State-of-the-Art Report
For the EqualSoc Research Project:

Varieties of Life Course Patterns
The Role of Institutions in Shaping Labour Market Careers in Europe

Co-ordinators: Martina Dieckhoff and Nadia Steiber

Authors: Martina Dieckhoff, Michael Gebel, Nadia Steiber and Daniele Zaccharia

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1. Overview

The present state-of-the-art report reviews the literature that is concerned with the explanation of cross-country differences in labour market careers. Taking a life course perspective, the review consists of three sub-sections, each of which deals with a different phase in an ideal-typical life course that consists of three consecutive phases: labour market entry, the main working phase and labour market exit.

Young labour market entrants often face difficulties with accessing employment after leaving school. Yet, there are vast country-differences. **Section 2** discusses the main theoretical expectations with regard to institutional effects on the patterns of transition from school-to-work and presents selected empirical results on the topic, focusing on comparative studies, which test the influence of institutional factors on school-to-work transitions and the quality of the first job in multi-level quantitative analyses.

Section 3 reviews the literature attempting to explain the increase in non-standard work and reports on central findings from previous empirical work that has investigated institutional effects on the prevalence and distribution of precarious work in the population. In particular, it discusses the demographic distribution of job insecurity, unemployment and non-employment (according to different education and age groups) and how such distributions vary across countries.

The final **section 4** reviews existing research on the institutional and macro-economic factors that create cross-country differences in older people’s labour supply decisions and in consequence marked cross-national differences in rates of early retirement. The focus is on the role played by institutional factors (e.g. flexibility and generosity of retirement schemes, employment protection legislation) and macro-economic conditions in the retirement decision in Europe.

2. The Role of Institutions in Shaping School-to-Work Transitions in Europe

By Michael Gebel, Mannheim Centre for European Social Research (MZES), Germany

The transition from school to work is a central stage in the life-course with long-lasting consequences for later career chances. At the micro-level, school-to-work transitions can be best understood from the perspective of *matching models*, which interpret the labour market as "arenas for the matching of persons to jobs" (Granovetter, 1981; Sørensen and Kalleberg, 1981). The job matching process is characterized by two-sided frictions. Whereas job seekers have incomplete information about vacant jobs and the compensation that they offer, employers lack information on the productivity characteristics and trainability of job seekers. These market frictions costly delay the process of matching persons to jobs and lead both employers and job seekers to make investments (e.g. the implementation of more effective screening processes or the acquirement of educational credentials as signals) in order to overcome them.

Whereas these behavioural processes of job applicants and employers should be rather similar across countries, *macro-institutional* and *macro-structural* conditions are expected to shape these individual level information problems, decisions and outcomes. We know from previous cross-national research that the specific national institutional setting may mediate individual-level relations in social stratification processes and account for the enormous cross-country variations found (Breen and Jonsson, 2005; Hout and DiPrete, 2006; Mayer, 2004). Previous research has shown that the integration of young people into the labour market differs considerably across European countries. Many scholars have stressed the central role of educational institutions in explaining cross-national and inter-temporal variation of labour market entry patterns (Allmendinger, 1989; Blossfeld et al., 2009; Blossfeld et al., 2005; Kerckhoff, 1995; Müller and Gangl, 2003b; Shavit and Müller, 1998). Furthermore, labour market entry and early career processes are expected to be influenced by national labour market and welfare regimes as well as macro-structural conditions (Müller and Gangl, 2003a). In the following, we will discuss for each of these institutional and macro-structural dimensions the main theoretical expectations and present selected empirical results from previous comparative research projects. The review of empirical results focuses on comparative studies, which actually try to operationalise the influence of institutional and macro-structural factors in multi-level quantitative analyses.

2.1. The Role of Education and Training Institutions

Education is a key resource at labour market entry. In the job matching process, employers use education as a costless screening device in order to infer about the unknown productivity of job applicants and their trainability on the job (Arrow, 1973; Thurow, 1975). Job seekers can also influence the employers' job offer rate by acquiring educational degrees in order to signal their potential productivity and trainability (Spence, 1973). The functioning of the employer sided sorting process mainly depends on the trust of the employers into education as a signal of productivity and trainability. Highly reliable, valid and differentiable educational signals lower the transaction costs in the matching process on the labour market. In this case, employers have the highest levels of trust into the signalling capacity of educational titles and they can easily sort the applicants in an imaginary queue. As signalling processes are embedded in the social context, the *signalling capacity* (and trustworthiness) of educational titles are influenced by the design of national educational institutions. In this section, we review the main institutional dimensions and typologies that have been identified and empirically analyzed in previous comparative research. We differentiate between secondary and tertiary education, for which different conceptualisations have been developed.

Secondary Education and Training Institutions

At secondary level, a frequently cited dimension differentiating education systems is the degree of *stratification*, which refers to the existence of early tracking into distinct programmes at the same level of education, with limited mobility between these programmes and with different opportunities for upward mobility (Allmendinger, 1989; Kerckhoff, 1995; Shavit and Müller, 1998). While stratification amplifies social inequalities in educational attainment, the pre-sorting of students into segmented programmes increases the signalling capacity of education degrees.

Different types of education can also be classified in terms of their degree of *standardization*, which relates to the extent to which educational programmes follow common, transparent standards (Allmendinger, 1989; Kerckhoff, 1995; Shavit and Müller, 1998). High levels of standardization guarantee that education institutions equip students with a similar level and quality of knowledge independently of the location of the specific institution, which guarantees the comparability of educational degrees. With respect to labour market chances, high degrees of standardization should increase employers' trust in the signalling capacity of education degrees.

