FE = Fixed Effects

Estimation results on the share of low-wage employment relative to total employment 1993-2011

	(1) Pooled OLS	(2) Areg model A		(3) Areg model B		(4) FE model A		(5) FE model B	
		Women	Men	Women	Men	Women	Men	Women	Men
Strictness temporary contracts	-0.70	**-2.63 *** **	-0.03	-0.70	-0.71	-0.40	-0.24	-0.27	-0.23
	(0.37)	(0.52)	(0.40)	(0.61)	(0.56)	(0.59)	(0.49)	(0.75)	(0.65)
Strictness dismissals	**-0.95 ***	**1.67 ** **	**-2.04 *** **	**1.52 ***	**-1.60 ***	0.56	-0.78	-0.28	-0.87
	(0.42)	(0.56)	(0.44)	(0.72)	(0.63)	(3.15)	(1.19)	(2.77)	(1.22)
Unemployment benefits (GRR)	-0.11	-0.23	0.02	-0.22	-0.04	0.23	0.12	0.32	0.21
	(0.12)	(0.18)	(0.11)	(0.15)	(0.12)	(0.35)	(0.13)	(0.31)	(0.17)
Tax wedge	0.52 ***	0.19	0.64 ***	0.52 ***	0.70 ***	0.44	0.34	0.42	0.20
	(0.11)	(0.12)	(0.12)	(0.13)	(0.11)	(0.24)	(0.25)	(0.25)	(0.17)
ALMP spending	2.23	-23.00 **	13.06 *	N	N	3.14	4.80	N	N
	(5.00)	(8.29)	(5.22)			(8.70)	(4.48)		
Output gap	0.10	0.04	0.38 ***	-0.16	0.12	-0.02	0.00	-0.02	0.00
	(0.08)	(0.12)	(0.11)	(0.11)	(0.09)	(0.06)	(0.06)	(0.05)	(0.05)
Immigration	0.64	-0.98	0.69	-3.54 ***	0.86	-0.11	1.33 *	-0.48	1.21 *
	(0.74)	(1.05)	(0.76)	(0.99)	(0.65)	(1.34)	(0.56)	(1.10)	(0.48)
Public childcare expenditure	-	-2.52	-4.98 ***	-	-	-	-	-	-
		(1.38)	(1.01)						
Centralisation of wage-setting	1.91	-51.80 ***	24.37 ***	-46.52 ***	28.22 ***	-3.58	-0.17	2.06	0.66
	(4.53)	(7.18)	(5.06)	(5.45)	(4.81)	(11.72)	(8.63)	(11.44)	(6.91)
Centralisation²	1.73	53.33 ***	-23.52 ***	44.30 ***	-24.82 ***	-6.02	3.29	-12.20	5.97
	(4.02)	(7.06)	(4.55)	(5.41)	(4.29)	(18.17)	(17.31)	(19.26)	(14.71)
Coordination of wage-setting	-1.42	4.43 **	-2.07	5.11 ***	-0.22	2.96	3.25	4.48	2.16
	(1.26)	(1.45)	(1.68)	(1.45)	(1.40)	(2.66)	(2.71)	(2.91)	(1.81)
Coordination²	0.12	-0.19	0.10	-0.09	0.07	0.42	-0.40 *	0.29	-0.33 *
	(0.25)	(0.23)	(0.28)	(0.22)	(0.24)	(0.29)	(0.16)	(0.31	(0.15)
Level of bargaining	-3.59 **	2.18	-7.49 ***	-0.12	-7.06 ***	3.08 *	-2.59 **	2.79 *	-2.30 ***
	(1.40)	(2.00)	(1.42)	(1.38)	(1.21)	(1.41)	(0.83)	(1.11)	(0.58)
Level of bargaining²	0.68 **	-0.23	1.11 ***	0.27	1.08 ***	-0.48 *	0.32 **	-0.41 *	0.29 ***
	(0.23)	(0.33)	(0.23)	(0.28)	(0.21)	(0.22)	(0.11)	(0.18)	(0.08)
Interactions	N	N	N	N	N	N	N	N	N
Type of bargaining	N	N	N	N	N	-	-	-	-
Regime dummies	-	-	-	N	N	-	-	-	-
ALMP * Regimes	-	-	-	N	N	-	-	N	N
Constant	14.53 ***	34.88 ***	5.78	22.55 ***	-7.82	5.76	5.13	8.04	10.48
	(3.88)	(4.75)	(4.17)	(5.71)	(4.30)	(12.86)	(10.78)	(12.47)	(8.76)
N	234	217	217	234	234	234	234	234	234
Adj. R^2 / R^2 Within	0.78	0.78	0.77	0.84	0.85	0.29	0.39	0.34	0.45
F	57.43 ***	46.28 ***	51.33 ***	56.86 ***	61.40 ***	136.4 ***	79.67 ***	4366 ***	6394 ***

