



Working Paper

Patterns of Non-employment

Labor Market Institutions and Employment
Performance of Social Groups

Thomas Biegert

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Social Groups

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Editorial Note:

Thomas Biegert is a PhD candidate at the Centre for Doctoral Studies in Social and Behavioral Sciences (CDSS) at the University of Mannheim. He obtained his diploma in social sciences at the University of Mannheim. Currently he is a researcher in the DFG-project Non-Employment in Europe at the Mannheim Centre for European Social Research (MZES). His main interests are labor market sociology, social stratification, and comparative welfare state research.

Abstract

Increasing labor market participation to a high level is seen as a necessary means for international economic competitiveness and sustainable financing of the welfare state. One of the major goals of labor market research is therefore to explore why certain social groups are less likely to be employed. While most research focuses on the determinants of unemployment, this study includes also inactive persons, thus examining the total non-employed population. The paper argues that labor market institutions interact with individual characteristics and resources, thereby shaping nationally specific patterns of non-employment. Following a social structural approach, it analyzes the institutional effects on individual employment performance in 14 countries using the European Labour Force Survey. Non-employment patterns are disaggregated by gender, age group and educational level. Institutional arrangements are modeled by including macroeconomic indicators into pooled cross-sectional models with country, country-education level, country-age group, and year fixed-effects. Results not only indicate the important role of the institutional context in forming absolute levels of non-employment, the observed group differences also underline that labor market institutions shape the social composition of non-employment. Furthermore, institutional arrangements commonly associated with inactivity have an impact on overall non-employment. The evidence for institutional interactions supports the need for developing comprehensive models of national employment regimes.

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1. Introduction¹

Recent years have seen many countries aiming to increase overall employment beyond simply lowering unemployment. This is in consequence to the now widespread insight that in order to improve economic performance and to sustainably finance the welfare state in the light of recent structural and demographic challenges, the inactive population should participate in the labor market. Comparing unemployment to total non-employment – i.e. unemployment and inactivity combined – both display widespread variations across Europe (see Fig. 1a). Stories of success and failure concerning the battle against unemployment can be seen in a new light when economic inactivity is taken into account (Erlinghagen & Knuth 2010). The literature on employment performance of different economic systems emphasizes the impact of institutional settings. While the impact of labor market institutions on unemployment is subject to many analyses, though these are far from corroborated (Baker et al. 2005, OECD 2006), the institutional consequences for inactivity levels can be seen as under-researched (Amable et al. 2010). This paper therefore seeks to fill this gap and analyze the relationship between institutional settings and all forms of non-employment.

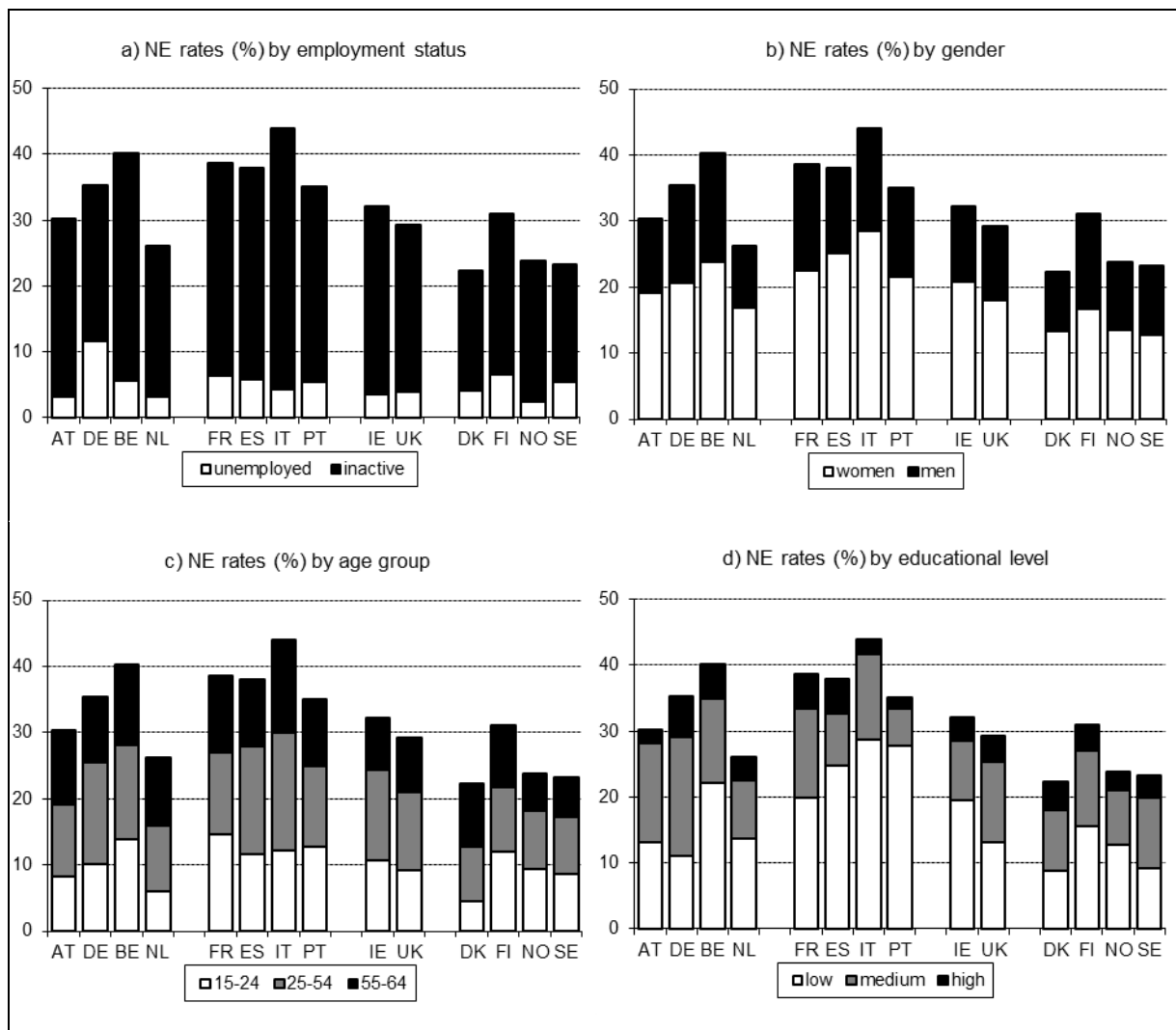
Not only absolute levels but also the social distribution of non-employment differs markedly between European countries (see Fig. 1b–1d). Sociological research on individual labor market performance centers on characteristics such as education, gender, and age (e.g. Becker 1975, Mincer 1974). Nationally distinct patterns of non-employment indicate that idiosyncratic institutional settings foster more or less the labour market integration of different social groups (Buchholz et al. 2009, Häusermann & Schwander 2009). Individual characteristics and the institutional context interact in shaping opportunities and restrictions (Bertola et al. 2007, Genre et al. 2005). Hence, it is crucial not only to include all non-employed persons but to go beyond analysis of aggregate levels in order to uncover whether institutional effects vary across socioeconomic groups.

Regarding the variation in non-employment, a clustering of country along the established regime typologies of welfare states (Esping-Andersen 1990) and economic systems (Amable 2003, Hall & Soskice 2001) seems plausible (see Fig. 1b–1d). There are obvious similarities in the absolute levels and the social composition of non-employment within Continental Europe, the Mediterranean countries, Anglo-Saxon states, and the Nordic countries. However, the number of outliers indicates the need to further disentangle these regime clusters. The paper follows macroeconomic approaches that analyze the relationship between aggregate unemployment rates and single institutional arrangements such as unemployment benefits, employment protection, labor taxes, and union power (e.g. Blanchard 2006, Destefanis & Mastromatteo 2010, Layard et al. 2005, Nickell 1997, Nickell et al. 2005, OECD 1994). More recent efforts have accentuated institutional interactions, i.e. the dependence of single

¹ This paper is the result from research conducted in the project „Non-employment in Europe: A Comparative Analysis of Social Risk Groups in Household Contexts” (directed by Bernhard Ebbinghaus) financed by the German Research Foundation (DFG). Previous versions were presented at the 2010 ISA world congress in Gothenburg and at the Center for Doctoral Studies in Social and Behavioral Sciences. The author is grateful for comments from Bernhard Ebbinghaus, Michael Kühhirt, Nadine Reibling, and the two anonymous reviewers of the MZES working paper series.

institutions' effects from the context of other institutions (Bassanini & Duval 2009, Belot & van Ours 2004). This paper expands on the literature not only by taking all forms of non-employment into account and by disaggregating institutional effects on non-employment according to social group. Besides including the inactive, the analysis furthermore accounts for institutional arrangements such as incapacity benefits and social assistance, which are primarily associated with inactivity but have been shown important for overall labor market dynamics (Clasen et al. 2006, Erlinghagen & Knuth 2010, Lemieux & Milligan 2008).

Figure 1: Non-employment Rates in 14 European Countries by Employment Status and Social Distribution (2006)



Source: EU LFS, own calculation.

The paper proceeds as follows: Section 2 is dedicated to the theoretical background, looking at all forms of non-employment instead of focusing on the unemployed only. I elaborate on an institutionalist

approach to individual non-employment and on the specific mechanisms as to how institutions affect labor market activity in general and of different socio-demographic groups. Section 3 discusses methodological advantages and shortcomings of the European Labour Force Survey (EU LFS), macroeconomic indicators and pooled cross-sectional analysis with country, country-education level, country-age group, and year fixed effects. Results are presented and discussed in section 4, upon which section 5 concludes.

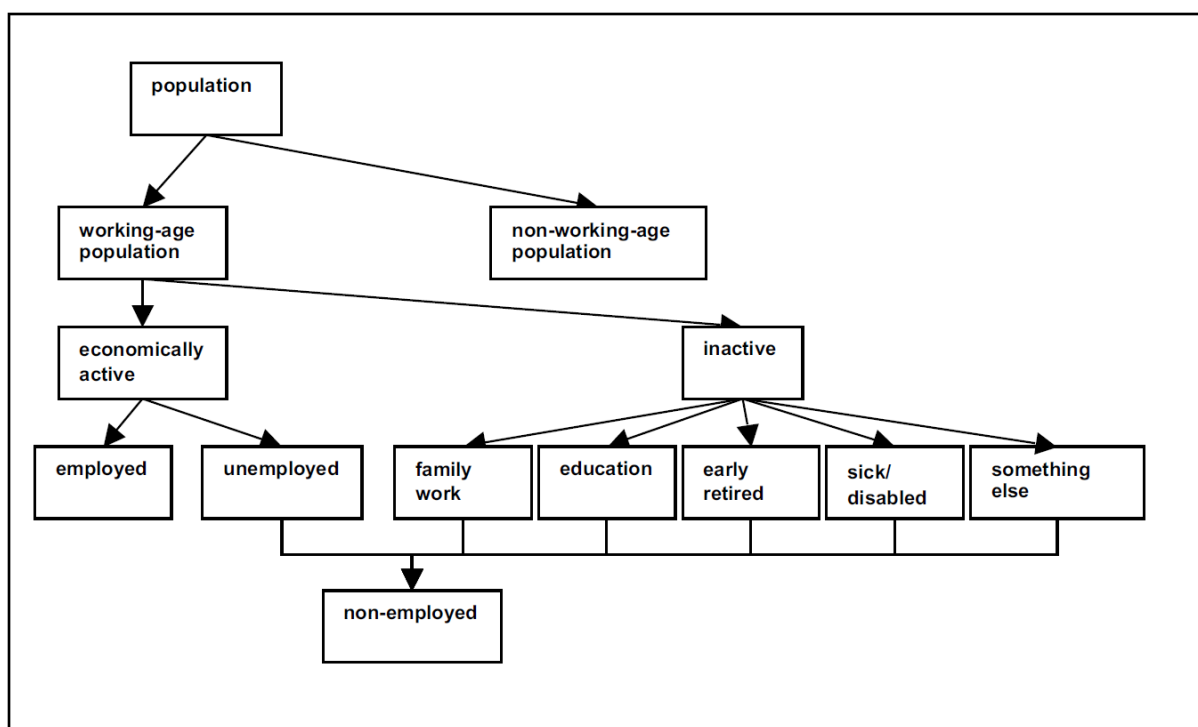
2. Theoretical Background

2.1 Unemployment, Inactivity, and Non-employment

European policy makers no longer only focus on lowering unemployment but also seek to increase labor market participation of all societal groups – a paradigm shift most visible in the employment goals of the European Union’s Lisbon Agenda and the ensuing Europe 2020 strategy.² This is also manifested in the emphasis on activation in many national reform projects, for instance the German Hartz reforms. The rationale behind this policy shift is that increasing gainful employment reduces passive social benefit demands on the state and makes welfare states more sustainable as more employed citizens contribute. Higher employment rates also improve economic competitiveness. Moreover, being in work promotes individuals’ social integration and inclusion. These positive activation effects not only apply to the unemployed, but also to the inactive i.e. to all non-employed persons.