Another institutional distinction can be made between *general* education and *vocational* training programmes (Allmendinger, 1989; Kerckhoff, 1995; Shavit and Müller, 1998). General programmes are typically oriented towards preparation for university, while vocational programmes prepare for specific occupational fields. While general skills are easily transferable between occupations, the transferability of vocational skills depends on their specificity, i.e. the extent to which they are geared towards more specific or broader occupational fields. In countries, where education is more general in its nature (for instance in the UK and the U.S.), education is weakly related to the workplace and occupational skills are mainly acquired on the job. Vocational training, by contrast, should theoretically facilitate school-to-work transition because students acquire occupational-specific knowledge that employer value more than pure theoretical knowledge. However, some scholars argue that vocational education is of low quality and mainly attracts negatively selected working-class kids because it is often a "dead-end" track with no or strongly reduced chances of entering higher education.

A further distinction can be made according to the organizational form of vocational training, which may be either *school-based* or organised in dual systems that combine theoretical learning in schools with practical work experience in firms in *apprenticeships* (Shavit and Müller, 1998; Shavit and Müller, 2000). In school-based vocational education systems (e.g. in The Netherlands), vocational training is usually more general in its nature. In the context of apprenticeship systems (e.g. in Germany and Denmark), employers can already form a reliable estimate of individuals' productivity while training them on the job (Breen, 2005). Moreover, apprenticeship systems often go hand in hand with a high degree of standardization, which increases the reliability of these educational certificates. This also guarantees the transferability of the acquired knowledge between employers. Furthermore, employers are often involved in organizing and conducting apprenticeships. This latter argument relates to another institutional dimension, namely the *labour market linkages* of the educational system. Employers' involvement in the curricula design of vocational courses should guarantee that the skills acquired in vocational schools and training match the job skills required in firms (Müller and Shavit, 1998).

Empirically, researchers have classified entire education systems according to these institutional characteristics and tested their explanatory power for cross-country differences in school-to-work transition outcomes. For example, in a comparative analysis of the U.S., Norway, and Germany, Allmendinger (1989) confirms that in stratified education systems, the link between education and the first jobs' occupational prestige is stronger than in unstratified systems. In standardized systems, fewer job shifts occur in the early career. In a comparative study of 13 countries, Müller and Shavit (1998) studied the effect of the three institutional characteristics: standardisation, stratification, and vocational specificity.[1] They find a robust effect of the degree of stratification and occupational specificity on the association between individuals' educational qualifications and their first job outcomes. Standardization, by contrast, is found to have no independent effect. In most of the countries vocational education is a

[1] Vocational specificity is ranked at the country level in the following way: (0) small vocational and mainly general education sector, (1) vocational tracks with no clear focus on specific occupations and (2) large apprenticeship or school-based training system in detailed occupations.

"safety net" reducing the odds of unemployment and the risk of entering the labour market as an unskilled worker, and this is especially the case in countries with a high degree of vocational specificity. However, Shavit and Müller (2000) also find that graduates of vocational secondary education attain lower occupational prestige than graduates of tertiary education (so called "diversion effect"). This disadvantage of vocational education is most pronounced in countries where vocational education also serves as an effective "safety net". They conclude that "diversion" and "safety net" effects are not mutually exclusive but are the flip side of the same coin.

On the basis of the EULFS 2000 ad hoc module on school-to-work transitions, Müller (2005) found that labour market entrants with general upper secondary qualifications tend to obtain jobs of slightly higher occupational status than those with vocational qualifications. Yet, at the same time vocational qualifications and especially completing apprenticeship training tend to ease labour market access and lower the unemployment risk when compared to general qualifications. These effects intensify with the specificity of vocational qualifications and with employers' involvement in training provision. Thus, vocational training provides both a "diversion" and a "safety net". Using the same data, Wolbers (2007) found that vocational specificity affects the speed of labour entry. Yet, apprenticeship systems tend to have negative effects on the quality of entry positions, while they also have very limited effects on the stability of entry positions.

Some scholars summarize the institutional characteristics of educational systems in simplified country-level typologies in order to explain variations in labour market entry patterns. Gangl (2001) draws on the Marsden et al.'s (1986) distinction between internal and occupational labour markets (so called ILM and OLM systems) and implements a cluster analysis on specific labour market entry indicators based on EULFS 1992-97 data. In OLM systems occupational specificity is pronounced (e.g. due to the existence of an apprenticeship system) and employers are expected to strongly rely on education as a screening device. This will lead to comparatively smooth transitions from school to work. In contrast, in ILM systems, labour market allocation predominantly relies on work experience with the result that labour market entry tends to be more difficult (insider-outsider mechanisms). Besides confirming the existence of OLM and ILM type systems, Gangl (2001) identifies the Southern European countries as a third cluster with the largest proportions of low skilled entrants and the largest difficulties at labour market entry. Saar et al. (2008) run a similar cluster analysis with EULFS 2004 data for a larger set of countries including Central and Eastern European (CEE) countries. They show a more differentiated picture of country clusters and reveal a high degree of within-variation among CEE countries.

Tertiary Education and Training Institutions

Previous comparative research focused on the institutional differentiation of secondary education and treated tertiary graduates more or less as a small homogeneous group with equally good labour market prospects (Müller and Shavit, 1998). In view of tertiary education expansion and differentiation, recent sociological research has underlined the increasing importance of institutional differences within tertiary education for the labour market entry process. Various classification schemes have been suggested to account for the differentiation of tertiary education into more research-oriented universities, on the one hand, and second-tier universities and colleges, which provide specific training and practically oriented teaching of occupational skills, on the other (Arum et al., 2007; Müller and Wolbers, 2003; Van de Werfhorst, 2004). To date, it remains unclear how different institutional designs of the higher education sector affect labour market chances of tertiary graduates. Comparative studies on the effects of tertiary education institutions on school-to-work transition outcomes have not yet been done.