* p < 0.05, ** p < 0.01, *** p < 0.001, Areg = Pooled OLS with years absorbed, FE = Fixed Effects, N = included

Estimation results on the share of involuntary part-time employment relative to total employment 1993-2011

	(1) Pooled OLS	(2) Areg model A		(3) Areg model B		(4) FE model A		(5) FE model B	
		Women	Men	Women	Men	Women	Men	Women	Men
Strictness temporary contracts	**-0.19 ***	0.14	**-0.28 *****	0.28	**-0.12 ***	-0.37	**-0.29 ***	-0.18	**-0.25 ***
	(0.09)	(0.15)	(0.06)	(0.15)	(0.06)	(0.49)	(0.13)	(0.41)	(0.11)
Strictness dismissals	**-0.54 *****	**-0.69 *****	**-0.30 *****	-0.13	0.09	**-2.05 ***	-0.47	**-2.23 ***	-0.49
	(0.11)	(0.16)	(0.08)	(0.23)	(0.09)	(0.82)	(0.33)	(0.95)	(0.38)
Unemployment benefits (GRR)	**0.09 ***	0.09	0.05	0.09	0.02	0.17	0.07	0.14	0.05
	(0.04)	(0.07)	(0.03)	(0.07)	(0.03)	(0.17)	(0.05)	(0.16)	(0.05)
Tax wedge	-0.25 ***	-0.42 ***	-0.16 ***	-0.20 ***	-0.07 **	0.12	0.05	0.10	0.05
	(0.04)	(0.05)	(0.03)	(0.06)	(0.02)	(0.25)	(0.07)	(0.25)	(0.08)
ALMP spending	0.44	0.28	-0.31	N	N	4.62	2.47 **	N	N
	(1.39)	(2.45)	(0.88)			(3.47)	(0.83)		
Output gap	-0.08 **	-0.12 *	-0.05 *	-0.09	-0.08 ***	-0.07	-0.04 **	-0.08 *	-0.05 ***
	(0.02)	(0.05)	(0.02)	(0.06)	(0.02)	(0.04)	(0.01)	(0.04)	(0.01)
Immigration	-0.19	-0.39	-0.25	-0.31	-0.21	-0.07	0.04	-0.25	0.00
	(0.23)	(0.42)	(0.17)	(0.37)	(0.15)	(0.65)	(0.16)	(0.45)	(0.12)
Public childcare expenditure	-	-0.12	-0.06	-	-	-	-	-	-
		(0.33)	(0.13)						
Centralisation of wage-setting	12.79 ***	11.50 ***	7.64 ***	20.62 ***	9.18 ***	-4.70	0.27	-4.55	0.00
	(1.74)	(2.77)	(1.29)	(3.11)	(1.21)	(6.03)	(2.29)	(6.39)	(2.30)
Centralisation²	-11.81 ***	-11.22 ***	-7.04 ***	-19.44 ***	-8.56 ***	7.67	0.68	5.42	0.41
	(1.42)	(2.38)	(1.04)	(2.64)	(1.05)	(6.30)	(2.01)	(5.89)	(1.95)
Coordination of wage-setting	-0.17	0.05	0.08	-1.38	0.09	-0.76	-0.53	-1.30	-0.68
	(0.46)	(0.71)	(0.33)	(0.79)	(0.36)	(1.73)	(0.41)	(1.52)	(0.39)
Coordination²	-0.09	-0.22	-0.09	-0.08	-0.07	-0.33 *	-0.11 *	-0.26 *	-0.10 *
	(0.09)	(0.13)	(0.06)	(0.13)	(0.06)	(0.16)	(0.04)	(0.12)	(0.04)
Level of bargaining	-1.08 **	-1.37 *	-0.45	-1.73 **	-0.44	-1.52	-0.91 **	-1.09	-0.81 **
	(0.41)	(0.61)	(0.30)	(0.66)	(0.28)	(1.25)	(0.30)	(1.11)	(0.27)
Level of bargaining²	0.19 **	0.25 *	0.08	0.20	0.03	0.24	0.11 **	0.19	0.10 **
	(0.06)	(0.10)	(0.05)	(0.10)	(0.04)	(0.16)	(0.04)	(0.15)	(0.03)
Interactions	-	N	N	N	N	N	N	N	N
Type of bargaining	N	N	N	N	N	-	-	-	-
Regime dummies	-	-	-	N	N	-	-	-	-
ALMP * Regimes	-	-	-	N	N	-	-	N	N
Constant	7.08 ***	12.30 ***	4.71 ***	10.57 ***	2.30 *	5.78	1.59	7.00	1.90
	(1.23)	(1.91)	(0.90)	(2.20)	(0.95)	(11.80)	(3.29)	(11.50)	(3.39)
N	371	343	343	371	371	371	371	371	371
Adj. R^2 / R^2 Within	0.56	0.51	0.54	0.61	0.67	0.36	0.49	0.43	0.52
F	22.13 ***	25.30 ***	18.09 ***	34.37 ***	28.27 ***	28.74 ***	379.6 ***	205.3 ***	8598 ***

