

NEGOTIATE

Overcoming early job-insecurity in Europe

Understanding cross-country variation in the long-term consequences of graduating at a bad time: A comparison of five European countries

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Abstract

This working paper investigates if graduating in a bad economy scars careers of youth cohorts in terms of increased future unemployment and overrepresentation in fixed-term and involuntary part-time work. These dynamics of scarring are explored from a cross-country comparative perspective, focusing on the UK, Germany, Switzerland, Spain and Finland. These countries make up for interesting cases as they differ remarkably on institutional and economic dimensions such as for example the vocational orientation of their education systems, the strictness of employment protection legislation, active labour market policies to support job-search success of jobless young people and the general level of prevalent youth unemployment, which are assumed to be related to cross-nationally distinct patterns in scarring effects. The focus of the empirical analysis is on long-term effects of the level of aggregate youth unemployment at graduation on career evolution of school-leaver cohorts over 12 years since their graduation, distinguishing between educational groups while allowing for gender effects. All in all we find that bad luck in timing of labour market entry can scar future careers over the long-run. A bad economy at labour market entry may thus be seen as a major risk factor for the future integration of youth cohorts in very different institutional contexts.

1. Introduction

Youth employment prospects are highly sensitive to the business cycle with young people being the ones *last-in* and *first-out* when the economy declines (Vandenberghe 2010: 4-5; Bell and Blanchflower 2011). In the latest recession in 2007/2008 youth unemployment peaked at record-high levels for the past 25 years followed by only slow improvement (OECD 2010a). Concerns are raised that young people, who, against the backdrop of recession were left without work or engaged in insecure employment, may become a *lost generation* (e.g., OECD 2010b), suggesting not only initial difficulties for the labour market establishment of these youth cohorts but rather anticipating longer-term consequences for their future careers.

Recessionary years at labour market entry, which hinder young people graduating at that time in finding gainful employment, are a major risk factor for their future settlement and professional development. A vast body of literature suggests that unemployment can be rather persistent throughout individual careers (Arulampalam et al. 2000, 2001; Stewart 2007; Brandt and Hank 2014). Unemployment exposure at one time has been found to adversely impact young people's subsequent careers and labour market integration as well as their future subjective well-being in diverse advanced economies (Nilsen and Holm Reiso 2011; Nordström Skans 2004; Hämäläinen 2003; Luijckx et al. 2009; Schmillen and Umkehrer 2013; Gregg and Tominey 2005; Bell and Blanchflower 2011; Brandt and Hank 2014). What makes these long term consequences especially striking is that they cannot be explained by individual characteristics such as low qualifications, low motivation or a lack of abilities which are known to heighten the risk for successive unemployment (Biewen and Steffes 2010) and to relate to worse employment prospects over the life course. Rather the incidence of unemployment itself, which hinders human capital development, renders people less attractive to prospect employers and impacts workers job-search success through psychological implications

(e.g. Brandt and Hank 2014, 728), has an impact in its own right diminishing the competitiveness and future employment prospects of those (formerly) unemployed. These causal effects of the experience of employment instability and unemployment on future employment outcomes have become widely known in the literature as *scarring effects*.

Hence, besides individual characteristics associated with unfavourable employment outcomes in early and later careers, exogenous factors such as the state of the economy at labour market entry may lead to scarred careers for youth cohorts (see e.g., Kahn 2010; Raaum and Røed 2006; Oreopoulos et al. 2006; Brunner and Kuhn 2009) - where bad luck concerning timing of labour market entry transforms into persistent disadvantages.

Besides scarring in terms of a higher risk of subsequent unemployment, professional development of formerly unemployed may further be hampered because of difficulties to secure high-quality jobs with good career prospects after exposure to unemployment. Hence not only higher risk of future unemployment but also lower career advancement in terms of lower promotion prospects, lower wage growth and a less stable subsequent integration through engagement in marginal and insecure jobs among other factors, may characterise the subsequent (scarred) careers of formerly unemployed.

The aim of this study is to explore and gauge dynamics of long-term scarring from a cross-country comparative analysis, including the UK, Germany, Switzerland, Spain and Finland. The focus is on effects of the level of aggregate youth unemployment at graduation on career evolution of school-leaver cohorts over 12 years since their graduation. More specifically we ask: Does graduating in a bad economy (when aggregate youth unemployment is high) scar careers of youth cohorts in terms of increased future unemployment and an overrepresentation in fixed-term and involuntary part-time work? And if so, how do the effects found compare and may relate to institutional settings of the five European countries investigated?

This study contributes to previous research on unemployment scarring in multiple ways. First and foremost, it tackles the theoretical deficit concerning context factors that explain differential patterns and persistency in scarring across institutional settings by considering diverse institutional and economic dimensions (educational system, employment protection legislation, youth labour market policies, level of youth unemployment) as potential mitigating factors. Second, this contribution offers an international comparative analysis of long-term unemployment scarring on future volatile work such as instable and insecure employment beyond successive unemployment. Third, it pays special attention to unemployment scarring for different social groups, as it is distinguished between male and female cohorts graduating from medium (upper secondary) and high (tertiary) education. Fourth, we circumvent the problematic data availability with a novel methodological approach. And by focusing on employment trajectories in the 1990s and 2000s it finally goes beyond previous comparative research on long-term scarring processes, which have focused on the 1980s and the early 1990s (e.g. de Vreyer et al. 2000). This being said the Great Recession of 2008-09 will not be at the centre of this analysis. Rather, the study's interest lies in the effects of bad labour market

entry conditions on the subsequent career evolution of school-leavers beyond historical shocks such as the Great Recession.

2. Theoretical Explanations of Unemployment Scarring

Diverse demand as well as supply side mechanisms are assumed to explain scarring effects (see Helbling et al. 2016 for a more in-depth discussion). To briefly summarise: recruitment practices of employers may be thought to discriminate formerly unemployed such that those who experienced some unemployment face difficulties and relative disadvantages at future hiring (see e.g., Harvard Law Review 1997). Extrapolating from *signalling theory* (Spence 1973) and *statistical discrimination theory* (Aigner and Cain 1977) employers may be assumed more reluctant to hire individuals with gaps in their work history, indicative of a history of unemployment, because they believe this information to signal less ability and productivity of job applicants and may not regard e.g. their educational qualifications to make up for reliable indicators of their future on-the-job performance. In addition, during times of economic inactivity the accumulation of job-specific human capital is hindered. Also, previously accumulated human capital may depreciate (Becker 1964; Pissarides 1992). Hence, the (formerly) unemployed are in comparatively weaker positions to compete for jobs. Therefore, young workers experiencing early career unemployment are disadvantaged competing for jobs and may further only be offered risk discounted (lower) returns and jobs of lower quality.¹

Last but not least, unemployed people themselves may lower their initial expectations regarding subsequent quality of their employment and expected returns (Mortensen 1986). They may become discouraged (Ayllón 2013) and to some extent habituated (Clark et al. 2001) to their situation of a bleak employment career. The experience of unemployment is further known to diminish psychological well-being and self-esteem (Goldsmith et al. 1997; Goldsmith et al. 1996), which altogether is expected to lead to an altered application-behaviour of the (formerly) unemployed, manifesting in turn in lower chances for a successful and stable (re-)integration in high-quality jobs.