2.2. The Role of Labour Market Institutions

The central labour market institution that is expected to affect youth labour market chances, is *employment protection regulation*. Restrictions on the dismissal of established workers on permanent contracts enhance the disadvantages of labour market entrants as labour market outsiders (Lindbeck and Snower, 1989; Müller and Gangl, 2003b). Employers refrain from hiring additional staff because of the high expected firing costs due to dismissal regulation. This should be especially the case for hiring school leavers, whose productivity and trainability is difficult to assess. Furthermore, employment protection tends to reduce the dynamics of the labour market and, in consequence, job-finding rates among young job seekers. Blossfeld et al. (2009) argue that in countries with strict protection of workers on permanent contracts and a deregulated use of temporary contracts, labour market entrants will face a high risk of temporary employment.

Empirical evidence regarding the effect of labour market regulation on school-leavers' labour market chances is rather mixed. Gangl (2003) can show based on data of the EULFS 2000 ad hoc module on school-to-work transitions that employment protection legislation reduces the chances of both job and upward status mobility among young people entering the labour market. Upward mobility chances are especially reduced in the high-skill labour market segment and among market entrants with unfavourable initial job matches. In a comparative study of nine countries based on ECHP data, Russell and O'Connell (2001) demonstrate that strict employment regulation lowers the chances of getting a job for unemployed youth. On the basis of the EULFS 2000 ad hoc module on school-to-work transitions Wolbers (2007) reveals that in countries with strict employment protection legislation school leavers take longer to find first employment than in more deregulated labour markets. Furthermore, employment protection lowers the risk of unemployment or inactivity after having entered a first significant job. This confirms the idea that employment protection stabilizes job matches once they are formed.

According to the analyses of EULFS 1992-97 data for 15 countries, Van der Velden and Wolbers (2003) demonstrate that the strictness of employment protection legislation appears to increase the risk for young workers to enter on temporary contracts By contrast, based on multilevel analyses of 2004 EULFS data for 23 European countries, and distinguishing between regulations regarding permanent employment and regulations regarding the use of temporary contracts, Baranowska and Gebel (2008) find that neither employment protection of regular contracts nor its interaction with the level of protection of temporary contracts (as a measure of partial deregulation) affects young people's temporary employment risks as compared to more experienced workers. Using macro-data, Breen (2005) finds a clear effect of employment protection on the unemployment risks of workers at school leaving age when compared to the more experienced work force. Yet, employment protection impedes employment chances of new entrants only if employers cannot fully trust educational credentials as signals of the training costs and the workers' potential productivity. Training systems with a high signalling capacity due to their focus on specific skills and strong work-based training elements, by contrast, appear to provide a preventative to youth unemployment by offsetting the negative effects of extensive employment protection (ibid.).

Unions may also influence youth labour market entry. One strand of the literature argues that strong unions in conjunction with centralized systems of collective bargaining and cooperative relationships between corporate partners can generate favourable institutional structures of youth labour market integration (Müller and Gangl, 2003a; Soskice, 1999). Such efforts might include wage moderation policies to enhance youth labour market integration or corporatist efforts in establishing common training standards and curricula. Another strand of the literature emphasizes that unions mainly represent the interests of labour market insiders, which naturally is to the disadvantage of young labour market entrants (Bertola et al., 2007; Lindbeck and Snower, 1989; Van der Velden and Wolbers, 2003). Empirical evidence on unions' influences on youth labour market chances is rather scarce. Unions' influences, measured by the wage-bargaining structure and trade union density do not appear to affect youth unemployment or risk of entering temporary employment in the study of Van der Velden and Wolbers (2003). Baranowska and Gebel (2008), by contrast, do find a positive association between collective bargaining coverage as a measure of insider-outsider cleavages and the relative temporary employment risk of young persons.

Active labour market policies are a further institutional dimension shaping youth labour market transitions. Many European countries promoted active labour market programmes in times of high unemployment as measures to ease labour market integration, particularly for youth. These measures range from job search assistance, short-term training courses to subsidized work. This heterogeneity of programmes renders an overall evaluation in terms of their effectiveness very difficult and existing research confirms that the success rate varies substantially between programmes (Heckman et al., 1999). In a comparative study of nine countries based on ECHP data, Russell and O'Connell (2001) demonstrate that levels of expenditure on active labour market policies have a strong positive effect on the chances of getting a job for unemployed youth.

2.3. Macro-structural Influences

Besides macro-institutional influences, youth labour market transitions are also shaped by other structural conditions (Müller and Gangl, 2003a). Unfavourable *macro-economic conditions*, measured by the youth unemployment rate or the business cycle, may tighten the competition among school leavers, thus making the transition to work problematic for some of them – and especially for lower qualified school leavers (Müller, 2005). Competition is also influenced by *youth cohort sizes*, which induce demographic pressures on youth labour market outcomes. Furthermore, *educational expansion* may have resulted in a “credential inflation”, which led to displacement processes from the top as higher qualified entrants take jobs that were previously held by less qualified workers. However, these crowding-out processes might have been compensated by an *upgrading of the occupational structure* due to technological change and changes in job tasks and workplace organizations.