Besides following this policy shift in recent years, there are statistical and theoretical considerations in favor of the concept of non-employment. The standard criterion to distinguish the unemployed and the inactive is, that although both are currently without a job only the unemployed have been actively seeking one in the past four weeks (International Labour Office 1990), whereas inactivity consists of various subcategories such as house work (caring responsibilities), being in education, disability, or early retirement (see Fig. 2). While Clark and Summers (1982) argue that there is no behavioral distinction between the unemployed and inactive, Flinn and Heckman (1983) contest this view by finding higher exit rates from unemployment towards employment than from inactivity (although their findings cannot refute the allegation of arbitrariness of such a demarcation). Policy recommendations based on studies deliberately neglecting the large part of the inactive population heavily rely on the assumption that individuals are permanently inactive without any chance for activation. Amable and colleagues’ (2010) recent cross-national comparative study contradicts this assumption as it shows significant effects of institutions on inactivity rates. In fact, some arrangements seem to affect inactivity even more than unemployment.

² The EU set employment rate goals of 70% for all EU countries in the Lisbon strategy and raised the bar to 75% in the Europe 2020 strategy. In more detail these targets display a growing concern for the social distribution of work by emphasizing labor market participation of disadvantaged groups such as women, elderly, or young persons (European Commission 2010, European Council 2000).

Figure 2: Labor Market States

Source: Clasen et al. 2006.

A one-sided focus on unemployment leads to over- and underestimations of change. As Murphy and Topel (1997) show, the increase in US joblessness is not captured by unemployment rates since the main component of this change is the non-participation of prime-aged men. Hence, a policy can seemingly decrease unemployment due to outflows towards employment as well as towards inactivity. Or employment growth might not be recognized because of inflows to unemployment from inactivity, while the unemployment rate stays the same. In fact, the absolute levels of non-employment show a different picture than those of unemployment in cross-national comparison (see Fig. 1a). Erlinghagen and Knuth (2010) thus pose the question whether unemployment has to be seen as an institutional construct, arguing that the German unemployment rates do not compare as high when considering that in other countries many non-employed identify themselves as permanently sick or disabled (Erlinghagen & Knuth 2010).

Also underlying the statistical distinction of unemployment is the assumption that inactive persons are voluntarily without work and thus are not part of aggregate labor supply. The notion of voluntary unemployment is not problematic per se but it is being treated as unchangeable. In order to be accounted for in the dichotomous analysis of employment and unemployment, movers from inactivity to employment would have to be unemployed first. Furthermore, labor market attachment should be considered more as fine-grained degrees of inclusion than a binary category of unemployed/inactive. Discouraged workers, for instance, may not actively look for a job because they believe that work is not available, but they would nevertheless take a job if offered.

Some researchers suggest the distinction of more than two transition states (Brandolini et al. 2006, Jones & Riddell 2006, Marzano 2006), though more states can obviously not suppress the problem of over- and underestimation of change. More importantly, from a theoretical point of view increasing the number of categories would still stand on the assumption that a person's expectation towards getting a job is inalterable. Burchardt and Le Grand (2002) show for the British labor market that after inclusion of various layers of constraints such individual characteristics, labor market experience, place of residence, and household composition no more than roughly ten percent of non-employment is unambiguously voluntary. Thus almost every person is a potential worker if only opportunities and restrictions fit his/her predispositions. This study therefore follows Gregg and Wadsworth's (1998) proposition to perceive the non-employed as distributed along a continuum, which is determined by individual characteristics important for labor market attachment, while the institutional setting affects how these individual factors play out.

2.2 Individual Non-employment in Labor Market Regimes

Matching models consider the question of who is employed and who is not as part of a two-sided process: employers seek workers with the needed skills and appropriate wage expectations, while workers search for jobs with acceptable pay and work conditions. When the two sides of labor demand and labor supply meet, individuals obtain employment (Gangl 2004, Sørensen & Kalleberg 1981). Yet, this matching of demand and supply is profoundly influenced by the institutional settings in which labor markets are embedded (Granovetter 1985). The OECD observes that "on average, changes in policies and institutions appear to explain almost two-thirds of non-cyclical unemployment changes over the past two decades" (OECD 2006: 208). Following North (1990: 1) institutions can be seen as "rules of the game in a society". More precisely, institutions structure the strategic interactions of actors "by affecting the range and sequence of alternatives on the choice-agenda or by providing information and enforcement mechanisms that reduce uncertainty about the corresponding behavior of others and allow 'gains from exchange', thereby leading actors toward particular calculations and potentially better social outcomes" (Hall & Taylor 1996: 945). Applied to the labor market context institutions affect actors utility and cost calculations and expectations about getting a job and associated wage gains as well as the potential benefits of employing somebody (Borjas 2005). Hence, the outcome of the matching of labor supply and labor demand is highly structured by institutions.

Studies on the relationship between labor market institutions and employment performance abound, (e.g. Amable et al. 2010, Bassanini & Duval 2009, Blanchard 2006, Destefanis & Mastromatteo 2010, Nickell 1997, Nickell et al. 2005). Since the prior concern of these macroeconomic studies is the overall welfare of national economies, they are mostly interested in the institutional impact on aggregate employment levels. Studies on employment performance of specific groups, such as birth cohorts or age groups, mainly consider the aggregate level of participation rates (e.g. Genre et al. 2005, Balleer et al. 2009). Adopting a sociological perspective, this study leaves the aggregate level and focuses on the social stratification of the likelihood of achieving different positions. Arguing from the demand side,

jobs generally require specific skills and characteristics, while on the supply side, these specifics determine individuals' expectations and their willingness and ability to take on a job. The matching process is thus also structured by individual characteristics. Based on the idea of matching jobs and workers, incentives or disincentives provided by institutions are highly dependent on an individual's endowment. Macro-level studies therefore run the risk of misinterpreting the ways in which institutions affect employment performance.

Labor market research on the micro level offers theoretically advanced and empirically corroborated efforts about which factors are most important. This study will not contribute to the discussion on which social mechanisms cause social stratification on the labor market. Its prime interest is how institutions affect different social groups. Therefore, I only briefly introduce the most salient factors.

Although female employment participation has risen significantly all over the Western world, there are still big gender differences (Daly 2000, see Fig. 1b). Different schools of thought trace this gender gap back to either discrimination by employers or actual productivity losses due to childbirth and caring obligations (Goldin & Rouse 2000, O'Neill & Polachek 1993). Employment performance varies a lot between age groups (see Fig. 1c). Research on age differences on the labor market argues that younger workers are disadvantaged because of their lack of work experience (Mincer 1974). Whereas older workers are often seen as inflexible, employers hesitate to further invest in their human capital as the estimated remaining employment period is considered to be too short (Taylor & Walker 1994). Educational attainment is still considered the best predictor of a person's labor market success (Shavit & Müller 1998). According to human capital theory, the lower the level of education, the higher is the risk to be without employment (Becker 1975). Figure 1d shows however that this relationship varies in strength cross-nationally.

The personal and social resources and their effect on labor market performance tie in with research on "new social risk" groups (Taylor-Gooby 2004, Bonoli 2006). Generally, they are considered as "risk" groups because they have certain characteristics, which lower their competitiveness in the labor market. Low educated persons, the youth and the elderly, women, and single parents are prime examples. As welfare states fail to provide a sufficient secure income for these groups, being in employment is a prerequisite for avoiding poverty. Of course, these social risk characteristics often overlap, which usually increases individual risks even further. Evidently, the institutional context of the labor market moderates the severity of these risks (DiPrete 2003). It is the interaction of personal and social resources of a person and the opportunities and restrictions given by the institutional context that affect employment performance. As Figure 1 shows, this results in a variety of patterns of non-employment, i.e. different levels of absolute non-employment across nations as well as the different socio-demographic composition. The analysis will emphasize disadvantaged groups as to how they are affected by labor market institutions. In line with the theoretical discussion above, I specifically look at differences between men and women, educational levels, and age groups.

2.3 Labor Market Institutions and Non-employment of Social Groups

The comparative analysis of the institutional impact on non-employment of social groups, which takes individual characteristics into account, promises to reveal more detailed insights than approaches using aggregate indicators only. Theoretical expectations are often ambiguous for aggregate employment rates, predictions for group-relative effects of labor market institutions can be considerably more precise (Bertola et al. 2007). In contrast to the treatment of unemployment and inactivity as separate but homogenous categories, this study follows an alternative approach by conceiving non-employment as a continuum in which closeness to the labor market is indicated by social group membership. This section elaborates on the theoretical effects of labor market institutions in general and in the particular social groups.

Following Schmid (2002), though changing the focus from unemployment to non-employment, I define employment systems as “the ensemble of institutions and related policies, which simultaneously determine the levels of [...] [non-employment] and employment.” The paper focuses on those parts of the employment system that work at the very heart of the labor market and have been subject to reforms or discussion in recent efforts to raise employment. Most research focuses on the “usual suspects” among institutional arrangements: employment protection legislation (EPL), unemployment benefit generosity, taxes, union power, and wage bargaining coordination, these variables are integral part in virtually all quantitative macro-level analyses of employment performance as their impact on employment is rather theoretically straightforward (Layard et al. 2005). Empirically the picture is not as clear: quantitative studies have found positive or negative or no effects for almost all of the institutional arrangements in discussion (e.g. Blanchard 2006, Nickell 1997, Nickell et al. 2005, OECD 2006). With the increasing role activation plays in policy debates, active labor market policies (ALMP) are prominently featured as well (Amable et al. 2010, Nickell 1997). Economists’ analyses, which try to get a full grasp on the impact of the whole economy, sometimes also include institutions attached to the capital and product market (Baccaro & Rei 2005, Amable et al. 2010) since the adaptability of national economies to economic cycles or innovations has a major impact on labor demand.

The prevailing focus on unemployment obscures the view on institutional arrangements closer related to inactivity. Concerning welfare benefits apart from unemployment payments, there is evidence for effects in respect to the level of disability and incapacity pensions (Erlinghagen & Knuth 2010, Faggio & Nickell 2005) as well as of social assistance (Lemieux & Milligan 2008). The impact of the availability of public child care facilities on female employment has been stressed numerous times (Daly 2000, Stier et al. 2001). However, these institutional arrangements are often studied in isolation. As Ebbinghaus (2006) shows for the case of early retirement, looking at single arrangements obscures the view on alternative pathways out of work. This study therefore aims at joining the “usual suspects” with arrangements that come into the picture when we take all non-employed groups into account.

The notion of “alternative pathways” highlights institutional interactions: the effects of single institutions are highly dependent on the characteristics of other co-existing institutions (Bassanini & Duval 2009). In the area of welfare benefits, the literature emphasizes the substitutive function between social poli-

cies (Ebbinghaus 2006, Erlinghagen & Knuth 2010). In Hall and Soskice's varieties of capitalism approach, complementarities between single arrangements render the whole production system more stable by increasing its effectiveness (Hall & Soskice 2001). The interplay of welfare benefits and employment protection lies at the heart of the discussion about the concept of "flexicurity", that is flexibility and security (Wilthagen 1998, 2005). In order to get a full grasp on institutional effects on employment performance, institutional interactions have to be taken into account.³

In the following I will discuss whether and how these institutional arrangements have an impact on individual non-employment. I formulate expectations regarding the overall effects and differences across social groups. Since current macroeconomic theory does not always provide clear expectations for specific social groups but rather argues from an insider/outsider perspective⁴ or emphasizes low and high attachment to the labor market, I apply these expectations to those groups who usually are considered outsiders and less attached to the labor market, namely younger and older workers, women, and low educated individuals. I broadly assign the institutions to two categories: (1) institutions providing income security and public support, and (2) institutions regulating labor and producer markets. Institutions of the first category are often assumed to have primarily supply side effects while the latter affect labor demand, though this distinction is not always as clear cut as most arrangements have – at least indirectly – an impact on the other side. Furthermore, labor demand and labor supply interact which makes a clear allocation of effects even harder.