These demand and supply side mechanisms have proven to be difficult to disentangle in their separate effects. Further, one should be aware of that these determinants of unemployment scarring are embedded in wider institutional contexts potentially mitigating the 'costs' of unemployment for subsequent careers. This may result in cross-country differences in the existence, pattern and persistence of scarring effects. As research on scarring so far mainly encompasses national studies, hypotheses on differences in scarring across

¹ Work package 7 is empirically analysing the impact of recruitment practices on scarring based on unemployment spells and education-job mismatch identifiable from job candidates' CVs.

countries and institutional settings are not very well established and also due to the complexity surrounding the investigation of institutional effects the hypotheses advanced in previous studies are not without controversy.

The following section briefly introduces the hypotheses on cross-country differences in scarring, which previous research has established and drawn up on.

3. Hypotheses on Cross-Country Differences

With respect to educational systems and differences in institutionalised pathways for young people to work we consider the following hypotheses: where vocational education and training (VET) is nationally standardised such that hiring employers can rely on VET credentials as job-specific performance signals (see e.g., Breen 2005; van der Velden et al. 2001) and where firm links exist between occupation-specific credentials and prospect occupational positions, post-unemployment job matches should be of higher quality preventing severe scarring (see Dieckhoff 2011: 237; Helbling and Sacchi 2014). In addition, one should note that countries with education systems with a strong vocational orientation show comparatively lower tertiary education rates (see section 3.2). In these countries upper secondary (vocational) education enjoys wide-spread recognition and qualifies for labour market integration into skilled employment. In countries with well-established VET systems, where there exist tight links between occupation-specific credentials and prospective occupations, *scarring is assumed to be lower (hypothesis 1)*.

Further, low employment protection legislation (EPL) is assumed to allow labour market outsiders such as entrants and unemployed (see e.g., van der Velden et al. 2001) to (re-)enter the labour market more easily as the dismissal costs are low and work contracts can be terminated easily. In line with this argument, employers are assumed to invest less in screening the prior work histories of the job applicants and to be less suspicious towards the unemployed if they can dismiss workers more easily. Hence, in labour markets with weak EPL employers are expected to apply screening strategies on the job to assess productivity of prospect workers (e.g., Schmelzer 2011, 253). Further, one may assume (short) unemployment spells in liberal labour market settings to be comparatively less stigmatising as general job mobility is more common. As result, recruiters may not necessarily evaluate these as negative performance signals.

Strict EPL may intensify unemployment scarring as outsiders are being hindered to prove themselves on the job due to higher risk-aversion of employers. Further labour market flows and job vacancy rates may be lower in countries with strict EPL. This may prolong unemployment, which in turn exacerbates the loss of human capital and increases unemployment stigma, which further corroborates the position of the unemployed as labour market outsiders (see Gangl 2006; de Lange et al. 2014; Breen 2005). Drawing upon these theoretical considerations: *Comparatively lower and less persistent scarring may be expected in countries with low employment protection of the permanent workforce (hypothesis 2)*.

In addition, we may assume that not only the re-entry into the labour market for the unemployed is more difficult in economies with strict EPL, but also that the access to permanent and secure jobs is more limited to labour market insiders. Hence, the formerly unemployed may in addition be more often allocated to less secure temporary positions (see Dieckhoff 2011, 236-237; de Lange et al. 2014; van der Velden et al. 2001) or other marginal forms of employment. This may particularly be assumed in case when employment regulations for temporary work or other marginal forms of employment are weak compared to employment regulations for permanent positions.

Yet, there are controversies about the effects of strict EPL on unemployment scarring. Presuming the unemployed eventually gain a (re-)hold in a permanent position in labour markets with strict EPL, their subsequent careers may be more stable and sheltered from successive unemployment. Further, in countries with strict EPL and strongly regulated markets lower between-firm wage dispersion may exist, which shelters the unemployed from more severe earnings losses in post-unemployment jobs (see Gangl 2006).

Besides, unemployment insurance systems and in particular generosity concerning the level and duration of unemployment benefits play a role in determining labour market (re-)integration of the unemployed (see e.g., Gangl 2004; 2006; Brandt and Hank 2014). The effects of generous unemployment insurance systems on preventing unemployment scars are, however, ambiguous. On the one hand generous unemployment benefits allow for a more selective job search leading to more favourable post-unemployment job matches (see e.g. Dieckhoff 2011, 236; Gangl 2004). As result, the total length of unemployment when considering recurrent unemployment is reduced due to a more stable post-unemployment integration (see Gangl 2006), and further unemployment scars can be prevented. On the other hand, generous benefits are also in discourse to prolong unemployment (as they allow for a more selective job search or provide work disincentives), whereby long-term unemployment may relate to increased human capital depreciation and may lead to larger stigma (see e.g., Gangl 2006; 2004). Yet, as young people have little or no work experience, when they enter the labour market they have often not contributed to unemployment insurance accounts and are therefore often not or at least less eligible to receive benefits. Hence, contributory unemployment insurance systems, as they are set up across EU countries (see Hora et al. 2016), may - from the perspective of “passive” unemployment benefits - be regarded as less important concerning job-search support, efforts and (re-)integration success of young people (Kawaguchi and Muraio 2014). We do not formulate a hypothesis based on this institutional dimension, which seems to be highly controversial in effects and may be of less importance when the focus is on young people.

In addition to unemployment benefits there are active labour market policies (ALMP), which specifically target young people, including e.g. job training, upskilling, support in job search and employment subsidies (Negotiate Working Paper 3.4). These measures may additionally support the young left without work in (more quickly) gaining a foothold within the labour market (see Kawaguchi and Muraio 2014). Such programmes may help to counteract the loss of human capital, job search motivation and employer’s higher anticipated (re-)integration costs and hence buffer unemployment scars (Dieckhoff 2011, 236; van der

Velden 2001; Brandt and Hank 2014). However, if ALMPs favour the activation of unemployed above their upskilling - a trend which is observed in several advanced economies (see e.g., Bonoli 2012; Streckeisen 2012) - these policies may push young people in the primary job market regardless of the job quality and their prospects for a stable long run integration and hence do not support a sustainable establishment of young people in the labour market. Such activation measures have been criticised to promote (re-)employment in insecure forms of work with low prospects for professional development (see e.g., Bonoli 2012; Streckeisen 2012) and they may even foster scarred careers for unemployed youths. In this vein, *countries with ALMPs concentrating on the support for young people in their job search strategies and on upskilling in contrast to countries with ALMPs primarily aiming to push young people into the labour market, less unemployment scarring might be expected (hypothesis 3).*

In addition to (but also intertwined with) the institutional context of a country it has been hypothesised that where unemployment is generally high, unemployment may be less of a negative signal (see e.g., Lupi and Ordine 2002; see also Biewen and Steffes 2010) and hence does not necessarily diminish workers' future (re-)employment chances. In countries where unemployment is generally wide spread, recruiting employers may view gaps in the work histories of job applicants as bad luck and as a structural problem of job shortages rather than as an indicator of negatively connoted individual characteristics. Consequently, *scarring may be assumed higher in countries with lower unemployment rates (hypothesis 4).*

One should note that hypothesis 4 stands somewhat in contradiction with the hypothesis 1 assuming well-established VET systems to lower scarring as youth unemployment is generally lower in countries with well-established VET systems.