Using EULFS data for 12 European countries, Gangl (2002) finds that unfavourable macro-economic conditions translate into higher unemployment risks at labour market entry, while the influence on the quality of the first job measured by its occupational status is at most weak. Especially low educated entrants are vulnerable to changing economic conditions. Cohort sizes do not show any marked effects on entry outcomes. Educational expansion and occupational upgrading both tend to increase the unemployment risks among low qualified school leavers. Furthermore, educational expansion induces downward substitution processes, leaving the lesser qualified with lower status jobs. These tendencies have been partly offset by occupational upgrading trends. In his comparative study based on the EULFS ad-hoc module 2000, Wolbers (2007) finds that high levels of overall unemployment lower the pace of the labour market entry process and lead to lower occupational status in the first job as well as increased subsequent unemployment and inactivity risks.

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3. The Role of Institutions in Shaping the Demographic Distribution of Labour Market Precarity in Europe

By Martina Dieckhoff, WZB, Germany

Labour Market Insecurity – in the form of temporary employment as well as unemployment – has been shown to be detrimental for workers' careers as well as for their well-being. We know that previously unemployed workers have lower wages (Arulampalam 2001; Burda and Mertens 2001; Gangl 2006; for an overview of literature on unemployment scarring, see Dieckhoff' 2006 EQUALSOC State-of-the-Art Report on "Unemployment and Activation") and higher unemployment risks (Arulampalam 2001; Narendranathan and Elias 1993) than their counterparts without previous displacement. Likewise, we know that temporary employment tends to be associated with poorer career chances and workers on such contracts report lower levels of job satisfaction than otherwise comparable workers on permanent contracts (Clark 1998; Booth et al. 2002; Gash and McGinnity 2007; Giesecke and Groß 2003; McGinnity et al. 2005). Moreover, those temporarily employed have an increased unemployment risk – up to 25 percent of temporary workers find themselves in unemployment two years later (OECD 2002). Over the last couple of decades or so, most Western European labour markets have witnessed a substantial increase of temporary contracts (DiPrete et al. 2006; Esping-Andersen and Regini 2000; OECD 2002) even though substantial differences across European countries remain in the volume of atypical work (Maurin and Postel-Vinay 2005) as well as in its long-term consequences for those holding contingent jobs (see Barbieri 2009).

In the following, we will first briefly describe the literature which has tried to explain the increase of non-standard work and its implications (for a more detailed review of research on atypical employment see Barbieri's 2006 EQUALSOC State-of-the-Art Report on "Atypical employment and welfare regimes"). We then proceed to review empirical work which has analysed the effect of macro-level factors on the level of precarious work as well as on the demographic distribution of job insecurity, unemployment and non-employment.

3.1. The Rise of Flexible Employment in Europe

Recent work has demonstrated a substantial increase in wage inequality over the last two or three decades in the US, while this was not the case for most European countries (Gottschalk and Smeeding 2000). Instead European countries have responded to structural challenges by increasing the use of temporary contracts, thereby introducing higher levels of inequality in job security

(DiPrete 2005). These adjustment processes were mainly geared towards workers with lower levels of qualification as their jobs tend to be most exposed to cyclical variations in economic activity and global macroeconomic shocks (Breen 1997; DiPrete et al. 2006). So, while the US labour market responded to the decreased demand for low-skilled labour through wage adjustments, European labour markets responded predominantly through increased flexibilisation. DiPrete et al. (2006) using the French Labour Force Survey from 1990 to 2002 provide evidence showing that while there was increasing concentration of low-skilled workers in contingent jobs, there are no similar trends for the risk of unemployment. They argue that the European adjustment strategies through flexibilisation have prevented not only an increase in skill-based earnings inequalities, but also an increase in low-skilled unemployment or non-employment as the use of fixed-term contracts decreased the relative cost of unskilled work. DiPrete and colleagues (2006) hold that their evidence refutes the economic perspective of a “unified theory” (Blank 1998; Blau and Kahn 2002) whereby different labour market structures in the US and Europe have led to different responses to macroeconomic shocks: the US labour market reacted by adjusting the wages of the low-skilled, while European economies did not accept an increasing skills-gap in wages resulting in lowered employment levels for the low-skilled instead. Other empirical evidence suggesting that employment growth for low-skilled workers was relatively similar in Europe and the US seems to cast further doubt on the unified theory (see Krueger & Pischke 1997 for Germany; Card et al. 1999 for France). We still find substantial heterogeneity in the adjustment processes within Europe, though, as has been demonstrated by Maurin and Postel-Vinay (2005). Using data from the European Community Household Panel from 1994 to 2001 and analysing male workers only, they show that in countries where wage inequalities between low- and high-skilled work are large, job-security inequalities are smaller and vice versa. They reveal, for example, that the United Kingdom and Ireland have much higher levels of wage inequality, but show substantially lower levels of inequality in job security than the Mediterranean countries, such as Italy or Greece. Using aggregate data for 14 OECD countries for the 1980s and 1990s, Booth et al. (2002b) investigated the relationship between strictness of employment protection legislation and the percentage of fixed term contracts. They discover – as one may expect - that the level of temporary employment in an economy is positively correlated with its strictness of employment protection legislation for permanent contracts. This has led to increasingly dualistic labour markets in economies with high employment protection (Continental Europe, the Mediterranean countries) where employment protection for the core workforce (unionised men) remained high, while employment security of those “at the margins” (women, young workers, immigrants, the low-skilled) has been substantially loosened (Esping-Andersen and Regini 2000; OECD 2006; Streeck 2003).