Income Security and Support

Generous benefit levels and long durations of entitlement are seen to decrease people's incentives to work thereby reducing labor supply (Layard et al. 2005). The provision of high living standards without having to work increases the reservation wage. This in turn raises real wages and thereby decreases labor demand. In order to finance benefits, taxes and social security contributions further burden labor

³ There is a large number of other macro-level factors being discussed as crucial determinants of employment performance. First and foremost, macroeconomic developments and shocks, variance in productivity, or the structure of the labor market are often made out to be decisive for international differences. Furthermore, other institutional arrangements, such as the educational system or aspects of the production system such as corporate governance or central bank independence are center of many studies. However, this paper aims to take a look at institutional impact at the very heart of the labor market, thus the mentioned factors are not of prior concern. Instead of introducing a large number of secondary variables, I use statistical methods to assure that the effects of interest are not conflated by the omission of these variables.

⁴ Recent literature on policy changes in Western countries is concerned with the dualization of the labor market and emphasizes theories on the gap between insiders and outsiders (e.g. Emmenegger et al. 2011, Palier 2010). Since social group characteristics to a large extent determine who is an insider and who is an outsider, predictions from these approaches come in handy when we want to derive expectations about the social differentiation in institutional impact (Häusermann & Schwander 2009). However, the paper does not follow this approach although it might appear similar to the distinction of employment and non-employment at first glance. The insider/outsider distinction is not regarding actual employment but rather distinguishing two categories of (potential) workers according to their labor market attachment. The specific institutional context is a priori very much intertwined with the question of membership in the two categories. This paper wants to start at the more basic individual characteristics and then see to what position in the employment/non-employment spectrum they lead in interaction with the institutional context. Despite the dichotomous notion of non-employment/employment the approach of this paper is based on the assumption that non-employment – and employment for that matter – can be seen as a continuum in which positions are assigned according to individual characteristics, how they determine labor supply, and how they match labor demand.

costs, this further amplifies the effect. Thus higher benefit levels should lower net employment. From an insider-outsider perspective, high benefit levels strengthen union bargaining strategies and thereby indirectly reduce employment rates of the most vulnerable groups (Bertola et al. 2007). The most vulnerable being the ones with the weakest labor market attachment, i.e. low educated, women, older individuals or those with low work experience. There are also arguments for employment increasing effects of benefits: Higher payments with longer duration allow jobseekers to search for better job matches, thereby decreasing the probability of future separations (Gangl 2004).

Most research focuses on unemployment insurance benefits (Howell & Rehm 2009) which should affect persons closer to the labor market more strongly since eligibility comes only with prior employment. Since individuals have to become eligible for unemployment benefits, high levels could provide a positive incentive for labor market participation (Genre et al. 2005). The examination of non-employment as a whole underlines that other potential benefit systems need to be considered in order to assess the real level of decommodification, i.e. the degree of independence from labor market income. Social assistance or minimum income schemes, understood as an in most cases unconditional publicly provided benefit, is regarded the lowest benchmark of wage comparison. As an incentive to stay out of work these schemes are of special concern for labor market participation of those who expect to be working in low wage jobs, particularly low educated persons. Disability pensions or incapacity benefits are provided to those who are considered incapable to earn an appropriate income because of their disabilities. Erlinghagen and Knuth (2010) explain the relatively large number of disability pension beneficiaries in the United Kingdom with the rather strict access to unemployment benefits compared to the ease with which one can become eligible for disability benefits. The inclusion of all these institutional arrangements becomes all the more important considering their potentially substitutive effects (see below).

Following the successful example of Denmark and the recommendations of the EU Employment Strategy all EU member states have introduced at least some form of activation (European Commission 2006, OECD 2007). The concept of “mutual obligations” establishes specific conditions for welfare benefit recipients: if they cannot proof a certain number of job search attempts or do not attend training measures, they have to expect cutbacks in their benefits. Activation is not merely achieved by setting disincentives but also through the provision of services. Welfare states try to “activate” non-employed citizens by offering different measures of ALMP, i.e. labor market retraining, job search assistance, direct job creation, and employment subsidies. There are distinct measures targeting the employment chances of different social groups, e.g. youth measures or programs for lone mothers, which correspondingly should affect labor market participation of these groups (Kluve 2006). Lacking more detailed indicators, this study can only look at the overall impact of ALMP, expecting that disadvantaged groups will profit more from these measures because they are generally more often targeted. The same argument pertains to the unemployed in comparison to inactive persons.

While ALMP aim to smooth transitions into the labor market, the provision of care facilities might render persons able to take on a job in the first place. Childcare facilities or assistance for the care of

older family members relieve individuals from personal burdens and should therefore increase labor market participation, particularly of women as they are still the primary caregivers in Europe (Thévenon 2008).

Regulation of Labor and Production

Institutions that primarily affect labor demand shape opportunities and restrictions on the labor market mainly by having an impact on the adaptability and flexibility of national economies. Employment protection legislation (EPL) determines how easy or difficult it is to hire and fire employees, which reduces the flow in and out of the labor market. Although these effects might cancel each other out labor market flexibility is reduced. The decreased turnover affects those with rather weak labor market attachment, i.e. workers with lower experience, the low skilled, and women (Esping-Andersen 2000). On the other hand, because EPL benefits workers already positioned in the labor market by impeding layoffs, higher levels should increase employment of older workers (OECD 2006). Similarly to unemployment benefits, high protection levels could also be an incentive to take on a job (Genre et al. 2005). Although many studies cannot find a significant effect of EPL on the total population, social group membership is crucial and social disaggregation might shed new light on this.

Depending on their institutionalized role, the social partners (employers and unions) can regulate labor market processes. Powerful unions are able to push wages above market-clearing levels, thereby lowering overall employment, while concentrating losses on outsiders, younger persons, the low educated, and women (Genre et al. 2005, Layard et al. 2005). Furthermore, while centralized or coordinated bargaining might hamper individual firms' ability to cope with precarious situations, it is often seen as being employment friendly as unions need to internalize detrimental effects and therefore might be willing to constrain their demands (Calmfors & Driffill 1988).

Among regulatory rules of markets adjacent to the labor market, product market regulation (PMR) has a fairly direct effect on labor demand. By keeping new firms from entering the market, PMR decreases competition on the product market and impedes an economy's flexibility, which lowers demand for new employees. Amable and colleagues (2010) argue that product market regulation might protect low-skilled workers as it reduces competition in some declining activities, thus I expect employment decreasing effects to be weaker for individuals with low education.

Finally, labor taxes are part of the labor market regulation regime but also directly connected to the levels of social security. Moreover, they affect both labor demand and the supply side because they increase labor costs for employers yet also lower employees' net earnings. They drive a wedge between what employers pay and what employees receive, thereby decreasing work incentives. On the other hand, they might raise participation, in order to keep income levels constant, for instance among low-income couples (Genre et al. 2005).

Institutional Interactions

From a multitude of potential interdependencies between labor market institutions this paper chooses to concentrate on two specific areas of institutional interactions that promise to be a fruitful addition to the analysis of determinants of non-employment: Substitution effects between different benefit systems and interactions connected to the prominent “flexicurity” debate.

Different sources of welfare benefits can replace each other if no labor market income is acquired. For instance, in the absence of unemployment benefits – be it because of generally low levels or strict access regulations – other benefit systems should increase in importance: Higher levels of disability benefits or social assistance should raise non-employment more strongly than with generous unemployment benefits. Since theory predicts stronger effects of the various benefit systems for those more remote from the labor market, substitutive effects should also be more relevant to them than to those with better job expectations. Accordingly, Faggio and Nickell (2005) find a high proportion of unskilled individuals among those claiming incapacity benefits in the United Kingdom.

Another area of institutional interdependence takes place between benefits and labor market regulations. The interaction becomes obvious when considering differences in success of cutting back welfare benefits: Generally low or conditional benefit levels should increase labor supply, thus lowering wage levels, which consequently leads to higher net employment. Yet, this depends from the rigidity of the labor market. If high employment protection prevents employees from being fired, employers will have to pay above equilibrium wages, and no new jobs can be created (Boeri & van Ours 2008). This argument lies at the heart of the “flexicurity” discussion. How can a country with very high benefit levels like Denmark perform so well in terms of employment rates? Most experts agree that it is the rather relaxed employment protection legislation that enables individuals without work to re-enter the labor market smoothly while the high benefit levels ensure continuity in terms of living standards, thereby creating employment and income security instead of mere job security (Wilthagen 1998, 2005).⁵ The existence of advanced ALMP fosters easy transitions back into employment (Madsen 1999). Theoretically, individuals with lower labor market attachment should be affected more strongly by “flexicurity”: they should profit most from newly created jobs and have higher incentives to stay out of work when benefits are generous and labor market protection is strict.

⁵ “Flexicurity” is a concept with a multitude of dimensions and facets and can hardly be reduced to the mere interaction between benefits and employment regulation. However, this aspect is of particular importance to the content of this paper. For an overview on the state of the discussion see Viebrock & Clasen (2009).

3. Data and Methods

3.1 The EU LFS and Macroeconomic Indicators

While most macroeconomic studies are situated at the national level and therefore use aggregate data, this paper uses the EU LFS as a micro-level base for analyzing the social disaggregation of non-employment. The EU LFS contains information on individuals in private households with a special focus on their working life, pooling national labor force surveys of all EU members since 1983 (latest available survey is from 2007). This dataset allows controlling for micro-level characteristics like educational attainment, age, gender, and the marital status, allowing a social structural analysis of the impact of labor market institutions on individual employment performance. Since educational attainment was not collected in the EU LFS before 1992, the analysis is restricted to the interval from 1992 to 2007. It includes 14 European countries: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, and the United Kingdom.⁶ These countries fulfill the condition of non-missing information on macroeconomic indicators for the observed time period.

The analyses make use of two dependent variables. The model that reassesses the differences in institutional impact between the unemployed and the inactive uses a categorical variable with the values employed, unemployed, and inactive. Non-employment, coded as a dummy of being employed (0) or non-employed (1), serves as the dependent variable for the in-depth analysis of the determinants of non-employment.⁷ Compared to analyses using employment rates this coding is supposed to direct attention to the employment decreasing effects institutions have for different social groups. All labor force surveys follow the ILO definition of employment. Thus, everyone who has been working at least one hour in the week before being interviewed is considered employed.

The EU LFS contains information on educational attainment, which follows the 1997 version of the International Standard Classification of Education (ISCED) distinguishing three different levels: ISCED0-2, including lower secondary education or less, ISCED3-4, containing upper and post-secondary education, and ISCED5-6, which represents persons with a tertiary education. Within the working-age population I distinguish three categories: Youth (15–24), prime-aged (25–54), and older workers (55–

⁶ Data collection for Austria, Finland, Norway, and Sweden started in 1995. German data was gathered from the Mikrozensus. The German data spreads from 1993 to 2007 but misses 1994. Data from 1998 was dropped for Ireland and the United Kingdom due to missing information on education. Irish data was also dropped for 2007 due to the lack of information on marital status. In order to not give more weight to institutional arrangements present in countries and years with especially large sample sizes, I take random samples of 10 000 individuals from every country-year, which leads to a total case number of 2 010 000.

⁷ When concerned with the institutional impact on employment, a wide variety of different aspects of employment might be of interest. The quality of jobs, temporary and indefinite contracts, part-time and full-time positions are prime examples. This paper's aim is to highlight the consequences labor market institutions have for non-employed individuals of different social groups. It lays its focus on the population without employment and the social structural continuum that is non-employment. The very interesting question of how jobs of different quality are socially allocated certainly would deflect from the main intent let alone go very much beyond the scope of this paper.

64). Other individual level variables included are gender and marital status, which are coded as dummy variables (0=men/1=women, 0=not married/1=married).⁸

To account for institutional arrangements, macro-level indicators are used of which there is a wide array available for national labor market institutions (Eichhorst et al. 2008),⁹ but due to their aggregate character they cannot fully account for the complexity of institutional arrangements. For instance, it is nearly impossible to include all dimensions of welfare benefits since measures of benefit levels, duration, access, and conditionality have to be weighed against each other. Moreover, existing indices usually refer to constructed average households and individuals. Their representation of an institutional arrangement therefore might be more appropriate for some individuals than for others. The proxy nature of these indicators therefore needs to be kept in mind. However, by expressing a complex issue in the form of averages for all individuals affected by the various institutions they serve the purpose of giving a robust overview of an institutional arrangement. Although it is impossible to depict all different forms for instance labor taxes take for individuals in distinct constellations, the constructed indicators give a valid insight into such aspects as general generosity and financial incentives provided by the institutional arrangement. Most indicators are taken from OECD data, either constructed indices or expenditure data for certain policies. If OECD indicators are not available or not sufficient in terms of reliability or accuracy, they are supplemented with indicators from other sources.