These hypotheses will be explored in the following cross-country comparative analyses.

Even though the hypotheses outlined can be neatly separated on paper, institutional settings may need be thought of as intertwined, with specific configurations leading to differential mitigating effects on unemployment scarring in different contexts.

3.1 Differential effects across social groups

Moreover, there may exist within country differences in unemployment scarring across different social groups. Institutional settings may not only channel the risk for, but also the costs of unemployment, to a different extent onto different social groups. Focusing on educational groups and gender differences in unemployment scarring contradictory hypotheses have been proposed. On the one hand it is expected that social groups with generally weaker attachment to the labour market are more vulnerable to experience unemployment and hence, during an economic downturn, these social groups may be the first to not find into stable employment at entry or to lose their jobs – being “crowded-out” (see e.g., de Lange et al. 2014). Unemployment scarring should, however, be less persistent for social groups of workers with weaker ties to

the labour market as their prospects for steep career advancement are generally worse and successive unemployment experiences are more common for them. Therefore, the experience of unemployment may be less harmful for this particular group than for other peripheral workers in regard of subsequent careers (see Kondo 2010). According to this reasoning women and lower skilled workers are assumed to experience less persistent unemployment scars as their prospects for high-quality jobs and professional development, which may be hampered by the experience of unemployment, are generally lower, and gaps in their work histories are more common.

On the other hand and in contrast to the aforementioned hypothesis, highly educated workers experiencing some unemployment have also been hypothesised as holding higher aspirations concerning their post-unemployment occupational positions and might even choose unemployment and prolonged job search over engagement in low-quality positions with worse prospects for career advancement. These higher expectations are assumed to prevent the highly educated of persistent scars due to their rejections of unfavourable post-unemployment jobs (see Schmelzer 2011). In addition to this reasoning it has been hypothesised that substitutability of workers may vary across skill levels (Burgess et al. 2003). Highly educated newcomers who enter the labour market during a slack economy are less prone to lose their chances for prospect employment and stable careers in good jobs as they enjoy lower substitutability. In line with these arguments, it would be the lower educated young workers bearing the largest costs of unemployment concerning their subsequent career advancement and labour market integration (see Abebe et al. 2016, where the empirical results for Norway and the UK point in this direction).

Further, experiences of unemployment and worse labour market conditions at entry may also promote careers of non-standard employment, whereas recruiting employers may evaluate non-standard employment histories differently for men and women. While for women part-time careers are more common and may hence have less signalling power, they are more scarce among men and may be evaluated by employers as signalling lower commitment to work, diminishing especially men's future prospects for stable careers (see Pedulla 2016; to some extent in contrast to this view, empirical results for the UK and Norway in Abebe et al. 2016 however point towards effects to the disadvantage of women).

To complicate matters, expectations on differential scarring across social groups of workers may also need be placed in country-specific institutional contexts as the bargaining power of social groups with their different 'standard' careers prospects may differ. For example, in countries with a strong vocational orientation of the education system and occupationally structured labour markets, workers with upper secondary education (comprising for the most part vocationally trained workers) have a strong attachment to the labour market and face favourable employment prospects while in other institutional settings they rather constitute the group of lower educated people facing a more vulnerable labour market integration compared to the much privileged highly educated workers (see Imdorf, Helbling and Inui 2016). Similarly, socio-cultural differences may exist in gender-roles and stereotypes, women's commitment to work, careers and

the importance of women's financial contribution to households across (European) societies (see Russell and Barbieri 2000).

In the following section the five European countries: Germany, Switzerland, the UK, Spain and Finland, which differ in the institutional dimensions of their educational and transitional systems (prevalence and quality of VET), employment protection legislation (EPL), youth oriented labour market activation measures (ALMP), and the level of youth unemployment and hence make up for interesting country-cases to compare and for which there was sufficient (large-sample) EU-LFS data available in order to conduct the (education- and gender sensitive) cohort-analyses on long-term scarring (see chapter 6) are briefly outlined with respect to these dimensions.

3.2 Brief description of countries: institutional and contextual dimensions

1) Dimension: Vocational orientation of the education system

The UK knows a comprehensive education system (Buchmann 2011), privileging general education at upper-secondary level (see OECD 2011, 305) with only a small and decreasing share of students engaged in initial vocational education and training (IVET) where apprenticeship training prevails. Spain has levels of participation in IVET, which are close to the EU/OECD average while those in Finland exceed the EU/OECD average. IVET in these two countries is, however, mainly school-based at a risk of skills mismatch with respect to labour market demands, and participation in work-based apprenticeship/training is very limited (see e.g., Cedefop 2013; for Finland: Duell et al. 2009; Virolainen and Stenström 2014, 87; OECD 2011, 305). In turn, Spain, the UK and Finland have relatively high tertiary education attainment levels (up to 40% in the mid-2000s)². In the latter case, vocational training confers general eligibility for higher studies (Olofson & Wadensjö 2012).

In contrast, Germany and Switzerland know well-established dual-track VET systems with high involvement of employers in elaboration of training content and nationally standardised vocational training programmes (Buchmann 2011; SERI 2015; Buchmann and Sacchi 1998; Müller et al. 1998). Firm links exist between vocational programmes and the occupationally segmented labour markets (Sacchi et al. 2016; Blossfeld and Mayer 1998). The occupation-specific IVET diplomas qualify the young for skilled employment in the

² See <http://appsso.eurostat.ec.europa.eu>, Population by educational attainment level, sex and age (%): 25 to 34 years old population with tertiary education attainment (levels 5-8).

respective occupations they were trained in, providing the young with institutionalised pathways to work. Tertiary education attainment levels in the mid-2000s were considerably lower in the two countries (DE: approx. 23%; CH: approx. 31%) compared to Spain, UK and Finland.

Hence, cohorts with upper secondary education in Switzerland and Germany, which mainly comprise of vocationally trained youth, hold favourable employment prospects, whereas they may be seen as lower educated workers facing less favourable prospects in countries privileging general education at upper-secondary level (such as e.g. the UK and Spain, see OECD 2011, 305) and tertiary educated workers. *Following hypothesis 1*, which assumes vocational diplomas in occupational labour markets to mitigate scarring, *people with upper secondary education in countries such as Switzerland and Germany are expected to be comparatively more protected from scarring by their vocational diplomas*, presumably guaranteeing more favourable post-unemployment matches.