3.2. Labour Market Institutions and the Distribution of Labour Market Insecurity

While the work reviewed thus far would suggest that countries with strict employment protection tend to have a higher share of temporary contracts and a more inequitable distribution of employment security than those where overall employment protection is low, it has not investigated the detailed effects of macro-structural and macro-institutional factors on the level and demographic distribution of labour market precarity. Some recent empirical research, however, has started to examine these macro-level effects. Note that with regard to research concerned with the age distribution of labour market insecurity, the following review is not exhaustive. It excludes research focusing exclusively on the topic of labour market institutions and youth employment as this issue is dealt with in detail in another section of this state-of-the-art report (see Section 2).

Pan-European differences in the share of temporary employment are substantial – with 32 percent of all employment contracts being temporary, Spain shows by far the highest levels of fixed-term work (OECD 2002). Polavieja (2006) undertakes a comparative analysis of 15 Western countries aimed at not only explaining the Spanish 'anomaly', but also the cross-national differences in the level of temporary work. The macro-level data in his analysis stems from OECD and Eurostat data-bases, while his micro-level data comes from the ECHP. His empirical analyses suggest that neither demand-based factors (productive structure) nor supply-side theories can account for observed country differences in the incidence of fixed-term contracts. By contrast institutional factors – namely levels of employment protection and collective bargaining – seem to explain differences in the level of temporary work. However, he shows that the Spanish case cannot be explained by institutional factors alone. One further has to take into account the interaction of high levels of economic uncertainty and high levels of institutional rigidity (as found in Spain). In a context where an economy faced with high employment protection and severe macro-economic shocks, temporary contracts are also used in high-skilled segments of the labour force with the consequence that the overall level of temporary work is raised.

Kahn (2000) examines the impact of collective bargaining on the relative wages and employment of less-skilled workers. Using micro-data from the International Social Survey Programme (ISSP) for 15 OECD countries from 1985-1994, he finds that greater union coverage was associated with higher relative pay of female and male low-skilled workers. At the same time, however, high union coverage also appears to reduce the relative employment probabilities for less-skilled men. The relative employment probabilities of the female low-skilled were also reduced but this effect was rather weak. His results further suggest that negative employment effects were strongest for young low-skilled men. Bertola et al. (2007) also analyse the impact of collective bargaining on demographic employment patterns. More specifically, they examine how collective bargaining affects employment and unemployment probabilities of youth, women, and older persons relative to prime-aged males. Their analysis includes 17 countries from 1960 to 1996 and is based on a range of data sources (including the ILO database "Economically Active Population 1950-2010"). They find that greater levels of collective bargaining reduce the relative employment probabilities of the young and the old compared to the prime-aged, and of prime-aged women compared to prime-aged men. With respect to unemployment, the results reveal such detrimental effects only for prime-aged women and, less so, young men. That no significant union effects are found for young women and older individuals could possibly mean that these groups move into economic inactivity (retirement, education).

One recent study also investigates the effect of institutions on the distribution of fixed-term work amongst different types of employee. Kahn (2007) uses the International Adult Literacy Survey from 1994-1998 and examines whether employment protection affects the demographic composition of the non-employed and those on fixed-term contracts. His analysis includes seven countries (European and North-American) with substantial institutional variation. His results suggest that high levels of employment protection reduce the relative employment probability of youths, immigrants, and women. Among the employed, Kahn finds that high levels of employment protection lowered the relative probability of having a permanent contract for these groups as well as for the less skilled. His findings further suggest that high levels of collective bargaining accentuate this effect of employment protection.

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4. The Role of Institutions in Shaping Transitions to Retirement in Europe

by Nadia Steiber, European University Institute (EUI), Italy

with Daniele Zaccaria, University of Milan Bicocca, Italy

Ageing populations and economic change have produced an evident restructuring of work careers, and they have brought national welfare regimes under increasing pressure, with marked effects on their sustainability. In many European countries, reducing labour supply has been one of the institutional strategies most widely adopted to cope with the crisis of production systems. As a response to mass unemployment following the first oil shock in the early 1970s, most national governments have introduced measures aimed to facilitate and accelerate the transition to retirement, with the result that workers have quit the labour force at increasingly younger ages (Guillemard 1989; Ebbinghaus 2001). As demonstrated by Blöndal and Scarpetta (1999), by the mid-1990s, old age pensions made it financially unattractive to work after the age of 55 in virtually all OECD countries. Yet, the development of pension systems and in particular of early retirement schemes has varied markedly between countries, with some having been more willing to reverse retirement policies and successful in reversing retirement trends since the late 1980s than others (Arza & Kohli 2008).

Comparative research on retirement behaviour is still scarce. In recent attempts to explain national differences in the dynamics of retirement, Ebbinghaus (2006) and others (Buchholz & Hofäcker 2004; Blossfeld et al. 2006) suggest that it is the *conservative-corporatist* welfare regimes of Continental Europe and the *residual* welfare states of Southern Europe which exhibit the highest rates of early exit, owing to multiple and generous pathways to retirement and a seniority wage system that encourages employers to induce timely retirement. In *social-democratic* and *liberal* welfare regimes, by contrast, the average age at retirement is much higher, albeit for different reasons: *Liberal* welfare states tend to offer more limited pathways to retirement (e.g. absence of early retirement measures) and much lower levels of old age income security through public pensions, which has a discouraging effect on early exits. Moreover, given that benefits from long-term unemployment insurance or disability insurance for older workers are insufficient[2], there is hardly any 'pull' on early exit (or alternative early exit pathways). *Social-democratic* countries, by contrast, offer a more tight net of social security and in fact provide older workers with multiple pathways to early exit (via unemployment, disability or regular early exit schemes). Yet, early exits are much less common than in Continental Europe due

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[2] Thus, the option of bridging via long-term unemployment is not possible in the UK (unemployment bridging pensions).