Three indicators related to benefit generosity are used: to account for unemployment benefits I use the OECD's replacement rate, which gives the average percentage of replacement rates for unemployed persons who earned 67% and 100% of average worker earnings prior to job loss. It furthermore averages across the first five years of unemployment for three family situations and two money levels. Data are provided for every second year and therefore are interpolated for this study.

In order to include potential benefits for inactive persons I introduce the level of social assistance collected by Nelson (2007).¹⁰ For the purpose of international comparison real levels are adjusted for purchasing power parities and are displayed in thousands. From the OECD Database for social expenditure¹¹ I obtained the numbers for payments of disability benefits as a percentage of the gross

⁸ More individual characteristics would have been of interest, yet data quality does not allow their inclusion: Information on migration background has serious gaps in some countries' data and regrettably could not be taken into account. In addition to individual characteristics social resources affect the decision of labor market participation: Foremost the household constellation affects labor market activity decisions by determining the freedom or the necessity to work. A child or an old person in need of care might not allow taking on a job. If there is a partner who already works, there might be no need for a second income (Gregg et al. 2010). However, the EU LFS does not offer household information for many years and not all countries. Therefore, marital status – serving as proxy for household composition – is included as a control variable in the multivariate analysis but I do not conduct in depth analysis of differences between the states.

⁹ Several alternatives to the indicators presented here were used before settling for the final specification. Although there was slight variation, results were fairly robust.

¹⁰ Numbers have to be interpreted with caution especially for Italy since social assistance varies to a large degree between regions. The dataset offers an alternative in the so-called "minimum vitale" which I preferred to the original data which is taken from the Milan region only. Other countries with decentralized frameworks, such as Germany, Norway, Austria, or Spain, use coordination mechanisms for homogenization of benefit levels (Nelson 2007). It may be remarked that the different specifications I used only lead to marginal changes in the multivariate analyses.

¹¹ For further information on the OECD Database for social expenditure (SOCX) see Adema & Ladaique (2009).

domestic product (GDP). Expenditure for disability pensions should capture the incentives to withdraw from the labor force due to disability or incapacity. Unfortunately, for both social assistance and disability no indicator is available that considers eligibility criteria, access and duration, but these dimensions should be correlated with public social expenditure.

The extent to which a country is investing in ALMP is measured by expenditures relative to the GDP, though in order to consider economic cycles it is adjusted for unemployment rates. To measure the availability of public child care facilities I collected public spending on day-care as a percentage of the GDP which is again taken from the OECD social expenditure database.

The OECD's EPL index is considered the standard indicator for employment protection (Eichhorst et al. 2008), ranging from 0 to 6 the indicator quantifies the costs and procedures involved in individual or collective dismissal, and it comprises the relative ease of using fixed-term or temporary contracts. The OECD recently extended the indicator from only singular points in time to yearly data, which significantly increased its precision and variance levels (Venn 2009).

To measure institutions of wage coordination I introduce two further measures: Union density, taken from the OECD, indicates organizational power of unions by giving the ratio of union members to employed workers. Using OECD measures for the centralization and coordination of union wage bargaining, Visser (2009) developed a summary indicator (ranging from 0 to 1) that takes into account both union authority and union concentration at multiple levels. The indicator thus expresses the scope and coverage of wage bargaining agreements as well as the degree of union coordination.

Table 1: Means and Standard Deviations (in Parenthesis) of Institutional Indicators by Country

	Replace- ment Rate	Social Assistance	Disability Pensions	ALMP	Public Daycare	EPL	Union Density	Centrality	PMR	Labor Tax Wedge
AT	32.0 (0.5)	0.68 (0.07)	1.46 (0.12)	0.13 (0.02)	0.39 (0.03)	2.1 (0.14)	36.2 (3.0)	0.82 (0.07)	1.8 (0.37)	35.6 (1.5)
DE	26.7 (2.0)	0.77 (0.12)	0.10 (0.01)	0.13 (0.03)	0.37 (0.04)	2.4 (0.40)	24.7 (3.4)	0.49 (0.04)	1.7 (0.31)	37.9 (1.3)
BE	40.0 (1.1)	0.75 (0.09)	1.30 (0.07)	0.14 (0.02)	0.49 (0.34)	2.5 (0.47)	53.2 (2.1)	0.49 (0.02)	1.8 (0.34)	42.0 (0.8)
NL	48.6 (7.3)	0.96 (0.15)	2.77 (0.7)	0.33 (0.11)	0.72 (0.34)	2.4 (0.32)	23.2 (2.2)	0.61 (0.04)	1.4 (0.29)	30.1 (2.9)
FR	38.6 (1.9)	0.61 (0.10)	0.77 (0.06)	0.11 (0.01)	0.96 (0.27)	3.0 (0.04)	8.4 (0.7)	0.25 (0.02)	2.0 (0.48)	41.1 (0.4)
ES	36.4 (2.0)	0.52 (0.06)	1.22 (0.07)	0.05 (0.02)	0.31 (0.23)	3.1 (0.29)	16.0 (0.7)	0.41 (0.04)	1.9 (0.64)	33.6 (1.0)
IT	26.7 (8.4)	0.61 (0.02)	0.94 (0.16)	0.05 (0.02)	0.39 (0.25)	2.6 (0.77)	35.7 (2.1)	0.37 (0.02)	2.0 (0.53)	40.7 (5.2)
PT	39.1 (3.4)	0.29 (0.19)	1.74 (0.10)	0.10 (0.03)	0.21 (0.16)	3.7 (0.14)	23.1 (2.2)	0.46 (0.04)	1.9 (0.37)	28.7 (1.0)
DK	54.9 (6.1)	1.04 (0.22)	1.70 (0.10)	0.31 (0.09)	1.77 (0.16)	1.7 (0.36)	74.1 (1.7)	0.49 (0.04)	1.3 (0.24)	30.6 (1.1)
FI	34.8 (0.7)	0.76 (0.06)	1.99 (0.21)	0.10 (0.01)	1.00 (0.08)	2.1 (0.05)	75.2 (3.4)	0.39 (0.02)	1.5 (0.40)	39.9 (1.7)
NO	37.6 (3.3)	0.98 (0.13)	2.27 (0.11)	0.20 (0.03)	0.79 (0.09)	2.6 (0.07)	55.1 (1.0)	0.53 (0.03)	1.5 (0.28)	28.6 (1.5)
SE	28.1 (4.9)	0.73 (0.06)	2.03 (0.12)	0.23 (0.06)	1.60 (0.13)	2.3 (0.09)	78.7 (3.4)	0.54 (0.03)	1.6 (0.27)	43.7 (2.3)
IE	32.5 (3.9)	0.67 (0.16)	0.60 (0.09)	0.14 (0.04)	0.16 (0.08)	1.0 (0.09)	40.0 (5.4)	0.45 (0.04)	1.4 (0.30)	16.1(10.3)
UK	16.2 (2.3)	0.61 (0.14)	2.08 (0.22)	0.06 (0.02)	0.48 (0.41)	0.7 (0.07)	31.2 (3.2)	0.30 (0.00)	0.9 (0.12)	28.0 (1.0)

Sources and definitions: see text, own calculations.

The OECD calculates the labor tax wedge for a single-earner couple with two children and an average income. The tax wedge is the sum of personal income tax and social security contributions as a percentage of total income. The OECD also provides an indicator for product market regulation (ranges from 0 to 4), which includes information on 139 economy-wide or industry-specific regulatory provisions (only available for 1998, 2003, and 2008, but values were interpolated in between).

Finally, as an indicator of national economic development I use the OECD's output gap, which measures the distance between potential and actual outcome of GDP, it is introduced to control for business cycle effects. All the institutional indicators' mean values and standard deviations for each country during the period are provided in Table 1, showing the empirical range.

3.2 Pooled Cross-Sectional Analysis with Fixed Effects

Most studies on employment performance and its institutional determinants remain on the macro-level, using unemployment or employment rates as dependent variables but rarely distinguish between different social groups. By using the EU LFS I can account for individual characteristics on the micro-level while analyzing the broader picture with macroeconomic indicators. In this section I describe the applied method to observe the interplay between individual characteristics and the institutional context.

Researchers interested in the effects of country-level characteristics on micro-level outcomes increasingly use multilevel modeling techniques. This framework runs into problems with unobserved heterogeneity, particularly on the country level. The model assumes that there are no unobserved factors correlated with either the dependent or independent variables. This very strong assumption is highly questionable in a comparative analysis of national labor markets as unobserved country-specific factors are very likely to correlate with a country's institutional setting. In the case of this analysis unobserved heterogeneity might stem from the general national context in which institutional effects are embedded. This context is given by institutional variables not included in the model, macroeconomic conditions, but also "soft" country specific factors such as culture and work-ethic.

To deal with omitted variables the study uses a fixed effects approach that controls for all time-invariant, unobserved country-, country-education level-, country-age group-, and year-specific effects.¹² More specifically, I pool the cross-sectional trend data of the EU LFS and run multiple logistic regressions and logistic regressions of individual non-employment probability. By introducing country dummies I eliminate all unmeasured time-constant, country-specific factors that might influence the non-employment probability of individuals and may be correlated with the covariates. In fixed effects models, coefficients for covariates on the country level, i.e. all institutional variables, are based on changes within countries instead of differences between the countries. A basic idea behind this ap-

¹² Noelke (2008) applies a similar method to the evolution of education-dependent unemployment risks of young men, also using the EU LFS.

proach is that a constant variable cannot cause change. From a causal perspective only a change in the independent variables can lead to a change in the dependent variables. This pertains to time-constant institutional arrangements such as the educational system, but also national culture, attitudes towards work, gender norms, general social composition, or the structure of the labor market. One might furthermore imagine constant factors immanent to specific social groups in single countries to have an impact on their labor market performance. Therefore the fixed effects approach is carried further by the inclusion of dummy variables for country-age and country-education groups. Thus, the model controls for time-constant factors not only on the country-level but also on the level of single education and age groups within countries.

In the fixed effects approach the assumption that time-varying unobserved factors do not correlate with the idiosyncratic error term still needs to hold. Bias can stem from time-varying country specific factors. In order to control for time-varying unobserved factors affecting all countries I introduce year dummies. Thus, period effects for all countries, such as world economic downturns or general trends in development, are controlled for. Furthermore, the output gap is used as a variable to avoid potential bias from country-specific economic cycles. Another source of problems is that time series might be autocorrelated and heteroscedastic, thus leading to wrong estimation of standard errors. I cluster the models at the country-year to ensure robust standard errors which are corrected for within-group correlation and heteroscedasticity.¹³

In a first step a multiple logistic model is run for the employment status with “employed” serving as reference category and “inactive” and “unemployed” as treatment groups. By comparing the effects of the institutional context on unemployment and inactivity I can highlight the differences and commonalities for both groups and scrutinize the necessity to include both in the analysis. This will also give a first glimpse of which institutions affect non-employment probabilities. For these models I forgo controlling for individual level variables in order not to mask differences in the effects for both groups that stem from their social composition, though country and year dummies are included.

Subsequently I calculate the institutional effects for all non-employed persons distinguished by socio-demographic groups. In these models the effects of interest are gathered by interacting the time-varying macro indicators with the different dummies of the micro-level variables, i.e. the three educational levels or the three age groups. Because of the general differences in the mechanisms over the life-course but also in the structural and period changes between sexes, all models are run separately for men and women. All models include interaction terms of the institutional variables with those micro-level characteristics not of primary interest in the particular model in order not to conflate the effects. For instance, the models for the different age groups include interaction terms between all institutions and the educational levels. Marital status is introduced as a further control variable on the individual level. Since this variable can only operate as a proxy for household composition no separate models

¹³ In order to exclude that results are driven by outliers all models were also calculated with every single country once dropped from the dataset. Results were robust across the different specifications.

for different marital states are calculated. Effects for institutional interactions are calculated from separate models for each interaction. Comparing the differences in the institutional effects enables conclusions about which institutions matter how and to what extent to whom. The theoretical section discussed potential effects on the labor supply as well as on the labor demand side. Due to the data only showing the outcome of this interaction supply and demand can only be disentangled on the grounds of plausibility.