* p < 0.05, ** p < 0.01, *** p < 0.001, Areg = Pooled OLS with years absorbed, FE = Fixed Effects, N = included

Estimation results on the share of temporary employment relative to total employment 1993-2011

	(1) Pooled OLS	(2) Areg model A		(3) Areg model B		(4) FE model A		(5) FE model B	
		Women	Men	Women	Men	Women	Men	Women	Men
Strictness temporary contracts	**1.64 ** **	**1.96 ** **	**2.14 *** **	**-1.67 *** **	**-0.93 * **	-0.12	-0.29	-0.29	-0.45
	(0.61)	(0.63)	(0.63)	(0.47)	(0.47)	(0.73)	(0.67)	(0.49)	(0.44)
Strictness dismissals	**2.06 ** **	**1.81 ** **	**1.44 * **	-0.92	-1.03	0.38	-1.77	-0.95	**-2.79 * **
	(0.65)	(0.65)	(0.60)	(0.97)	(0.91)	(0.98)	(1.11)	(0.85)	(1.04)
Unemployment benefits (GRR)	0.21	-0.06	0.31	**0.61 * **	**0.92 *** **	0.23	0.24	0.41	0.35
	(0.25)	(0.33)	(0.30)	(0.28)	(0.25)	(0.24)	(0.24)	(0.27)	(0.27)
Tax wedge	-0.17	-0.27	0.04	-1.03 ***	-0.76 ***	-0.61 **	-0.49 **	-0.40 *	-0.29
	(0.15)	(0.15)	(0.13)	(0.16)	(0.16)	(0.21)	(0.17)	(0.19)	(0.20)
ALMP spending	27.76 ***	29.39 ***	31.68 ***	N	N	7.72	4.28	N	N
	(7.93)	(8.85)	(7.70)			(8.31)	(7.32)		
Output gap	0.04	-0.39 **	-0.31 *	0.11	0.07	0.10	0.04	0.12	0.05
	(0.10)	(0.14)	(0.13)	(0.13)	(0.12)	(0.11)	(0.10)	(0.09)	(0.08)
Immigration	-0.36	-2.12	-0.58	0.72	2.02 *	0.66	0.50	1.17	0.93
	(1.19)	(1.38)	(1.19)	(1.10)	(0.99)	(0.86)	(0.72)	(0.76)	(0.67)
Public childcare expenditure	-	-2.23 *	-1.62	-	-	-	-	-	-
		(1.03)	(0.96)						
Centralisation of wage-setting	19.06	12.31	8.21	29.71 ***	20.27 ***	9.37	19.06	13.94	21.62
	(7.23)	(8.62)	(8.29)	(6.96)	(7.02)	(14.47)	(16.24)	(16.07)	(18.21)
Centralisation²	-21.56 ***	-18.27 **	-10.49	-22.01 ***	-15.14 **	-1.84	-5.08	-5.37	-7.84
	(5.53)	(6.88)	(6.54)	(5.61)	(5.87)	(10.29)	(13.32)	(12.15)	(14.73)
Coordination of wage-setting	-9.97 ***	-5.73 **	-10.90 ***	-11.00 ***	-16.30 ***	-13.24 **	-11.40 **	-10.73 **	-9.25 **
	(1.88)	(1.89)	(1.81)	(2.43)	(2.40)	(3.82)	(3.42)	(3.28)	(3.08)
Coordination²	1.35 ***	1.24 ***	1.38 ***	1.05 **	1.45 ***	0.91 *	0.93 **	0.90 *	0.93 *
	(0.36)	(0.37)	(0.34)	(0.34)	(0.34)	(0.36)	(0.33)	(0.42)	(0.37)
Level of bargaining	-1.56	-2.92	-0.59	-11.16 ***	-5.52 **	1.42	-0.17	0.92	-0.60
	(1.85)	(2.08)	(1.92)	(1.81)	(1.73)	(1.62)	(1.21)	(1.62)	(1.28)
Level of bargaining²	0.21	0.49	0.13	1.46 ***	0.76 **	-0.24	-0.02	-0.18	0.03
	(0.29)	(0.34)	(0.30)	(0.29)	(0.27)	(0.25)	(0.19)	(0.25)	(0.19)
Interactions	N	N	N	N	N	N	N	N	N
Type of bargaining	N	N	N	N	N	-	-	-	-
Regime dummies	-	-	-	N	N	-	-	-	-
ALMP * Regimes	-	-	-	N	N	-	-	N	N
Constant	10.57 *	15.62 ***	6.00	63.98 ***	46.31 ***	33.69 ***	32.87 **	27.62 **	26.94 *
	(5.24)	(5.68)	(5.23)	(6.16)	(5.75)	(9.16)	(10.51)	(9.36)	(11.90)
N	337	313	313	337	337	337	337	337	337
Adj. R^2 / R^2 Within	0.51	0.51	0.50	0.70	0.66	0.29	0.29	0.44	0.40
F	24.02 ***	34.44 ***	30.13 ***	39.74 ***	27.59 ***	313.9 ***	109.8 ***	124.7 ***	625.1 ***