to the positive effects of activation measures on the employment integration of older workers and pension systems that allow for a flexibilisation of work patterns in old age (e.g. partial pensions and part-time work options). This reflects the classic welfare regime pattern (Esping-Andersen, 1990): *social-democratic* regimes offer a high level of de-commodification and generous pension systems while at the same time the state plays a central and active role in fostering employment integration across the life course. By contrast, one of the highest early exit rates are found in *conservative-corporatist* regimes, where the state offers earnings-related public pensions and generous early retirement options as 'rewards' for standardised life-long employment careers (Schils 2008). Also in the Southern European countries, the pension system offers generous public benefits and there are numerous possibilities for early retirement (Guillen & Matsaganis 2006). Although since the late 1980s the aim has been to reverse early retirement policies, the legacies of pension systems are still apparent. State initiatives aimed at creating disincentives for early exit by lowering the level of public benefits or by closing down certain retirement schemes have been shown to be rather ineffective as long-term unemployment or disability have been used by increasing numbers of older workers as 'substitute pathways' to early retirement (Casey 1989; Guillemard 1989; Kohli et al. 1991; Maltby et al. 2004; Ebbinghaus 2000; 2006). Finally, in the *post-communist* countries, the problem of unemployment strongly affects older workers, which leads to high early exit rates (Zaidi & Fuchs 2006). However, the incentives for workers to quit early are weak in these countries, due the limited capacity of the welfare state to grant a decent standard of living in old age (Blossfeld et al. 2006).

While the patterns of labour force participation among older workers in the EU are fairly well documented, there has been a dearth of research on the factors that affect older people's labour supply decisions. To date, we only have cursory knowledge about the determinants of the age of labour market exit among European women and men. To review the main research findings in this area is the central aim of the remainder of Section 4. The incidence of premature exits from the labour market is influenced by a variety of factors, ranging from worker traits[3], job requirements[4], firm characteristics and country-level factors. This report will focus on the latter, reviewing the state-of-the-art in empirical research on the role played by institutional factors (e.g. the flexibility and the generosity of retirement schemes, employment protection legislation) and by macro-economic conditions (e.g. state of the economy, rates of unemployment) in the retirement decision in Europe.

[3] This includes workers' health status and their work orientation. Also the household context has been found to play a role, supporting the theory of joint retirement behaviour of couples. For instance, it has been shown that those with an employed spouse are less likely to retire (Schils, 2008).

[4] A study using SHARE data shows that a poor quality of work – defined in terms of effort-reward imbalance and low control at work- is significantly associated with intentions of early retirement (Siegrist et al. 2006: Quality of work, well-being, and intended early retirement of older employees – baseline results from the SHARE study. European Journal of Public Health, Vol. 17, No. 1, 62-68.)

4.1. Theoretical background: the pull and push in retirement decisions

The theoretical perspective most commonly adopted on the transition from work to retirement is the so-called push/pull approach, which looks at the factors that condition actors' retirement decisions from a cost-benefit perspective (Guillemard & Rein 1993). Research on institutional factors has typically focused on so-called *pull factors*, which comprise the economic incentives offered by welfare systems which 'encourage' workers to retire. They are a function of the extent of coverage against social risks offered by social security systems (Ebbinghaus 2000). From this perspective, improved coverage of social security systems and easier access to pension (or alternative social security) benefits influence *workers' choices*, making them more inclined to quit (paid) work at younger ages. The more generous expected benefits are and the less it pays off to continue working, the stronger the incentives are for older workers to quit early (Gruber & Wise 2004). Clearly, retirement is not only the result of *workers' choice*, however (Hurd 1990). In many instances, older workers have little choice but to quit work; they are pushed out of the labour market either owing to their health or due to a lack of demand for their labour. The factors referred to as *push factors* include those which 'force' workers to withdraw from the labour market (e.g. disability, redundancy, rejuvenation policies introduced by firms). With view to institutional and macroeconomic conditions, pull and push factors are often interrelated, given that generous pension and early retirement schemes have been introduced as a response to declines in labour demand. Moreover, firms' rejuvenation policies in times of negative demand-chocks are greatly facilitated in the presence of generous public pension schemes that represent alternatives to long-term unemployment.

4.2. Incentive Effects of Pension Systems

The generosity and actuarial neutrality of the institutional design of the pension system are central institutional determinants of early retirement (Ebbinghaus 2000). This is supported by studies using (aggregate) country data that show lower participation rates of older people in more generous and/or neutral pension systems (Blöndal & Scarpetta 1999; Johnson 2000; Johnson 2001; Duval 2003) as well as by various national studies using micro-data (e.g. Börsch-Supan 2000; for an overview, see Gruber & Wise 1999; 2004). This empirical finding can be explained either by labour *supply-side* or by *demand-side* arguments: More generous and accessible pension systems will increase workers' incentives to retire early (Gruber & Wise 2004)[5]. At the same time will generous social security and pension benefits also increase firms' incentive to send their older workers into early retirement

[5] Gruber and Wise (2004) furthermore show that early exits tend to accumulate at the age when early retirement first becomes a (legally) available choice. Simulations in 12 different countries suggest that a delay of benefit eligibility ages lead to large reductions in retirement in each country and to a corresponding increase in the labour force participation of older workers.

(Hutchens 1999). The underlying assumption is that social security benefits effectively subsidise workforce reductions by lowering firms' cost of dismissal (see Dorn and Sousa-Poza, 2005).