The categorical and dichotomous nature of the two dependent variables calls for logistic regressions. The interpretation of coefficients from logistic regressions is challenging. While the direction and significance of log-odds of main effects can give some insight, the size of the coefficient has no immediate meaning. Furthermore, it is problematic to appropriately interpret the coefficients for interaction effects (Ai & Norton 2003). I therefore follow the proposition of Ai and Norton (2003) and derive predicted absolute probabilities for a single institution's effect and display these in separate graphs. This enables the comparison across different social groups for all possible values of the institutional indicators. For the case of institutional interactions the graphs depict curves for high and low values of one institutional arrangement while the others vary.

4. Results¹⁴

4.1 Institutional Effects on Unemployment and Inactivity Compared

Table 2 shows the results from a multinomial logistic regression for institutional effects on the probability to be unemployed or inactive relative to being employed.¹⁵ The most immediate observation here is that both probabilities for unemployment and inactivity are strongly affected by almost all of the labor market institutions included in the analysis. The direction of the log-odds coefficients largely confirms the theoretical expectations.

Generally, institutions providing income security and services have an impact on the probability of being unemployed and being inactive compared to being employed, though the effects are stronger in some cases for the unemployed. Higher levels of replacement rates and social assistance lead to lower employment. Replacement rates do show the eligibility-based larger effect for persons closer to the labor market, i.e. the unemployed. On the other hand, social assistance's effect for the inactive is not significant despite the expectation that this institutional arrangement is being closer to inactivity.

¹⁴ Table A1 gives an overview of all the results. It shows results for institutional coefficients with all other values set to mean. However, the graphic illustration used in the following sections is more reliable, since in logistic regressions significance levels and coefficient sizes can change across specifications, especially in the case of interaction terms (Ai & Norton 2003). For instance, social assistance's impact is almost never significant in the simple regression tables, the curves in the graph, however, show some change for the different values, which is important considering the subject.

There is no significant effect of disability pensions. ALMP expenditure has a strong employment increasing effect for transitions out of unemployment. As a large part of these programs are directed at unemployed persons, the insignificance of this effect for the inactive is not surprising. Public expenditure on daycare facilities shows significant effects for both categories.

There are many commonalities and some differences between unemployed and inactive for the institutions regulating the labor and product market as well. In contrast to theories that argue strict regulation inhibits employment, EPL lowers both categories of non-employment. While this effect is stronger for the unemployed, union density's impact in the opposite direction affects them more strongly. The impact of centrality of wage bargaining is less significant but also increases employment probabilities, especially for the inactive. This confirms expectations about the ability of centralized and coordinated bargaining to take the needs of the whole economy into consideration. Approaches that highlight the employment lowering effects of market regulation are confirmed by the results for labor taxes and product market regulation, which increase probabilities to be unemployed and inactive in a similar, highly significant way.

Table 2: Institutional Determinants of Employment Status (Ref: Employed); Multiple Logistic Regression, Log-odds with Robust Standard Errors (in Parenthesis)

	Unemployed	Inactive
Replacement Rate	0.01** (0.00)	0.00* (0.00)
Social Assistance	0.70*** (0.16)	-0.03 (0.07)
Disability Pensions	0.03 (0.10)	0.09 (0.05)
ALMP	-2.59*** (0.41)	-0.20 (0.16)
Public Daycare	-0.18** (0.07)	-0.13*** (0.04)
EPL	-0.25*** (0.05)	-0.06** (0.02)
Union Density	0.03*** (0.01)	0.01* (0.01)
Centrality	-0.18 (0.33)	-0.30* (0.14)
PMR	0.33*** (0.09)	0.26*** (0.05)
Labor Tax Wedge	0.02*** (0.00)	0.01*** (0.00)
Output Gap	-0.05*** (0.01)	0.01 (0.01)
Country Dummies	yes	yes
Year Dummies	yes	yes
Constant	-3.95*** (0.46)	-1.82*** (0.21)
Observations	2 010 000	
Pseudo R-squared	0.025	

Source: EU LFS, own calculations; * $p < 0,05$; ** $p < 0,01$; *** $p < 0,001$.

¹⁵ These are the three separated labor market states without any overlap. To acquire an impression of the effects for total non-employment one could simply calculate the mean for unemployment and inactivity weighted by the number of observations.

Overall, institutions governing the labor market affect not only transitions between unemployment and employment, but can also lead to transitions into and out of inactivity. Thus, inactive persons are potential employees as well and a change in the institutional context can alter their decisions about labor market participation. Furthermore, institutional arrangements associated with the inactive need to be taken into account as they show significant effects for both categories.

Nevertheless, unemployment and inactivity display some marked differences in how they are affected by the labor market regime.¹⁶ This counters the argument that focusing on unemployment in labor market analysis is sufficient with unemployment rates serving as a pars pro toto for the overall employment performance. Thus, movements in non-employment as a whole need to be considered in the analysis of labor market regimes and the assessments of policy effects. Keeping the social composition of inactivity and unemployment in mind – the existing differences furthermore underline that individuals are affected in specific ways, which implies interactions between group membership and the institutional setting.

4.2 Institutional Effects on Non-employment of Social Groups

Taking a social structural perspective at the institutional impact on non-employment, figures 3 to 7 present predicted absolute probabilities from logistic regressions of non-employment for institutional covariates. The y-axis shows the probability to be non-employed, whereas the x-axis shows the institutional indicator and thus shows the empirically found variation. The figures cover country, country-age group, country-education level, and year fixed effects models. The slopes can be interpreted as the effect that a change in the institutional arrangement has on the non-employment probability of the specified social group. Since the main interest of the paper is the general direction and social differences of institutional effects, interpretation focuses on the slopes of the depicted curves. The level differences indicate overall differences of non-employment probabilities for the displayed groups.

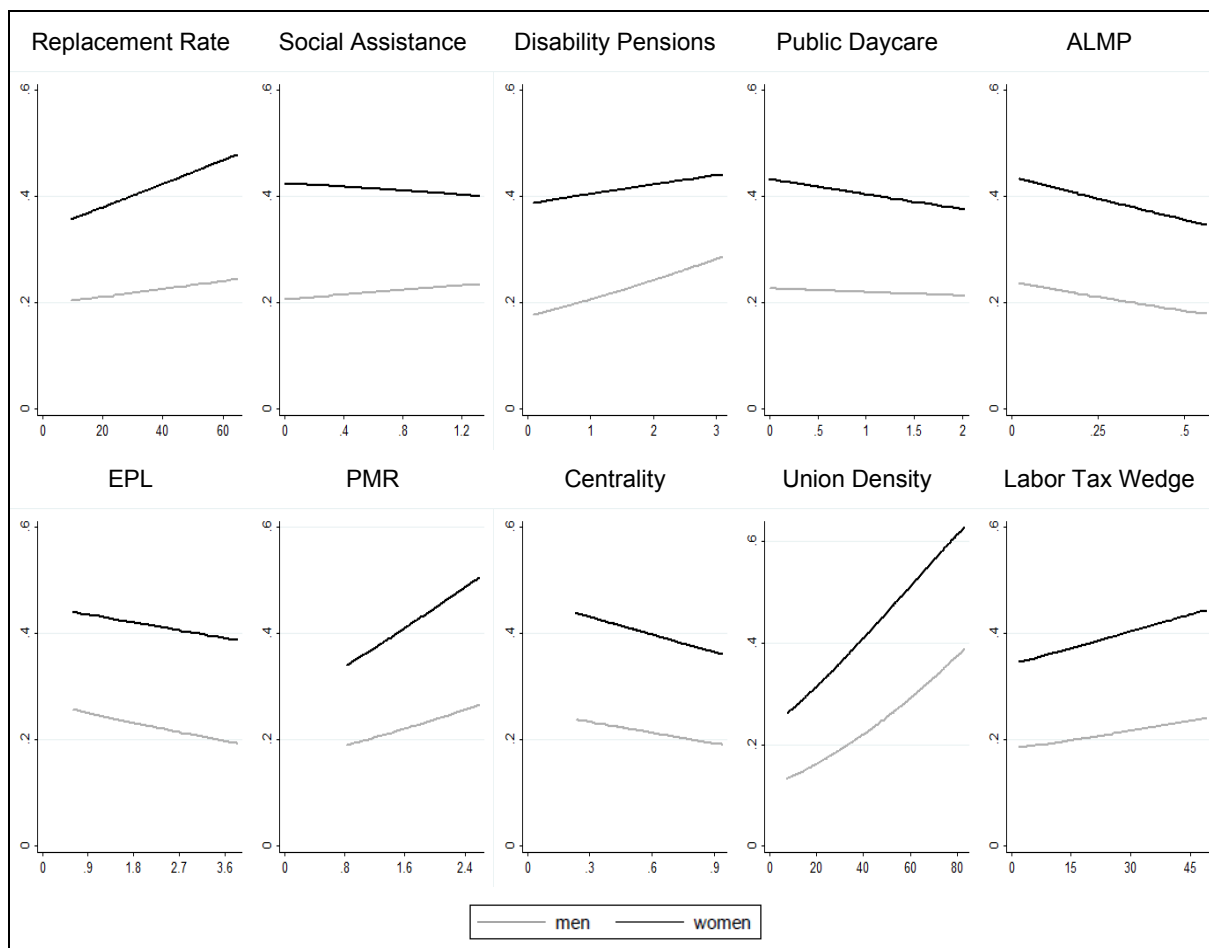
Gender Differences

Looking at the graphs for the effects of the institutional arrangements on women's and men's non-employment (Fig. 3), an expected result is the marked difference in the overall level: Women are much more likely to be out the labor market than men. Generally, almost all of the institutional effects show the same direction for men and women. Concerning the differences in institutional effects women's labor market participation seems slightly more affected.¹⁷ The slopes of replacement rates, public day-care, product market regulation, union density, and labor taxes are steeper for women than for men.

¹⁶ Following the theoretical reasoning above these differences should diminish when controlling for individual characteristics, which place persons in the spectrum outside of the labor market. I ran regressions including gender, marital status, educational level and age, which reduced the differences but did not eliminate them. It could be argued that this is due to many factors on the individual and household level still missing, such as work experience or household size.

Since these institutions show theoretically expected non-employment raising (replacement rates, product market regulation, union density, labor taxes) but also decreasing effects (public daycare, wage bargaining centrality), the results hint at the special importance of the configuration of labor market institutions for individuals less attached to the labor market.

Figure 3: Institutional Effects on Non-employment Probabilities of Women and Men



Source: EU LFS, own calculations. Predicted absolute probabilities from models for men and women; controls: country, year, country-age group, country-educational level, interactions of educational levels and age groups with all institutions, marital status, output gap.

Disability pensions increase however male non-employment slightly more. A potential explanation is that men more often work in jobs prone to injuries. Since some form of sickness or disability is the usual hurdle to be eligible for disability benefits, men might be increasingly in the position to leave the labor market on this path. Employment protection shows non-employment decreasing effects. In con-

¹⁷ Although the differences in the slopes in some cases seem rather small, we have to keep in mind that they indicate variance in absolute non-employment probabilities. Thus, even marginal changes hint at very important circumstances in the real world.

trast to the expectations it does not help men more than women. Social assistance is the only institutional arrangement showing in different directions for women and men. While higher levels lead to increased non-employment among men they reduce female non-employment. In sum, gender differences in the slopes are less pronounced than expected. Since the models for educational levels and age groups are separated for men and women as well, we might see some further differences when analyzing them in more detail.

Age Group Differences

The impact of institutional arrangements across three different age groups (15–24, 25–54, 55–64) is displayed in figure 4, providing separate models for men and women. Generally, prime-aged men and women show higher employment levels than their younger and older peers. For both sexes, the elderly show the highest probability to be non-employed although older and younger women are rather close to each other.