2) Dimension: Employment protection legislation

Employment protection legislations (EPL) concerning e.g. notice and severance pay, procedural inconvenience and difficulty for individual dismissal of regular workers have been rather liberal in the UK and (especially for the young workers, see Hora et al. 2016) in Switzerland, whereas in Germany, Spain and Finland protection of the permanent workforce is much stricter and more highly regulated since the 1990s (OECD 1999; 2013; Hora et al. 2016). *Following hypothesis 2 young people are assumed to experience less severe scars in countries with liberal labour market settings such as Switzerland and the UK as they face easier (re-)entry in case they experience unemployment.*

A dualistic labour market, as is the case in Germany and Spain, where further marginal forms of employment (non-standard contracts, Gallie 2013) have experienced some liberalisation in the past and nowadays co-exist with strongly protected permanent positions (see for Germany: Eichhorst and Marx 2011; Kurz, Steinhage and Golsch 2005; for Spain e.g., Dolado et al. 2002; Noguera, Martin and Bonmati 2005; general fixed-term share figures: OECD 2014) may also promote (re-)employment of outsiders in marginal forms of employment (e.g. temporary or part-time work). This is less the case in Finland, where the main reforms concerning fixed-term work have been to protect the position of fixed-term employees rather than to make temporary contracts more attractive (Svalund et al., forthcoming). Hence in countries with a strict insider protection of the permanent workforce and a flexibilised workforce in marginal forms of work scarring may not simply be prevalent across lines of unemployment versus employment but those formerly unemployed

may also be overrepresented in marginal forms of work (e.g. fixed term, part-time), which are more open to labour market outsiders - such as the formerly unemployed³.

3) *Dimension: ALMPs targeted at youth*

Together with other Nordic countries, Finland has a long history of “youth guarantees” and activation measures for young unemployed people, and the 2000s have been a period of many reforms concerning youth unemployment (Duell et al. 2009). Whereas the percentage used for active rather than passive labour market policies was relatively low in Finland in early 2000s, it has increased as a consequence of structural reforms with a new emphasis on individual activation plans (Julkunen & Öhman 2005). Labour market policies for unemployed youth were also early present in the UK, where the government launched a major active labour market policy for young people aged between 18 and 24 in 1998, the mandatory ‘New Deal for Young People’ (Biggart 2005). In contrast, few unemployed youth in the age range 15-24 were entitled to benefits in Spain in the mid-2000s, which resulted in few unemployed youth registering with Public Employment Service (only 8%; whereas the respective figures were considerably higher in the UK with 30%, Finland with 30%, Switzerland with 40%, and Germany with 90%, see OECD 2007). Active youth labour market policies in Germany can be tracked back to the 1990s (Gross 1998), whereas it is more recent in Switzerland, where hardly any ALMPs expenditures were spent on youth measures until 1996. Expenditures at that time were highest for the UK, followed by Finland, Spain and Germany (see Martin 1998, p. 19). The low youth ALMP measures in Switzerland were mainly due to very low unemployment rates among recently graduated apprentices. Youth unemployment was only about half the rate of the working population in 1990, slightly higher than the average rate in 2001, but considerably increasing in the 2000s reaching more than twice the average rate in 2008 (Salvisberg & Sacchi 2014). This makes it rather difficult to classify the Swiss case with respect to its average youth ALMP provision during the two decades of the 1990s and 2000s. According to comparative analysis of recent ALMP measures targeted at youth in the 2010s, Germany and Switzerland continue to show stronger overall levels of activation measures compared to weaker forms in the UK and especially in Spain (Hora et al. 2016). Accordingly, youth policy measures for Germany and Switzerland follow an *enabling* approach (Dingeldey et al. (2017) (Finland could

³ After some relaxation of regulations on temporary employment in the mid-1980s, Spain again tightened regulations on temporary work in the mid-1990s (OECD 1999, p. 53) and to some extent relaxed the stringent protection of the permanent workforce (see Dolado et al. 2002; OECD 2013, 94) with yet only limited success in reducing the share of workers employed fixed-term (Negotiate WP 3.4 country report for Spain by Ayllón and Ferreira-Batista, p.9). In Germany there co-exist up to date low regulations on temporary contracts with stronger regulations for permanent positions, promoting labour segmentation across lines of standard vs. non-standard employment (see OECD 2013). Finland has moderate regulations on temporary contracts only recently (OECD 2013, 92; Svalund et al., forthcoming), which stand in contrast to the higher regulations and protection of the permanent workforce.

also be added to this group) targeting youth who lack initial VET qualifications. Spain and the UK on the other hand follow a *work-first* approach. However, the latter approach also applies to skilled young workers in Switzerland (Kilchmann et al. 2016).

As the study period of our analysis covers two decades – namely school-to-work transitions from the 1990s until early 2010s – and as youth ALMP measures have been increasingly implemented by most of the countries over that period, classifying the five selected countries according to their level and quality of youth-oriented ALMP is difficult. However, comparing public expenditure of GDP on active labour market policies to expenditures on passive measures across countries over the past decades confirms that compared to passive measures, active labour market policies have been of particularly low relevance in Spain and became more relevant strategies for the integration of young people only recently (see the Negotiate WP 3.4 Spanish country report by Ayllón and Ferreira-Batista, and respective OECD data⁴). Hence, Spain seems to represent a country case where ALMPs have been weakly implemented (and/or used by youth) all over the period of labour market entries observed in this study, which to some degree stands in contrast to the other countries investigated. *Following hypothesis 3*, which assumes that countries with ALMPs that target a vast shares of unemployed young people, favour upskilling and support their job search strategies to gain a foothold in jobs with good prospects, mitigate unemployment scarring, *youth in Spain are assumed to face most difficulties in (re-)entering the labour market if they have experienced unemployment and hence experience more severe unemployment scars. Due to the lack of ALMP measures in the 1990s, Switzerland somehow takes a middle overall position, whereas youth ALMP in Finland, Germany, and the UK can be considered to have mitigated unemployment scarring more efficiently.*

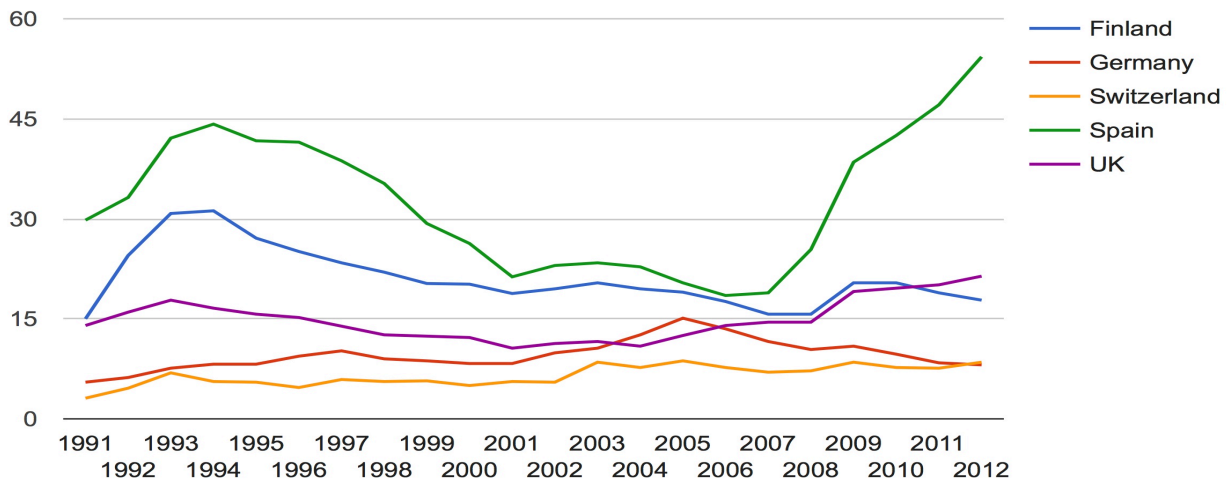
4) Dimension: Level of (youth) unemployment