A number of studies suggest stronger effects of pension wealth accrual rates (i.e. the implicit tax on continued working) than of benefit generosity (Blöndal & Scarpetta 1999; Johnson 2000; 2001). This is also suggested by Fischer and Sousa-Poza (2006) who use data from the Survey of Health, Aging and Retirement in Europe (SHARE) to study the individual and country-level determinants of early retirement. They find that a decrease in pension wealth accrual (i.e. measuring the opportunity costs of retiring at age 55 versus at age 65[6]) increases the probability of exit before the legal retirement age, while pension system generosity, measured by average replacement rates, does not turn out as a significant determinant. In a follow-up study using the same data, however, Fischer and Sousa-Poza (2009) find significant effects on early retirement of both more generous pension systems[7] and of higher implicit tax rates on continued employment[8]. The authors estimate that increased average replacement rates and decreased actuarial neutrality in Europe[9] have caused an increase in the predicted early retirement propensity from 16% in 1976 to 63% in 2004. This can be interpreted either from a supply-side or from a demand-side perspective: From workers' perspective, it is rational to withdraw from the labour market when opportunity costs of retirement are low. Conversely, when older workers face strong financial incentives to stay employed, it also becomes more difficult for firms to induce their workers to accept an early exit (Hutchens 1999). Support for both perspectives comes from Dorn and Sousa-Poza (2005; 2007), who show that generous early retirement provisions make early exits more attractive for workers (*voluntary* exit), while they also induce firms to send more workers into (*involuntary*) early retirement[10]. This view is also confirmed by a study that uses a pension reform in Finland as a natural experiment (Hakola & Uusitalo 2005).

Apart from public retirement schemes, also private occupational pensions play a role in workers' retirement decisions, especially in countries with less attractive public benefits (Ebbinghaus 2000). Arkani and Gough (2007) found that an increase in the share of people with occupational pension entitlements is associated with a decrease in the mean retirement age.

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[6] In other words, this indicates the relative increase in the pension benefit that a worker can expect by staying employed ten more years – and thus measures the growth in pension income forgone by early retirement.

[7] This was measured as the expected gross replacement rate (over the next 5 years) at age 60 in the regular retirement pension system, by which the last gross wage is translated into pension benefits. Values were averaged across six different civil status and wage levels (see Duval, 2003).

[8] This was measured as the cumulated decrease in pension wealth accruals in year of retirement through postponing retirement from 55 to 65 years of age – measured in 1967 and 1995 for singles with an average wage (see Table III.6. Blöndal and Scarpetta, 1999). An additional indicator was used, namely the average implicit tax on continued work for 5 more years (at retirement age of 60) in the old-age pension system – measured as the cumulated decrease in pension wealth accrual in year of retirement (for most countries values from 1967-1999, taken from Duval 2003).

[9] The analysis is based on 10 European countries.

[10] The authors find no significant effect of system generosity on the relative probability (ratio) of voluntary and (to) involuntary exit. Yet, the sign of the coefficients suggest that actuarially unfair pension systems (decrease of pension wealth accrual aged 55 to age 64) tend to be associated with larger shares of 'involuntary' early retirements, while a higher gross replacement rate tens to increase the share of 'voluntary' early exits.

4.3 Production Regime sand Employment Protection

The interaction between production systems and early exit patterns is theoretically ambiguous. The production model prevalent in liberal market economies (LMEs) relies on a lower or more generally skilled workforce and is associated with higher turnover rates than the quality production strategy more prevalent in co-ordinated market economies (CMEs) (Soskice 1999). Following from the different logics of production systems, the expectation would be that in LMEs, the (allegedly) less productive or inadequately skilled older workers are fired first in times of economic turndown. In CMEs, by contrast, production is more strongly reliant on internal labour markets. Firms tend to avoid mass dismissal by hoarding labour (cutting back on working time) and offering re-training to workers as a response to technological change (Estevez-Abe et al. 2001). From this perspective, one would expect that older workers are less likely to be dismissed when firms face cyclical demand shocks in CMEs than in LMEs. Yet, it is also clear that the general push on early exit is particularly strong in CMEs as the system of life-long employment and of seniority wages increases firms' interest in shedding older workers. In sum, one would expect theoretically that the push to shed older workers tends to be cyclical in LMEs, while it is of a more structural kind in CMEs.

A central feature of CMEs is the implementation of comparatively strict employment protection, which may itself be an institutional determinant of early retirement. From a supply-side perspective, strict *employment protection legislation* (EPL) could be expected to discourage firms from hiring older workers, thus reducing their re-employment opportunities and in consequence, increasing the incentives of older 'discouraged' workers to retire early (Duval 2003). From employers' perspective, strict EPL may create incentives for the use of early retirement schemes as an alternative to (strictly regulated and costly) lay-offs (Dorn & Sousa-Poza 2005). These predictions get empirical support from an aggregate analysis by Blöndal and Scarpetta (1999). Moreover, cross-national comparative analyses of ISSP-microdata by Dorn and Sousa-Poza (2005; 2007) show a significant association between stricter EPL and a greater likelihood of self-reported *forced* early retirements (as opposed to voluntary early retirement)[11]. In contrast to this evidence on the odds of *forced* early retirement, however, Fischer and Sousa-Poza (2006) find no significant impact of the strictness of EPL on the *incidence of early retirement*. Overall, we conclude that to date, there is little empirical evidence in support of the thesis that rigid EPL affects workers or firms' incentives to use early retirement options. A reason for these ambiguous results may be that it is rather difficult to disentangle the effects of EPL from its correlates at the country-level (e.g. pension system generosity correlates positively with stricter EPL and greater national wealth, see Fischer and Sousa-Poza 2006).