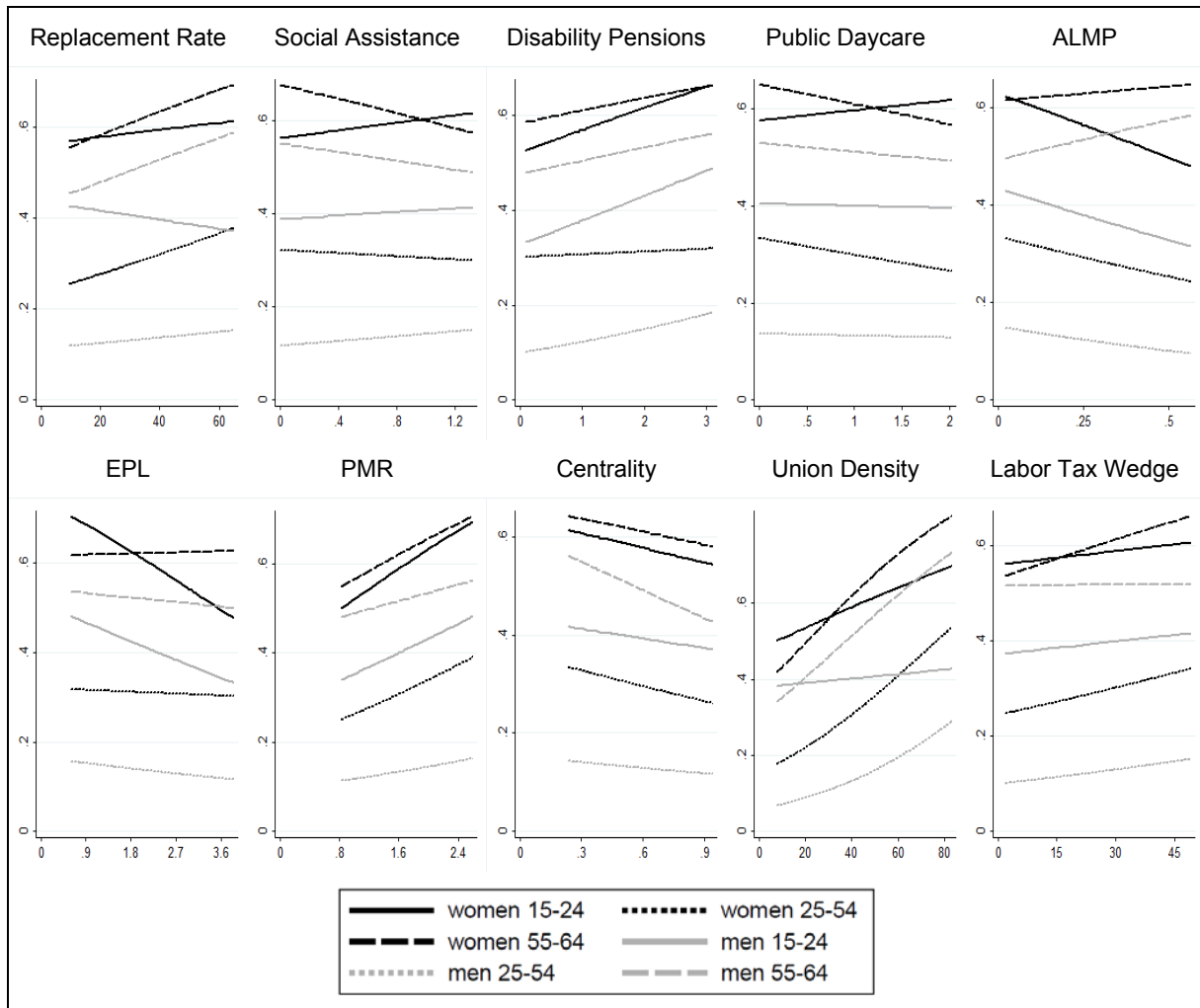
All institutional arrangements show differences in their impact on age groups. Dividing the effects for the three welfare benefit indicators, particular age groups stand out. The impact of replacement rates is weaker for younger women, and it is even employment increasing for young men. These differences can be traced back to the eligibility criterion of previous employment which young individuals often cannot fulfill. Complementary, social assistance increases non-employment for exactly these groups. Prime-aged men are the only other group showing this effect. Disability pensions' impact is consistent across groups yet it raises non-employment of the two youth categories. These results give a first hint at the substitutive relationship between the benefit systems. Non-eligibility for unemployment benefits might explain the stronger effect of social assistance and disability benefits for young women and men. Vice-versa, the prime-aged and elderly may not have to rely on these benefit schemes because they are often eligible for unemployment benefits.

The effects of daycare expenditure are surprising in that they raise employment of all groups (some only very slightly) but increase non-employment of young women. A possible explanation is that mothers who give birth at this age do decide not to enter the labor market at all and to care for their children themselves. ALMP policies achieve their goal of helping individuals into the labor market in the case of young and prime-aged men and women. However, this seems to come at the expense of the elderly: in countries with high expenditure on these schemes, older individuals on average should show higher non-employment probabilities.

EPL helps young women and men the most. In contrast to the expectations, the elderly profit the least if at all. Although the overall effects of EPL are theoretically ambiguous, this age group's specific result contradicts existing theories. PMR on the other hand shows non-employment increasing effects that are consistent not only across all age groups but also with theoretical expectations. There are also no marked differences for wage bargaining centrality's positive relationship with employment probabilities though older men profit most. Powerful unions correlate with generally higher non-employment. Yet,

similarly to EPL, they do not favor insiders but show the strongest non-employment decreasing impact on older men and women followed by the prime-aged. Finally, labor taxes raise non-employment across the board yet have the strongest impact on older women.

Figure 4: Institutional Effects on Non-employment Probabilities of Women and Men Aged 15–24, 25–54, and 55–64 Years



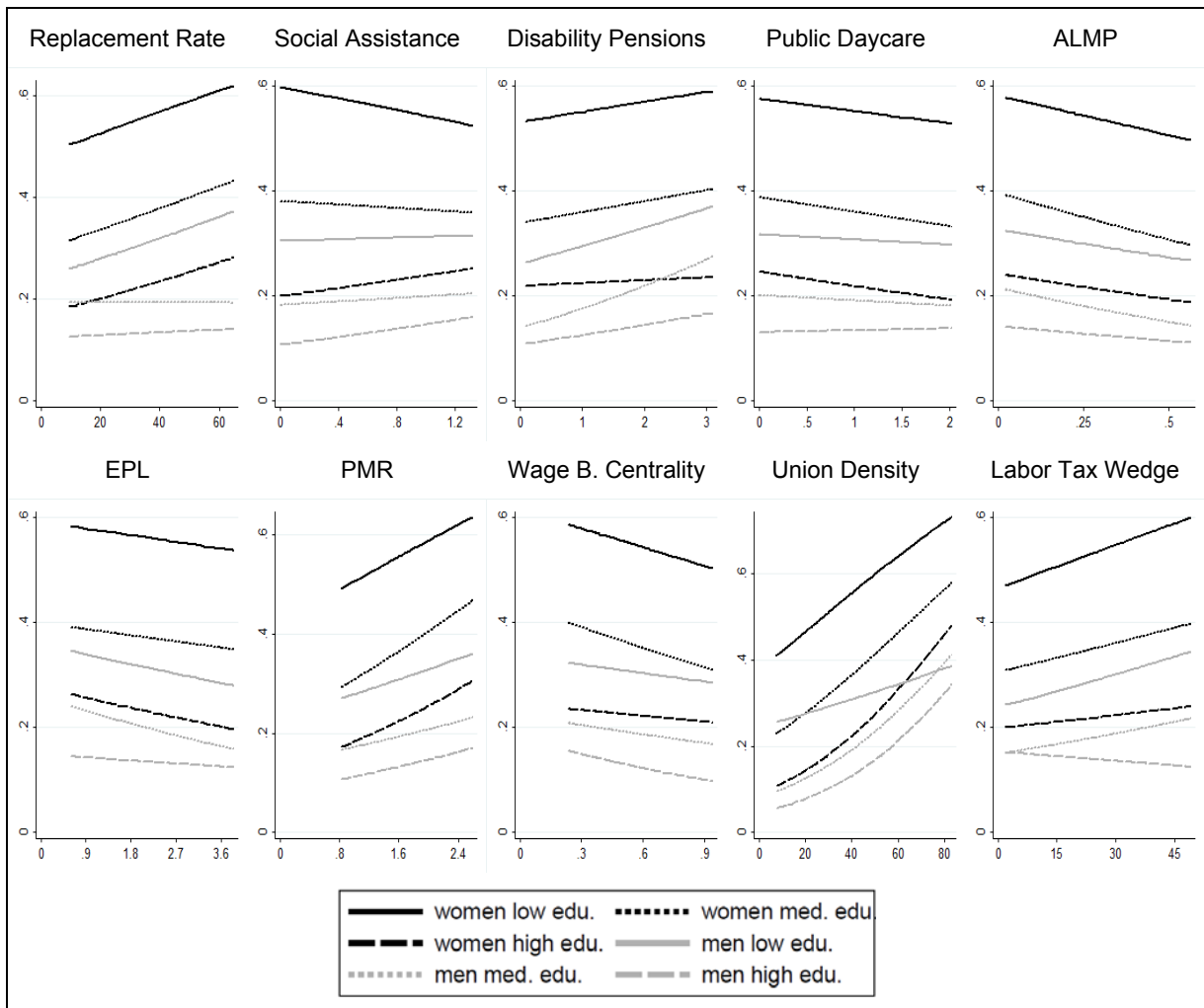
Source: EU LFS, own calculations. Predicted absolute probabilities from models for male and female age groups; controls: country, year, country-educational level, interactions of educational levels with all institutions, marital status, output gap.

Educational Level Differences

Figure 5 shows the predicted non-employment probabilities for low, medium, and high education, separated for women and men. As expected, overall employment levels differ significantly for the three educational levels. Low educated individuals have the highest non-employment probabilities followed by persons with intermediate and high education. The gaps between the three groups are particularly big for women. However, these differences in female non-employment likelihood are remarkably stable for different values of most institutional indicators. The only institutional arrangement showing op-

posite effects is again social assistance, which surprisingly increases non-employment of highly educated women, while their peers with lower educational levels have higher employment probabilities. Following our theoretical reasoning, low-educated women should be most affected by the institutional context, but this is only true for disability pensions and labor taxes. If at all, highly educated women stand out because they show only very small effects for a number of institutional arrangements (disability pensions, bargaining centrality, ALMP, and labor taxes).

Figure 5: Institutional Effects on Non-employment Probabilities of Women and Men with Low, Intermediate, and High Education



Source: EU LFS, own calculations. Predicted absolute probabilities from models for male and female education groups; controls: country, year, country-age groups, interactions of age groups with all institutions, marital status, output gap.

Educational differences are slightly more pronounced for the male population. However, while replacement rates and union density have distinct effects on lower educated men as expected, the group which seems to be subject to particular impact of institutional arrangements most of the time are men with intermediate educational levels. Different values of replacement rates show almost no differences in the non-employment probability of these men. On the other hand, they are especially recep-

tive to disability pensions while ALMP and EPL seem to be of particular help to their labor market participation. Highly educated men are – if at all – only slightly affected by a number of institutions: Because of constantly high labor demand related to their qualifications as well as strong labor supply depending from their expected high earnings, replacement rates, social assistance, disability pensions, day-care expenditure, ALMP, and EPL do not substantively affect their likelihood to be with or without employment. Surprisingly, they show a very steep curve for grades of union density. Higher labor taxes even seem to increase employment.

Differences in “Flexicurity” and Benefit Substitution

Reconsidering the differences in non-employment across Europe (see Fig. 1) some of the results for single institutions contradict what we know about the institutional context in the observed countries. For instance, high replacement rates increase non-employment for most social groups. However, countries such as the Netherlands and Denmark are rather successful in respect to labor market participation despite having high unemployment benefits. This again hints at the existence of institutional interdependencies. The following two sections display results for interactions related to the concept of “flexicurity” and interactions between different benefit systems.

In Figure 6 potential interactions are depicted by lines for the different benefit systems and ALMP, which I let vary for a low and a high value of EPL. The results clearly indicate the existence of the theoretically expected relationships between EPL and the other institutional arrangements.