For the period of labour market entries (1991-2012) investigated in this study, and as shown in *Figure 1*, Switzerland and Germany are characterised by relatively low shares of the age group 15 to 24 without work but available for and seeking employment (according to World Bank data series on youth unemployment). Spain tops within the selected countries with very high youth unemployment in the mid-1990s as well as (as a consequence of the Great Recession) in the late 2000s. Finland had high youth unemployment figures in the 1990s, which dropped to a moderate ones in the 2000s. Still, the Finnish situation is considered to be marked by high youth unemployment by the mid-2000s, despite of a variety of initiatives aimed at activating job seekers (Julkunen & Öhman 2005). Furthermore, Duell et al. (2009) have noted that Finland has kept a

⁴ <https://stats.oecd.org/Index.aspx?DataSetCode=LMPEXP#>

relatively high share of temporary contracts among young people, in particular of involuntarily temporary work.⁵ Finally, the UK can be characterised by moderate youth unemployment figures over the two decades compared to the other countries.

Figure 1. Youth unemployment⁶, ages 15-24, by country and year (2000 – 2012)



Source: TheGlobalEconomy.com, The World Bank

Hence, following hypothesis 4 assuming unemployment gaps in the work histories of youths to not being evaluated by employers as a signal on productivity if they are not scarce, we may expect unemployment in early career to be comparatively less stigmatising in Spain and Finland, resulting in lower unemployment scars, whereas unemployment stigma might be higher in the UK but especially in Germany and Switzerland⁷. This argument contradicts hypothesis 1 (on the mitigating effects of dual VET systems), as in dual-VET countries youth unemployment among skilled workers is scarce and hence unemployment spells (according to hypothesis 4) may be more strongly evaluated by employers as indicators for e.g. lack in “soft skills” and bad on-the-job performance, devaluating the signalling power of their vocational credentials.

⁵ The situation in Finland has improved in the meantime. Karamessini et al. (2016a; 2016b) show that Finland has relatively low levels of early unemployment and job insecurity for new school leavers more recently and finds itself in the same respective cluster as Switzerland (findings based on 2006 - 2013 EU-LFS data). However, our empirical analysis refers to the labour market situation in the 1990s and 2000s.

⁶ World bank definition: Youth unemployment refers to the share of the labour force ages 15-24 without work but available for and seeking employment.

⁷ One may note that when the economy is bad the unemployed competing for fewer vacancies may experience prolonged unemployment which may coincides with increased loss of work-related skills (human capital) and they may be more discouraged in finding (adequate) employment which could on the contrary lead to more severe scarring effects (see e.g., the country study for Poland by Buttler and Michoń in Abebe et al. 2016). Hence this hypothesis is again not without controversy.

Table 1. Dimensions impacting unemployment scarring for graduates in the 1990s and 2000s, by country

Dimensions impacting on scarring:	Well-established dual VET	Liberal employment protection legislations	Youth ALMP access and use	Youth unemployment level	Overall impact of contexts on scarring
Germany	Yes	No	Stronger	Low	<i>Ambivalent</i>
Switzerland	Yes	Yes	Moderate	Low	<i>Less scars</i>
Finland	No	No	Stronger	High	<i>Ambivalent</i>
Spain	No	No	Weaker	High	<i>More scars</i>
United Kingdom	No	Yes	Stronger	Moderate	<i>Less scars</i>

Table 1 gives an overview of the country-specific dimensions, which are assumed to influence unemployment scarring as outlined above. Taking the overall country specific impact of the four dimensions in the 1990s and 2000s into consideration, *we expect most prevalent unemployment scars for graduates in Spain* with three dimensions (lack of VET, strict EPL, no ALMP) pointing to potential scarring effects. *Least scars are expected for Switzerland and the United Kingdom* with only one harmful contextual dimension (CH: low unemployment level; UK: lack of VET) and one ambivalent dimension each (CH: ALMP; UK: moderate unemployment). *Germany and Finland* in turn present somewhat *ambivalent cases* with two harmful dimensions (DE: strict EPL and low unemployment; FI: lack of (dual-)VET and strict EPL) and two mitigating dimensions (DE: VET and ALMP; FI: ALMP and high unemployment).

4. Methodological challenges analysing scarring effects

Empirical work under the label of scarring effects is usually concerned with whether or not individually experienced unemployment episodes in early career adversely impact on future labour market outcomes. The focus is thus often on the micro-level (Vandenberghe 2010: 3-4), where a major challenge lies in robustly identifying causal effects of individual unemployment exposure on future employment outcomes given the problem of endogeneity. Individual characteristics associated with both a higher risk of unemployment in early career and future employment prospects are difficult to separate from scarring and bias may result. Methods that allow for a robust identification of scarring effects at the individual level depend on high-quality (longitudinal) micro-data providing information on a wealth of individual characteristics, which hardly exists at a cross-national comparative level to date for the investigation of *long-term scarring effects*. These methodological considerations are outlined in some more detail in the NEGOTIATE working paper no. 6.1 which precedes the present study (Helbling et al. 2016).

A promising approach to investigate *long-term scarring effects from a cross-country comparative perspective* is to conduct comparative regression analysis on an aggregate level, where whole cohorts of labour market entrants rather than individuals are the units of analysis. Taking on a macro perspective by analysing implications of entering the labour market at different stages of the business cycle at an aggregate level of school-leaver cohorts is promising because the focus is on exogenous variation in macroeconomic conditions. This means that the state of the economy at graduation hinders or fosters school-leaver cohorts in becoming established within the labour market is not driven by individual characteristics (unobserved individual heterogeneity). It is much more bad luck at timing of labour market entry that matters. This allows for a more direct and robust identification of causal effects of employment insecurity at labour market entry on future careers of youth cohorts (Vandenberghe 2010).⁸ Thus, this approach comes along with fewer demands concerning the amount of comparable data and modelling requirements and allows analysing long-term scarring. Hence it offers a feasible way to robustly estimate long-term scarring effects from an international comparative perspective (see e.g., de Vreyer et al. 2000).