* p < 0.05, ** p < 0.01, *** p < 0.001, Areg = Pooled OLS with years absorbed, FE = Fixed Effects, N = included

Estimation results on full-time employment rate of young adults (relative to 24-29 years old population) 1993-2011

	(1) Pooled OLS	(2) Areg model A		(3) Areg model B		(4) FE model A		(5) FE model B	
		Women	Men	Women	Men	Women	Men	Women	Men
Strictness temporary contracts	**-1.15 ** **	**-1.82 *** **	-0.80	0.58	-0.01	-0.02	**1.19 * **	0.08	**1.16 ** **
	(0.38)	(0.51)	-0.45	(0.48)	(0.46)	(0.55)	-0.49	(0.58)	(0.41)
Strictness dismissals	**2.89 *** **	**2.82 *** **	**2.92 *** **	**6.07 *** **	**3.51 *** **	-0.81	1.02	0.68	1.34
	(0.52)	(0.73)	(0.54)	(0.80)	(0.52)	(2.10)	(1.83)	(1.82)	(2.11)
Unemployment benefits (GRR)	**-0.49 ** **	-0.32	-0.34	-0.35	**-0.60 *** **	**-1.06 * **	**-0.98 * **	-0.93	**-0.92 ** **
	(0.16)	(0.24)	(0.19)	(0.22)	(0.18)	(0.42)	(0.39)	(0.34)	(0.30)
Tax wedge	-0.32 **	-0.14	-0.48 ***	0.27	-0.58 ***	-0.70	-0.34	-0.39	-0.14
	(0.10)	(0.14)	(0.13)	(0.16)	(0.15)	(0.49)	(0.41)	(0.36)	(0.32)
ALMP spending	-26.46 ***	-33.63 ***	-27.92 ***	N	N	21.88	1.39	N	N
	(5.84)	(9.04)	(6.08)			(14.01)	(9.02)		
Output gap	0.61 ***	0.87 ***	0.62 ***	0.82 ***	0.70 ***	0.46 ***	0.67 ***	0.44 ***	0.66 ***
	(0.09)	(0.19)	(0.13)	(0.15)	(0.14)	(0.08)	(0.09)	(0.06)	(0.09)
Immigration	0.48	-0.63	-0.22	-1.97	0.68	6.05 ***	2.11 *	4.84 **	1.82
	(0.90)	(1.29)	(0.87)	(1.30)	(0.97)	(1.51)	(0.94)	(1.39)	(1.10)
Public childcare expenditure	-	1.21	0.61	-	-	-	-	-	-
		(1.01)	(0.81)						
Centralisation of wage-setting	-8.86 *	17.41 *	-26.92 ***	19.94 *	-34.57 ***	16.30	-20.85	8.69	-21.99