With higher numbers for the three benefit systems non-employment increases in almost all of the cases, only the impact of social assistance combined with high EPL is not as clear for the different age groups. In contrast, many social groups’ employment probability profits from higher benefits if combined with low EPL. In some cases benefits still raise non-employment but at least to a lesser degree. Some social groups experience very strong positive effects from the complementarity of the two institutional arrangements. The slopes do not merely show the predicted probabilities of the interaction effect. The main effects of the two components are taken into the calculation. Thus, lower EPL not only weakens the non-employment increasing effect of high levels of benefits, but in countries with low regulation these benefits are significantly related to high employment probabilities. This beneficial effect is particularly pronounced for young individuals, whereas the elderly in some instances do not show this interaction. Similarly, ALMP do have almost no employment boosting effects when these policies are introduced in a highly regulated environment. In combination with EPL, however, ALMP lead to very sharp changes in employment rates, again with the exception of the elderly. Looking at all potential interactions, there is also a number of interactions where individuals with high education do not profit as much as their peers. This coincides with the overall lower impact highly educated persons experience.

Figure 6: “Flexicurity” Effects on Non-employment Probabilities of Men and Women Aged 15–24, 25–54, 55–64 and with Low, Intermediate, and High Education

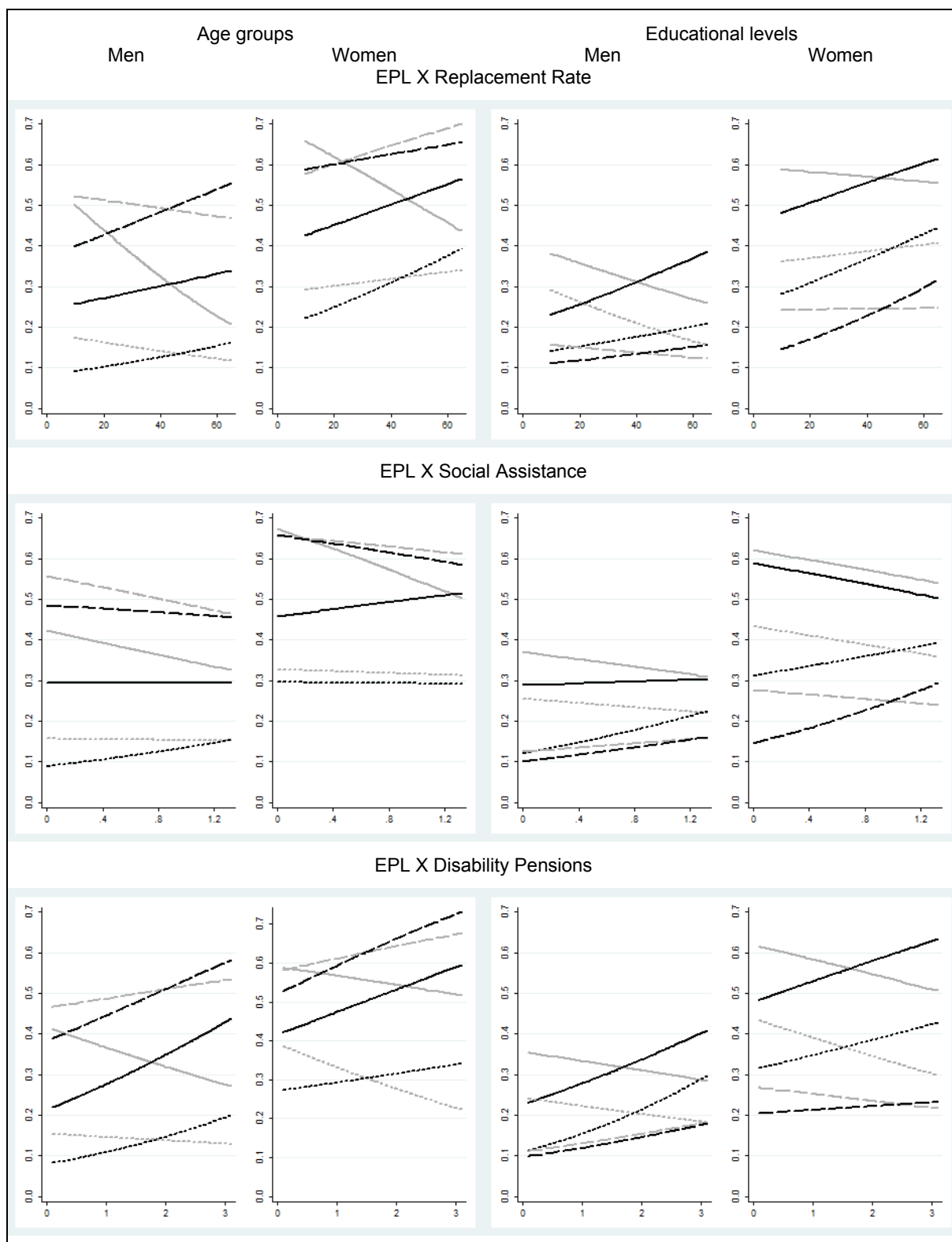
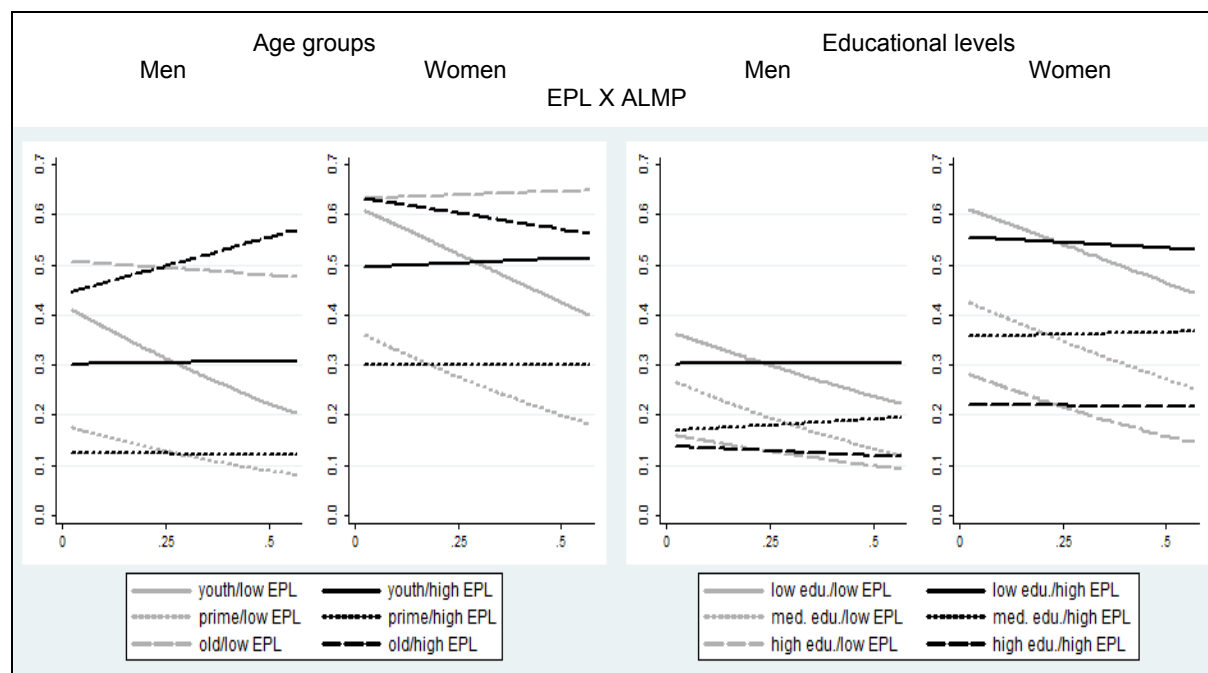


Figure 6: “Flexicurity” Effects on Non-employment Probabilities of Men and Women Aged 15–24, 25–54, 55–64 and with Low, Intermediate, and High Education (continued)



Source: EU LFS, own calculations. Predicted absolute probabilities from models for male and female education and age groups; controls: country, year, country-age groups or country-education levels, labor market institutions, interactions of age groups or educational with all institutions, marital status, output gap.

In order to provide evidence for the substitution thesis results should indicate stronger non-employment increasing effects of the single benefit systems in the absence of other sources of welfare benefits. The figures show these steeper curves in some instances, e.g. most of the interactions between replacement rates and social assistance, and some of the interactions between disability benefits and social assistance, respectively (see Fig. 7). There is also significant variation in these interactions between social groups. The substitutive effect between disability pensions and replacement rates – often discussed for the case of the United Kingdom – is found for most groups with especially steep slopes for older and low-educated men and young women. Across the board, prime aged individuals and those with high education seem the least receptive to these interactions, indicated by rather flat slopes.

However, some components of the results are surprising to say the least and leave serious doubt about the substitution thesis. Although steeper curves in the absence of alternative benefit systems are expected, the at times high non-employment probabilities compared to systems with high benefit levels in both arrangements do not agree with common theory. There is no theoretical argument that high levels of two benefit systems should decrease non-employment. Especially in the cases of prime-aged women and all female educational levels, disability pensions and replacement rates even increase each other's non-employment increasing effect. Thinking of real world cases, one might argue that potential substitutive effects but also the effect of generally high benefit levels is steered by the

relation with labor market regulation. A country such as Denmark with generous welfare benefits in more than one system can still show low non-employment rates because of low EPL and high ALMP.

Figure 7: Substitutive Benefit Effects on Non-employment Probabilities of Women and Men Aged 15–24, 25–54, 55–64 and with Low, Intermediate, and High Education

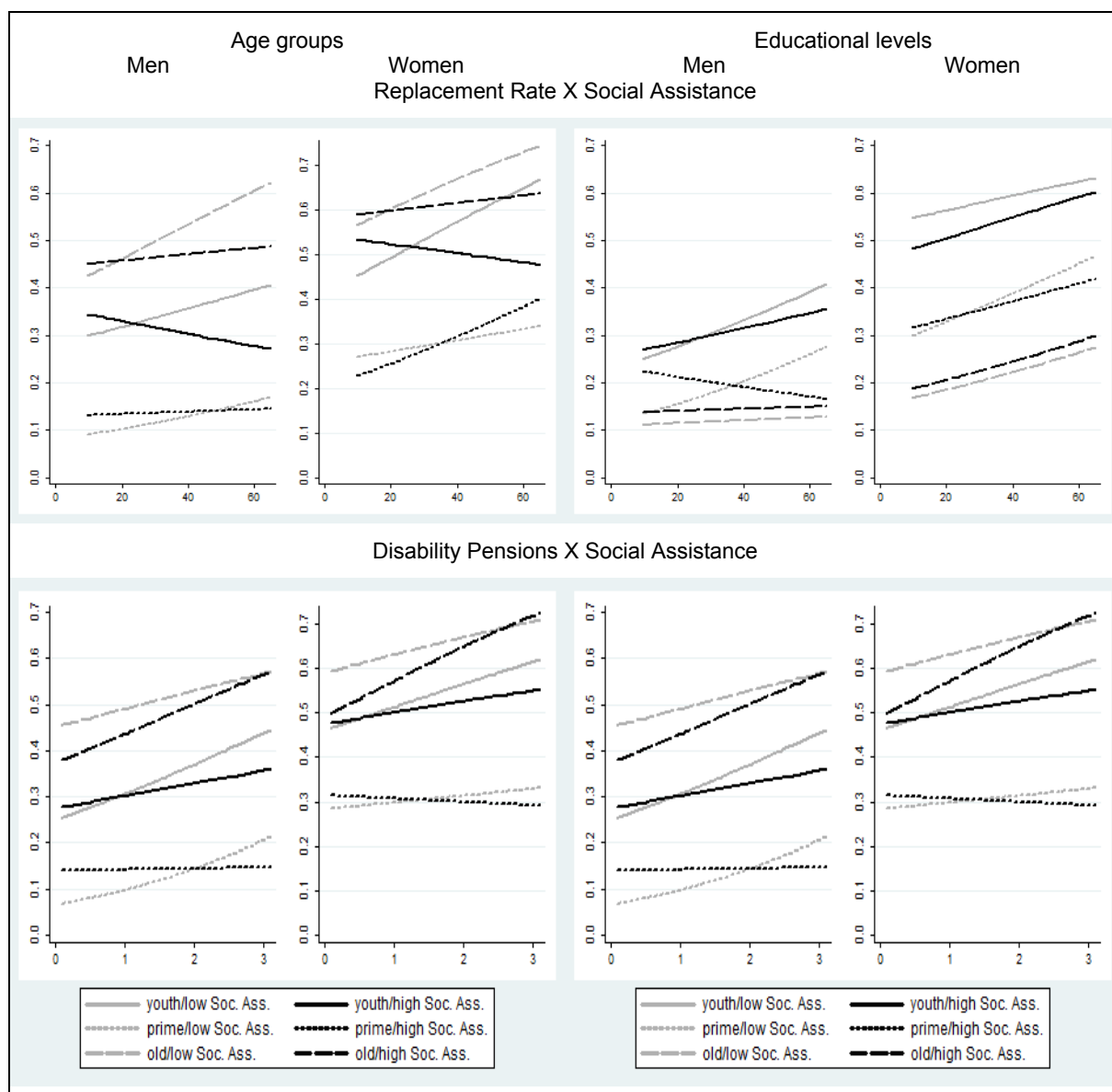
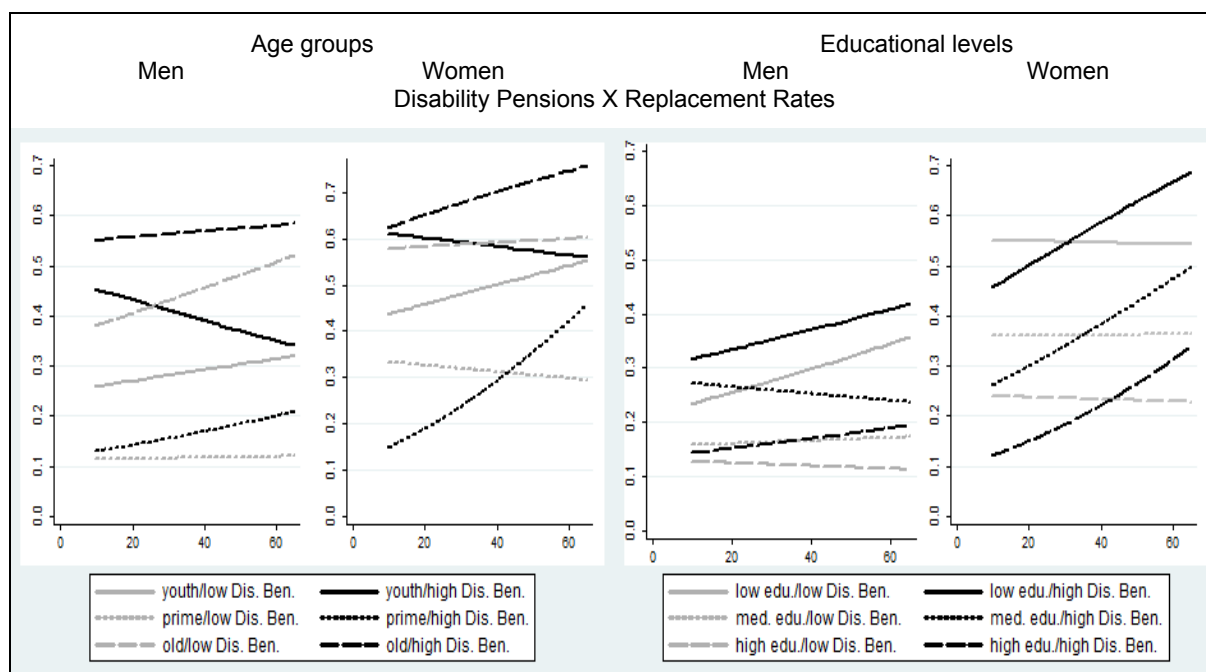