5. Data

The analyses are based on a pseudo-panel that is created by using a time series of cross-sectional data sets over the observation window 2001-2013 from the European labour force survey (EU-LFS), release 2014 (see EU-LFS 2016). The pseudo-panel for each country and for each educational groups (medium versus high educated) (ISCED 3-4, secondary level) (ISCED 5-6, tertiary level) is created by aggregating employment outcomes of individuals over the period 2001-2013, who belong to the same school-leaver cohort in each survey year. School-leaver cohorts are defined as including all individuals who graduated (secondary vs. tertiary education) in the same year based on the survey question asking respondents to indicate the year when they successfully completed their highest level of education. In order to focus on career evolvement of school-leaver cohorts over a span of 12 years since their graduation, we include cohorts graduating from school between 1991 and 2012. To give an example: Looking at aggregate employment outcomes of school-leaver cohorts over the survey years 2001-2013, we can observe how the cohort 1991 fares after 10, 11 and 12 years since graduation (in survey years 2001, 2002 and 2003) while for the 2012 cohort we only know the average outcome after 1 year since graduation (in survey year 2013). Hence the analyses are based on unbalanced panel data where we do not observe employment outcomes for each cohort for all years since their graduation. On the one hand this is due to the fact that younger cohorts cannot be observed longer to

⁸ One may note that some attention still needs to be given to the problem of potentially selective labour force participation in that labour market entry may be postponed by certain cohorts in case of bad economy at graduation, e.g. by participating in continuing education (see e.g. Vandenberghe 2010; Ayllón & Nollenberger 2016).

date (e.g. the 2009 Great Recession cohort can only be observed up to 4 years) while further the EU-LFS data concerning the retrospective question on the year of graduation does not date back across all countries to earlier times such that the analysis could not be moved to an earlier observation window⁹.

In summary, we focus on evolvement of aggregate employment outcomes of school-leaver cohorts over 12 years¹⁰ since their graduation (1991 or later), over the survey years of 2001-2013 based on 22 cohorts, which leaves us with N=153 aggregate observations for each country and educational group analysis.

Measuring unemployment we use the definition of the international labour organisation (ILO 1982), where people are defined as unemployed if they are economically inactive and either officially registered as unemployed or actively in search of and available to start a job. The *cohort unemployment rate* is measured as the percentage of unemployed on the total active labour force (which includes the employed and unemployed) in a respective cohort/survey year. Fixed-term work is measured to include people who report having a temporary work contract of limited duration. The *cohort fixed-term rate* is the share of people in a cohort/survey year, who are employed in fixed-term work, out of the total amount of people in dependent employment (which includes fixed-term or permanent employment). Involuntary part-time work captures people indicating to work part-time (self-reported and not according to number of hours worked) and who additionally report that they have taken this part-time job because they could not find a full-time position¹¹. The *cohort rate of people in involuntary part-time* is the share of people in a cohort/survey year reporting to involuntarily work part-time out of the total amount of people in dependent employment in the same cohort/survey year (which includes involuntary and voluntary part-time as well as full-time employment).

The school-leaver cohorts graduating in different years from school were exposed to different entry conditions such as differing levels of aggregate youth unemployment. This study's interest lie in the effects of these different entry conditions on the subsequent career evolvement of the school-leaver cohorts. We use secondary data from the world bank (<http://www.theglobaleconomy.com>) to measure aggregate youth unemployment. The data provide youth unemployment rates for the selected countries for each year since 1991 that are similarly measured according to the ILO-definition of unemployment (ILO 1982).

⁹ For the UK the variable on the year of completion of the highest education level is only available from 2001 onwards while for other countries it is also not available prior to 1998.

¹⁰ 12 years since graduation was the longest possible period for which data was available for all countries investigated to conduct the cohort-analyses outlined in the following section 6 of this Working Paper.

¹¹ For the UK no measure on involuntary part-time for the survey year 2008 exists.

6. Analyses

We make use of weighted least squares linear regression analysis, where (as the analyses are based on aggregate data) the number of observations underlying the calculation of aggregate cohort employment outcomes enters as a weight (see Stock and Watson 2012, 725-730). The linear regression analyses are set up as follows:

$$U_{ct} = \alpha + \beta_1[u_entry_c] + \beta_2[u_entry_c] \times [T(years)_{ct}] + \beta_3[T(years)_{ct}] + \beta_3 U_t + Z_c \gamma + \varepsilon_{ct}$$

, where U_{ct} is a vector capturing unemployment rates of cohort c in year t and $[u_entry_c]$ includes aggregate youth unemployment the school-leaver cohorts faced in the year of graduation. The vector $T(years)_{ct}$ captures the years since graduation. Because cohort unemployment does not linearly decline with the years since graduation this variable is transformed using fractional polynomials (see Royston and Altman 1994) such that for each country and separate outcome analyses a best-fitting transformation¹² is included.

To allow the effect of initial conditions (aggregate youth unemployment at graduation) to fade/increase over time an interaction ($[u_entry_c] \times [T(years)_{ct}]$) between the years since graduation and aggregate youth unemployment at graduation is included. The vector U_t includes aggregate yearly unemployment of the working age population [15-64] in each survey year investigated and serves as a control for further shocks in the labour market over the investigation period of 2001-2013. Z_c is a set of cohort specific control variables, including the male share of the cohort, the mean age and the standard deviation of the age characterising the cohort as well as a 4-year band of cohort dummies to control for cohort effects (see e.g., de Vreyer et al. 2000).

¹² The search for a best-fitting transformation of the variable “years since graduation” was performed over the power term range [-3 -2.5 -2 -1.5 -1 0(= logarithm) 1 1.5 2 2.5 3]. The following transformations for the variable “years since graduation” are used in the analyses 1-6:

- 1) Upper secondary education/ outcome: unemployment (power terms): CH: -1, DE: -1.5, FI: 0.5, ES: 0 (ln), UK: 3
- 2) Upper secondary education/ outcome: fixed-term (power terms): CH: 0 (ln), DE: 0.5, FI: 0.5, ES: 0.5, UK: 0.5
- 3) Upper secondary education/ outcome: inv. part-time (power terms): CH: -2, DE: -1.5, FI: -1, ES: 1.5, UK: -1
- 4) Tertiary education/ outcome: unemployment (power terms): CH: -2.5, DE: -3, FI: -0.5, ES: -0.5, UK: -0.5
- 5) Tertiary education/ outcome: fixed-term (power terms): all 0 (ln)
- 6) Tertiary education/ outcome: inv. part-time (power terms): CH: 0(ln), DE: 3, FI: -3, ES: 0(ln), UK: -0.5

Investigating besides successive cohort unemployment their engagement in fixed-term and involuntary part-time employment, the dependent variable U_{ct} is changed for these analyses to capture average fixed-term or involuntary part-time employment of cohort c in year t , while U_t then includes aggregate yearly fixed-term or involuntary part-time employment to control for yearly fluctuations in the share of these work arrangements in different European labour markets.

The analyses are conducted in the software framework of Stata (14) and standard error estimates take into account clustering in residuals within cohorts.

We further report on potential gender differences in scarring effects within educational groups of school-leavers. Yet, gender separated analyses are often based on small numbers and not very robust. These gender separate results are thus not presented in tables and we only hint at them in case the empirical results found are suggestive of gender differences in scarring.