[11] Conversely, it may also be argued that stronger protection of those still employed may create legal obstacles to some forms of (forced) early retirement, which would theoretically lead to a lower incidence of early exits from the labour force.

4.4. Macro-Economic Factors: National Wealth and State of the Economy

Other possible influences on retirement decisions are macro-economic factors such as the state of the economy and labour market conditions.

Levels of National Wealth

From a *supply-side perspective*, it would be predicted that higher levels of national wealth increase the demand for leisure (so-called income effect) and thereby the financial incentives for early labour market withdrawal (Duval 2003; Johnson 2000). Moreover, greater levels of national wealth make premature exits affordable for greater shares of the population (Burtless & Quinn 2000). This view is supported by a study carried out by Dorn and Sousa-Poza (2005; 2007), who find a positive association between GDP per capita and the odds of *voluntary* early retirement (versus involuntary early retirement). From a *demand-side perspective*, it would be predicted that technological progress (which tends to come along with increased national wealth) leads to a faster depreciation of (technology-specific) skills, especially in the case of older workers who are less likely to invest in continuous skill upgrading (Ahituv & Zeira 2008; see also Dieckhoff 2006 for EQUALSOC State-of-the-Art Report on 'Continuing Training'). This also leads to the prediction of rising early exit rates at higher GDP levels. In contrast to these predictions, however, Fischer and Sousa-Poza (2006) find higher levels of GDP to be negatively correlated with the odds of early retirement. The authors argue that this finding can be explained with reference to substitution effects at higher wage levels which increase the opportunity cost of continued working (see also Johnson, 2000).

The Business Cycle and Level of Unemployment

From a *supply-side perspective*, higher unemployment will lead to more early retirement through the discouragement of older workers (Blöndal & Scarpetta 1999; Walker 1985). From a *demand-side perspective*, firms' response to adverse demand shocks – as indicated by rising unemployment rates (Duval 2003; Dorn & Sousa-Poza 2005) often involve policies of workforce reduction and rejuvenation with firms aiming to direct their older workers toward early retirement (Hutchens 1999; Stern 1994). These theoretical predictions are supported by empirical evidence based on country-level data which suggests that higher unemployment is associated with a lower labour force participation of older men (Johnson 2000; Blöndal & Scarpetta 1999; Duval 2003). Similarly, using Norwegian data, Røed and Haugen (2003) find a positive relation between downsizing policies at firm-level and workers' odds of early exit. Furthermore, using international micro-data, Fischer and Sousa-Poza (2006) find growing unemployment rates to increase the odds of early retirement and Dorn and Sousa-Poza (2005) show higher probabilities of *forced* (company driven) retirement (as compared to voluntary early exits) in years with rising unemployment rates.

4.5. Summary and Concluding Remarks

Empirical work confirms the prediction of economic theory that pension systems offering generous early retirement options encourage early exits from the labour market. Moreover, the *actuarial neutrality*[12] of the institutional design of the public pension system plays a central role in retirement decisions. Other significant institutional determinants of early retirement include the strictness of employment protection. Yet, extant studies suggest that while strict EPL appears to increase the rate of *involuntary* early retirement, it shows no effect on the *incidence* of early retirement per se. Finally, also macro-economic factors have been shown to have a significant impact on retirement decisions. Most centrally, *rising unemployment* has been shown to increase the propensity to retire early, suggesting that in times of economic recession early retirement is more likely. This finding supports expectations from the demand-side as well as from the supply-side perspective, namely that early retirement is more prevalent in the presence of economic shocks in response to which firms aim to shed older workers, one the one hand, and that higher unemployment risks may have a discouragement effect on older workers, seeking early retirement as an alternative to dismissal. Moreover, increasing unemployment rates also appear to change the ratio between voluntary and involuntary early retirement to the advantage of the latter (see above).

As outlined by Ebbinghaus (2001), "*there are intricate 'institutional complementarities' between the particular welfare states, production regimes and industrial relations systems that structure the incentives under which actors make decisions on work and retirement*" (page 97). Yet, to date is has proven very difficult to disentangle the effect of different macro-level factors. This is mainly due to lack of suitable data. The majority of extant cross-national studies have analysed retirement patterns only at the *country-level*, using aggregate data on labour market participation rates of older women and men as the dependent variable in regression analyses (e.g. Blöndal & Scarpetta 1999; Johnson 2000; 2001; Duval 2003), while there are only a few studies which used *international micro-data*, that allow for the joint analysis of micro-level (job and worker characteristics) and macro-level (policy indicators such as measures of pension system generosity, macro-economic indicators, legal situation) determinants of retirement decisions (Dorn & Sousa-Poza 2005; Fischer & Sousa-Poza 2009). C*ountry-level studies* on retirement face endogeneity problems with regard to their macro-level regressors (e.g. regression of unemployment rates on employment rates among older people). The use of cross-country comparative micro-data, by contrast, allows the researcher to disentangle the impact of individual and macro-level factors on retirement decisions. Yet, most existing studies

[12] When retirement is postponed (later than legal retirement age) or advanced (earlier than legal retirement age), then the pension benefit that one would have received at regular retirement is multiplied by an actuarial conversion factor. If this factor ensures that the present value of the net retirement benefits (i.e. benefits minus premiums) is unchanged, then we have am actuarially neutral retirement scheme.

face severe limitations with regard to samples sizes for the analysis of country-level determinants (i.e. number of countries and time points at which they have been surveyed). This is a likely reason for why to date there are, to the best of our knowledge, not yet any studies that have looked at (and formally tested) interaction effects between individual-level determinants of early exit and country-level characteristics. This appears to be a promising avenue for future research.

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