Figure 7: Substitutive Benefit Effects on Non-employment Probabilities of Women and Men Aged 15–24, 25–54, 55–64 and with Low, Intermediate, and High Education (continued)



Source: EU LFS, own calculations. Predicted absolute probabilities from models for male and female education and age groups; controls: country, year, country-age groups or country-education levels, labor market institutions, interactions of age groups or educational with all institutions, marital status, output gap.

4.3 Discussion

In the first step of comparing institutional effects for the unemployed and the inactive, the results showed that these categories do resemble each other in their attachment to the labor market. When seeking to recommend policies or institutional reforms, it is therefore highly problematic to rely on studies excluding the inactive. Since there are also some marked differences in the institutional impact, we can further rule out the use of unemployment as a representative of all non-employment. These results generally indicate that approaching non-employment as a continuum in which socio-demographic factors allocate individuals' positions close to or far from the labor market is more appropriate than distinguishing two (or more) categories with different levels of labor market attachment. However, due to a lack of information on individual traits and relevant individual history as well as household composition this study was not able to test this directly.

Analyses in the second step affirmed expectations about the existence of social differences in labor market institutions' impact on employment performance. Results by and large indicated that disadvantaged groups experience stronger impact from most institutional arrangements. Institutions of social security and services as well as institutions of labor and product market regulation show differences for men and women, youth, prime-aged, and elderly, and low, medium, and high-educated individuals. The results for institutional interactions agree in that an analysis on the aggregate level runs the risk of

missing important relationships. While differences between educational levels were mostly not as clear as expected, age groups' effects varied markedly. One might argue that this is due to the separation into three ISCED categories, whereby important aspects such as the differences between vocational and general education are missed. Research shows that low educated individuals might not be as disadvantaged if they are provided with reliable certificates for their skills, for instance in Germany (Scherer 2005, Shavit & Müller 1998). Moreover, as educational levels lead to specific jobs and since labor market institutions' impact often differs for occupational groups, occupations might act as an intervening variable. Following these arguments, it is not that a social structural view on institutional impact is nonessential, but that only further disaggregation will lead to a full understanding of labor market dynamics. Again, this calls for further studies with more precise information on the individual level.

Institutional interactions are an integral part of an employment regime's impact on employment performance. Results are rather clear on the success of complementary relationships under the heading of "flexicurity". There are also interactions between benefit systems. However, they do not strictly follow a pattern of substituting each other. The results rather suggest that institutional interactions have also to be put into the wider institutional context. This lends further support to Bassanini and Duval's (2009) assumption that effects of single institutions can only be appropriately assessed against the background of the entire employment regime. Results furthermore underline the necessity of including institutional arrangements besides the "usual suspects". Social assistance and expenditure for day-care have a clear impact on labor market participation. Disability pensions are not of significant importance in the aggregate, but they show different outcomes for distinct social groups as well as in interaction with other institutional arrangements.

Despite enhancing previous analyses by including hitherto neglected institutional arrangements, there is still potential to model employment regimes more comprehensively. Institutional variables that are more remote from the labor market might affect labor market performance. Since the used fixed-effects approach of this study can only control for unobserved time-constant variables, there might still be omitted-variable bias due to neglected institutions that changed over time. Furthermore, as discussed above, to put complex institutional arrangements into single numerical values can never have more than proxy character. When discussing social disaggregation it has also to be noted that institutions might very well have different values for different social groups. Thus, efforts to improve indicators' quality and precision should be integrated into future studies of this kind.

Regarding policy recommendations, the results contradict a standard deregulation view. Whereas welfare benefits mostly confirm expectations about their employment decreasing impact, EPL, one of the main targets of deregulatory policies, does show employment increasing effects. Even more, low EPL boosts employment in combination with higher benefit levels. Furthermore, the extended levels of ALMP and wage bargaining coordination help to higher levels of employment instead of hampering it. The evidence from the analyses of institutional interactions underlines that single institution reforms are not very likely to show the anticipated success and might even yield unintended consequences.

However, caution is advised when deriving policy recommendations from such a framework (Baker et al. 2005). Missing institutions and interactions between them as well as flawed indicators might lead to an imprecise assessment of the actual impact and reform potential. Moreover, by treating employment status as a simple dummy variable, the study did not consider job quality. There are justified concerns towards an approach in which “any job” is treated better than none (Eichhorst et al. 2010). Still, the methodological approach applied in this paper and the social structural view on institutional impact make important steps towards an appropriate base of policy recommendations.

5. Conclusions

The purpose of this paper was to investigate the effects of labor market institutions on employment performance and their interplay with individual characteristics. In macroeconomic literature policy recommendations are given based on analyses for effects of labor market institutions on aggregate unemployment rates. Concerning this approach the study emphasized two aspects: Firstly, labor market institutions and reforms not only affect the employment performance of unemployed but also the inactive. Secondly, they do so in different ways according to individual characteristics. The paper therefore argued for a social structural approach to institutional effects on labor market performance.

In taking up these points I analyzed the dynamics between employment and non-employment as opposed to the commonly used unemployment indicator. Furthermore, in order to assess institutional effects for different social groups I combined macroeconomic indicators with micro-level information instead of staying on the macro-level. Specifically, I calculated country, country-educational level, country-age group, and year fixed effect models with labor force survey data from 14 European countries for the period from 1992 to 2007. I compared the impact of the labor market regime on unemployment and inactivity. By displaying the effects of institutional arrangements on non-employment probabilities for men and women, younger and older prime-aged persons, as well as low, medium, and high educated individuals I was able to assess differences between these groups.

Four important general insights can be taken from the presented results. Firstly, institutions of the labor market do not only shape employment and unemployment but inactivity is affected as well. Institutional arrangements still show differences in their impact on unemployment and inactivity. However, from a theoretical point of view it is very likely that these differences can be diminished even further by the inclusion of more detailed information on personal and social resources. This needs to be assessed with datasets that includes variables on, for instance, previous employment histories and household composition. Secondly, institutions previously neglected in most studies of this kind – social assistance, childcare, and disability benefits – have significant effects on the labor market activity of both categories. Future studies should therefore strive to model employment regimes more comprehensively. This notion is underlined when we consider the third point: The effects of institutions are dependent from the existence and constitution of other institutional arrangements. The results for institutional interactions support Bassanini and Duval’s (2009) argument that institutional effects can only

be assessed appropriately against the background of the whole labor market regime. And finally, the impact of institutional arrangements varies across different socio-demographic groups. This implies that policies and reform projects have to be carefully directed in order to achieve positive effects for one group and to prevent unintended consequences for others. Moreover, these institutions affect persons with disadvantages at entering the labor market more strongly. Since disadvantaged groups face high risk of poverty when without income, consequences of reforms should be treated even more carefully (Bonoli et al. 2000). Labor market institutions thus not only play an important role for overall employment levels but the distinct composition of national non-employment is a consequence of the institutional context as well. For causally oriented labor market research this also means that analyses, which do not account for social differences, will have difficulties to find the precise mechanisms that lead to patterns of non-employment.

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Appendix

Table A1: Overview: Institutional Effects on Labor Market States and Non-employment Probability of Social Groups

	Labor Market States				Men						Women						
	Non-employment	Unemployment	Inactivity	Total	(15–24)	(25–54)	(55–64)	Low educ.	Med. educ.	High educ.	Total	(15–24)	(25–54)	(55–64)	Low educ.	Med. educ.	High educ.
Replacement Rate	+	+	+	0	0	0	+	+	0	0	+	0	+	+	+	+	+
Social Assistance	0	+	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0
Disability Pensions	+	0	0	+	0	+	+	+	+	0	0	0	0	+	0	0	0
Public Daycare	-	-	-	0	0	0	0	0	0	0	-	0	-	0	0	-	-
ALMP	-	-	0	-	-	-	0	-	-	0	-	-	-	0	-	-	-
EPL	-	-	-	-	-	-	0	-	-	0	-	-	0	0	-	-	-
PMR	+	+	+	+	+	+	0	+	0	+	+	+	+	+	+	+	+
Union Density	+	+	+	+	0	+	+	0	+	+	+	+	+	0	+	+	+
Centrality	-	0	-	0	0	0	0	0	0	0	-	-	-	0	-	-	0
Labor Tax Wedge	+	+	+	+	0	+	0	+	+	0	+	0	+	+	+	+	0
EPL x RR	+			+	+	+	+	+	+	0	+	+	+	0	+	+	+
EPL x SA	0			+	0	+	0	0	+	0	0	+	0	0	0	+	+
EPL x DP	+			+	+	+	0	+	+	0	+	+	+	0	+	+	0
EPL x ALMP	+			+	+	0	0	0	+	0	+	0	+	0	0	+	0
RR x SA	0			-	-	0	0	0	-	0	0	-	0	0	0	0	0
DP x RR	0			0	0	0	0	0	0	0	+	0	+	0	+	+	+
DP x SA	-			-	0	-	0	0	-	0	0	0	0	0	0	-	0

Source: EU LFS, own calculations; * $p < 0,05$; ** $p < 0,01$; *** $p < 0,001$; models for labor market states (ref. employment), men, women, male and female age and education groups; controls: country, year, country-age groups and/or country-education levels, labor market institutions, interactions of age groups and/or educational with all institutions, marital status, output gap; institutional interactions were modeled one at a time, results for the interaction coefficients without including main effects.