7. Results

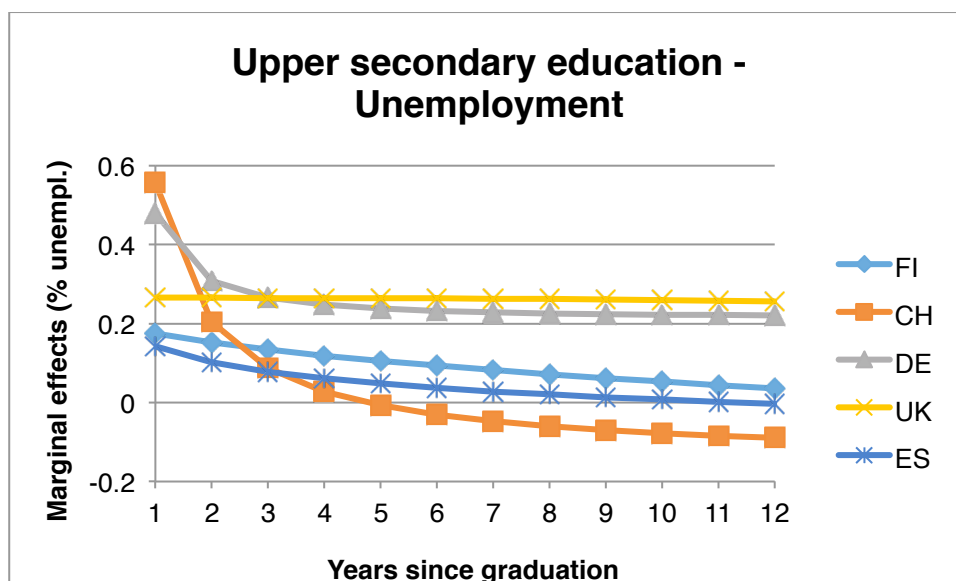
7.1 Unemployment Scarring

Focusing on unemployment scarring for cohorts with *upper secondary education* (see *Figure 2* and *Table 2*) findings show a quick drop of effects of aggregate youth unemployment on subsequent cohort unemployment for Switzerland, while no unemployment scarring seems to be prevalent in Spain and Finland. For both the UK and Germany, however, cohorts with upper secondary education graduating at a bad time are affected by bad initial labour market conditions in terms of increased subsequent unemployment much longer. Hence, results for cohorts with upper secondary education suggest unemployment scars to be particularly persistent in the UK and Germany.

One may note that additional results not presented in the tables below suggest unemployment scarring in the UK to particularly affect male school-leaver cohorts with upper secondary education, while in Germany unemployment scarring seems longer lasting for female cohorts with upper secondary education. Focusing only on female graduate cohorts with upper secondary education in Finland, results are also suggestive of long lasting scarring effects.

Figure 2 and *Table 2* show marginal effects of aggregate youth unemployment at graduation on cohort unemployment over 12 years since graduation for school-leaver cohorts with upper secondary education.

Figure 2. Upper secondary education: successive unemployment



Reading example: 1% higher aggregate youth unemployment at graduation is associated with 0.5 percentage points higher unemployment one year after graduation for Swiss cohorts with upper secondary education.

Table 2. Upper secondary education: successive unemployment

Years since graduation	FI		CH		DE		UK		ES	
	M.E.	S.E.	M.E.	S.E.	M.E.	S.E.	M.E.	S.E.	M.E.	S.E.
1	0.176	0.151	0.557^(*)	0.284	0.480^(*)	0.233	0.265*	0.074	0.142	0.101
2	0.152	0.121	0.204	0.143	0.308*	0.118	0.265*	0.074	0.102	0.068
3	0.134	0.101	0.087	0.112	0.266*	0.099	0.265*	0.073	0.078	0.053
4	0.119	0.086	0.028	0.104	0.248*	0.094	0.265*	0.072	0.061	0.047
5	0.106	0.077	-0.007	0.103	0.238*	0.092	0.265*	0.071	0.048	0.046
6	0.093	0.073	-0.031	0.103	0.232*	0.091	0.264*	0.071	0.037	0.048
7	0.082	0.073	-0.047	0.105	0.229*	0.090	0.263*	0.076	0.028	0.052
8	0.072	0.076	-0.060	0.106	0.226*	0.090	0.262*	0.088	0.020	0.056
9	0.062	0.082	-0.070	0.107	0.224*	0.090	0.261*	0.109	0.014	0.060
10	0.053	0.089	-0.078	0.108	0.223*	0.090	0.260^(*)	0.141	0.007	0.064
11	0.044	0.097	-0.084	0.109	0.222*	0.090	0.258	0.184	0.002	0.068
12	0.036	0.106	-0.089	0.110	0.221*	0.090	0.256	0.239	-0.003	0.072

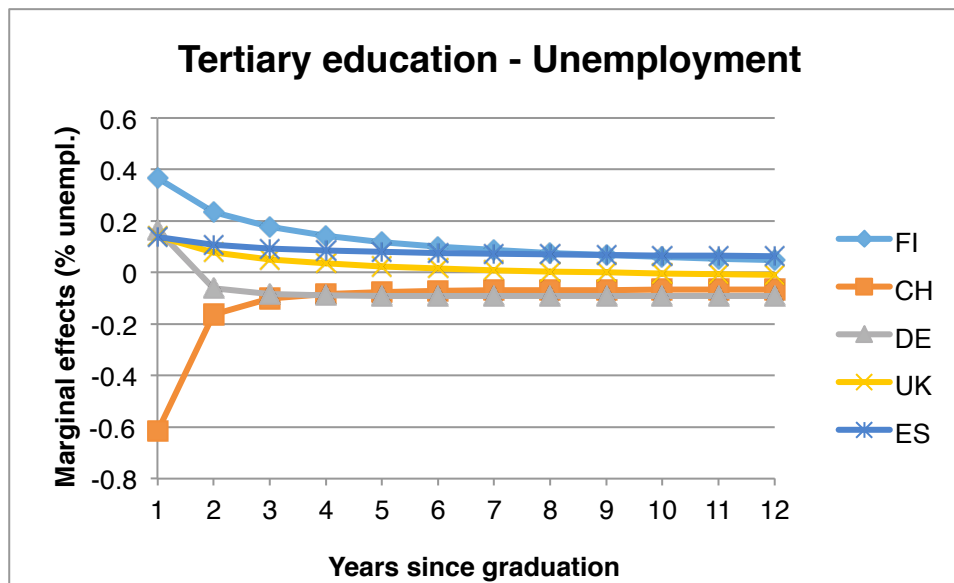
* $p \leq 0.05$ (*) $p \leq 0.1$

Turning to the *highly educated* cohorts (see Figure 3 and Table 3), we find highly educated graduating in a worse economy in Finland to experience longer-term unemployment scars lasting around 11 years since graduation. In line, even though at lower levels, results for Spain also suggest significant detrimental effects of graduating at a time of higher aggregate youth unemployment on subsequent cohort unemployment for highly educated, persisting in significance around 6-8 years. While for the UK some impact of worse entry conditions are still observed 1-2 years after graduation for highly educated, in Switzerland and Germany higher youth unemployment at graduation seems not to coincide with worse employment prospects for

highly educated.¹³ Graduating at a bad time they are even less affected by unemployment, suggesting a very distinct integration of highly educated which seems not to vary with the youth labour market conditions¹⁴.

Focusing on *gender separate analyses* results suggest particularly female school-leaver cohorts with tertiary education graduating in a slack economy to experience longer-term unemployment scars in Finland, with highly educated male school-leaver cohorts initially experiencing higher effects on successive unemployment which are, however, more quickly vanishing. The negative effects of initial youth labour market conditions found for Switzerland seem to be driven by highly educated female school-leaver cohorts.