	(4.40)	(8.48)	(6.94)	(7.86)	(6.07)	(10.31)	(11.75)	(8.87)	(11.85)
Centralisation²	16.46 ***	-7.23	37.16 ***	-8.28	32.16 ***	6.44	15.01	8.02	14.80
	(4.25)	(7.92)	(6.15)	(6.84)	(5.50)	(7.79)	(10.89)	(7.47)	(11.21)
Coordination of wage-setting	4.31 **	-1.14	5.93 ***	0.38	4.82 *	-5.22	5.52	-5.70	5.91 *
	(1.54)	(2.21)	(1.77)	(2.32)	(2.08)	(4.28)	(3.29)	(3.49)	(2.63)
Coordination²	0.00	0.89	-0.29	0.63	-0.76	-0.19	-0.30	-0.15	-0.29
	(0.34)	(0.49)	(0.44)	(0.48)	(0.40)	(0.60)	(0.36)	(0.44)	(0.32)
Level of bargaining	-6.60 ***	-7.04 ***	-7.02 ***	-5.02 **	-2.03	0.22	5.82 **	0.20	5.60 **
	(1.21)	(1.76)	(1.86)	(1.79)	(1.62)	(1.95)	(1.78)	(1.67)	(1.68)
Level of bargaining²	1.08 ***	1.34 ***	0.95 **	0.91 **	0.41	-0.05	-0.72 **	-0.04	-0.69 **
	(0.21)	(0.30)	(0.32)	(0.28)	(0.25)	(0.24)	(0.24)	(0.21)	(0.23)
Interactions	N	N	N	N	N	N	N	N	N
Type of bargaining	N	N	N	N	N	-	-	-	-
Regime dummies	-	-	-	N	N	-	-	-	-
ALMP * Regimes	-	-	-	N	N	-	-	N	N
Constant	16.46 ***	71.45 ***	104.1 ***	53.13 ***	105.3 ***	77.59 **	75.90 ***	66.27 ***	68.36 ***
	(4.25)	(5.86)	(5.09)	(8.31)	(7.66)	(22.98)	(16.02)	(16.41)	(15.11)
N	311	284	284	311	311	311	311	311	311
Adj. R^2 / R^2 Within	0.45	0.35	0.48	0.48	0.61	0.52	0.58	0.60	0.60
F	18.90 ***	12.81 ***	18.86 ***	15.05 ***	20.52 ***	73.74 ***	127.0 ***	4*10^4 ***	446.0 ***

* p < 0.05, ** p < 0.01, *** p < 0.001, Areg = Pooled OLS with years absorbed, FE = Fixed Effects, N = included

Estimation results on part-time employment rate of young adults (relative to 24-29 years old population) 1993-2011

	(1) Pooled OLS	(2) Areg model A		(3) Areg model B		(4) FE model A		(5) FE model B	
		Women	Men	Women	Men	Women	Men	Women	Men
Strictness temporary contracts	**-0.73 ****	**-0.99 ***	**-0.46 ****	0.23	-0.02	**-1.09 ***	**-0.85 ****	**-1.06 ***	**-0.85 ****
	(0.26)	(0.43)	(0.15)	(0.32)	(0.15)	(0.40)	(0.27)	(0.40)	(0.28)
Strictness dismissals	**-0.72 ***	**-1.15 ***	**-0.71 *****	0.33	-0.13	**-3.33 ***	-1.77	**-3.02 ***	**-1.71**
	(0.32)	(0.53)	(0.15)	(0.39)	(0.15)	(1.27)	(1.02)	(1.36)	(1.04)
Unemployment benefits (GRR)	-0.11	-0.14	-0.05	**-0.49 *****	-0.06	**0.39 ***	0.26	**0.41 ***	**0.29 ***
	(0.12)	(0.18)	(0.06)	(0.11)	(0.04)	(0.16)	(0.13)	(0.18)	(0.13)
Tax wedge	-0.24 **	-0.44 ***	-0.21 ***	-0.08	0.03	0.43 **	0.10	0.45 **	0.09
	(0.09)	(0.13)	(0.04)	(0.10)	(0.04)	(0.12)	(0.10)	(0.14)	(0.12)
ALMP spending	4.50	2.96	2.39	N	N	0.31	3.69	N	N
	(3.73)	(6.83)	(2.08)			(4.48)	(2.41)		
Output gap	-0.14 *	-0.45 **	-0.17 ***	-0.27 **	-0.13 ***	-0.03	-0.04	-0.04	-0.04
	(0.06)	(0.16)	(0.05)	(0.09)	(0.04)	(0.04)	(0.03)	(0.04)	(0.03)
Immigration	2.56 ***	2.84 *	0.10	1.10	-0.07	-0.39	0.23	-0.64	0.09
	(0.67)	(1.11)	(0.32)	(0.66)	(0.25)	(0.90)	(0.35)	(0.89)	(0.42)
Public childcare expenditure	-	-4.95 ***	-0.72	-	-	-	-	-	-
		(1.16)	(0.37)						
Centralisation of wage-setting	-3.70	-36.67 ***	0.73	-9.23 *	10.83 ***	13.16 *	15.33 ***	11.73	15.87 ***
	(4.41)	(8.11)	(2.91)	(4.42)	(1.94)	(5.27)	(2.67)	(5.74)	(3.26)
Centralisation²	3.85	33.75 ***	-3.34	5.36	-10.73 ***	-7.11	-4.70	-6.57	-4.78
	(3.55)	(7.25)	(2.52)	(3.95)	(2.11)	(8.95)	(3.54)	(8.83)	(3.28)
Coordination of wage-setting	-1.47	-0.29	0.01	-2.16	-0.52	4.96 *	-1.21	4.73 *	-1.15
	(1.08)	(1.79)	(0.80)	(1.21)	(0.72)	(1.96)	(1.40)	(1.96)	(1.46)
Coordination²	0.39	0.20	-0.31	-0.88 **	-0.40 **	-0.75 *	-0.35	-0.75 *	-0.33
	(0.30)	(0.47)	(0.19)	(0.29)	(0.13)	(0.30)	(0.18)	(0.30)	(0.18)
Level of bargaining	3.34 **	3.89 *	1.71 *	1.25	0.21	-3.09	-2.16 *	-3.07	-2.26 *
	(1.10)	(1.74)	(0.60)	(1.31)	(0.55)	(1.62)	(0.81)	(1.57)	(0.86)
Level of bargaining²	-0.62 **	-0.70 *	-0.25 *	-0.20	-0.06	0.47 *	0.30 *	0.47 *	0.31 *
	(0.21)	(0.32)	(0.11)	(0.21)	(0.09)	(0.21)	(0.13)	(0.20)	(0.14)
Interactions	N	N	N	N	N	N	N	N	N
Type of bargaining	N	N	N	N	N	-	-	-	-
Regime dummies	-	-	-	N	N	-	-	-	-
ALMP * Regimes	-	-	-	N	N	-	-	N	N
Constant	12.00 ***	26.75 ***	8.59 ***	17.44 ***	2.90	6.00	6.62	5.21	7.18
	(3.14)	(4.89)	(1.53)	(5.09)	(2.12)	(7.77)	(5.36)	(8.11)	(6.07)
N	311	284	284	311	311	311	311	311	311
Adj. R^2 / R^2 Within	0.56	0.53	0.72	0.81	0.81	0.42	0.52	0.44	0.53
F	23.44 ***	22.97 ***	36.91 ***	81.80 ***	53.50 ***	47.87 ***	40.04 ***	397.2 ***	1336 ***

* p < 0.05, ** p < 0.01, *** p < 0.001, Areg = Pooled OLS with years absorbed, FE = Fixed Effects, N = included