Figure 3. Tertiary education: successive unemployment



Reading example: 1% higher aggregate youth unemployment at graduation is associated with 0.06 percentage points lower unemployment one year after graduation for Swiss cohorts with tertiary education.

¹³ Note that those country-specific results show some sensitivities: For Finland and Spain if we do not control for cohort specific variables and cohort fixed-effects we would find some years of scarring while the results for Germany depend on the inclusion of the school-leaver cohort who graduated in 2003, who is especially affected by scarring. Excluding this school-leaver cohort results in fewer years (only about 4 years, sign. at $p \leq 0.1$) of scarring.

¹⁴ This may have to do with the fact that in these countries highly educated graduates are mainly not at a youth age anymore and the aggregate measure of youth unemployment may not really depict their entry conditions and prospects. In Switzerland, Germany (and in Finland) age of highly educated graduates is higher compared to the UK and Spain (see as example Little and Tang 2008, 20). One should note however that using aggregate total unemployment at entry or unemployment rates for tertiary educated young adults between 25-30 years as predictor for future cohort unemployment does not alter the main conclusion.

For Spain results suggest only male school-leaver cohorts with tertiary education are scarred in the long-term (about 6 years) by higher successive unemployment.

Figure 3 and Table 3 show marginal effects of aggregate youth unemployment at graduation on cohort unemployment over 12 years since graduation for highly educated cohorts¹⁵.

Table 3. Tertiary education: successive unemployment

Years since graduation	FI		CH		DE		UK		ES	
	M.E.	S.E.	M.E.	S.E.	M.E.	S.E.	M.E.	S.E.	M.E.	S.E.
1	0.366*	0.163	-0.615	0.288	0.164	0.154	0.141^(*)	0.069	0.138*	0.060
2	0.235*	0.092	-0.162^(*)	0.069	-0.060	0.057	0.079^(*)	0.041	0.107*	0.033
3	0.177*	0.062	-0.100^(*)	0.057	-0.083	0.055	0.051	0.037	0.094*	0.028
4	0.142*	0.045	-0.082^(*)	0.057	-0.088	0.055	0.035	0.038	0.085*	0.029
5	0.118*	0.035	-0.075^(*)	0.057	-0.090	0.055	0.024	0.041	0.080*	0.032
6	0.101*	0.028	-0.071^(*)	0.057	-0.091	0.055	0.016	0.043	0.076*	0.034
7	0.087*	0.024	-0.069^(*)	0.057	-0.091	0.055	0.009	0.045	0.073^(*)	0.037
8	0.076*	0.022	-0.068^(*)	0.058	-0.092	0.055	0.004	0.048	0.070^(*)	0.038
9	0.067*	0.022	-0.067^(*)	0.058	-0.092	0.055	0.000	0.049	0.068	0.040
10	0.060*	0.023	-0.067^(*)	0.058	-0.092	0.055	-0.004	0.051	0.066	0.042
11	0.053*	0.024	-0.066^(*)	0.058	-0.092	0.055	-0.007	0.052	0.065	0.043
12	0.047^(*)	0.025	-0.066^(*)	0.058	-0.092	0.055	-0.010	0.054	0.063	0.044

* $p \leq 0.05$ (*) $p \leq 0.1$

Brief and tentative theory-driven interpretation

There is no clear pattern if the full lengths of unemployment scarring is taken into account. However some institutional contexts may matter at an earlier stage, other at a later stage of the scarring:

Upper secondary education: UK, DE and CH (short term only) are all countries where scarring can be observed. This might be due to a stigma effect of unemployment in those three countries due to the generally relatively low (UK: moderate) youth unemployment. Whereas the stigma effect seems to fade off in Switzerland until the second year, scarring persists in DE and the UK. Scarring may persist in Germany due

¹⁵ Note that the following country-specific results show some sensitivities: For the UK if we do not control for cohort specific variables and cohort fixed-effects we would find significant long-term scarring while exclusion of school-leaver cohorts graduating in 2003 or 2010 for Finland results in somewhat smaller point estimates. However, the main conclusion on longer-term scarring remains similar.

to the less liberal employment protection (compared to Switzerland). And scarring may persist in the UK due to a weak VET system (again compared to Switzerland).

Tertiary education: In both FI and ES, the tertiary education graduates face rather long-lasting unemployment scarring compared to DE and especially to CH. In the UK scarring effects fade off after two years to an intermediate position. Thereby tertiary graduates in the three countries with relatively high tertiary education shares are more affected by (early) scarring compared to CH and DE, both with lower tertiary education shares at the times of observation. A reason why scarring of tertiary graduates who face early unemployment may persist in FI and ES are the less liberal EPL compared to the UK.

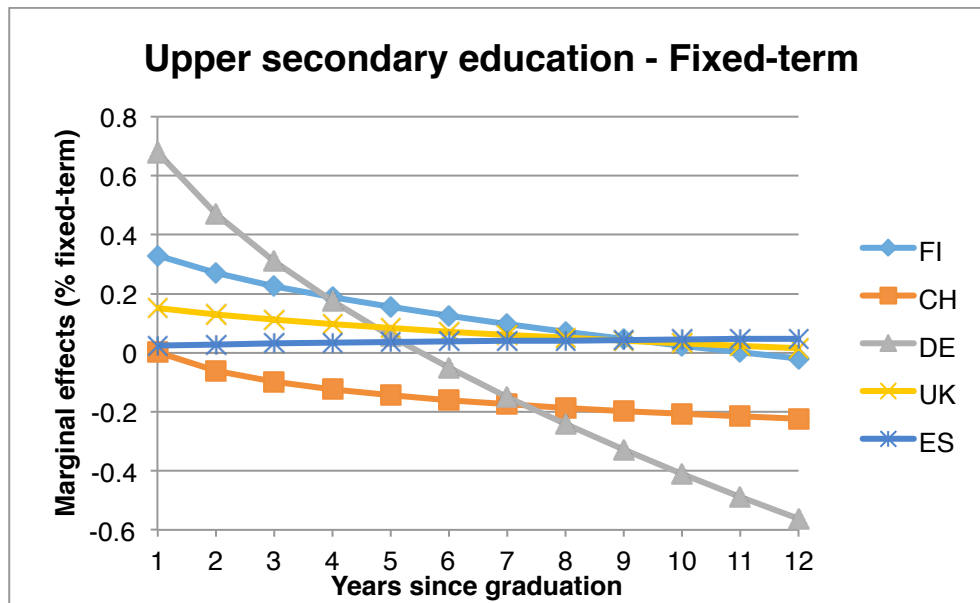
7.2 Fixed-term work

Turning to effects of graduating at a time of higher aggregate youth unemployment on subsequent engagement in fixed-term work for cohorts with *upper secondary education* (see *Figure 4* and *Table 4*) we find the following results: For Germany we find higher aggregate youth unemployment at entry to increase the participation of cohorts with upper secondary education in fixed-term jobs in the first 2 years while after 8 years higher aggregate youth unemployment at entry is negatively associated with engagement in fixed-term employment. In other countries higher aggregate youth unemployment seems not significantly related with increased participation in fixed-term employment among cohorts with upper secondary education. Hence, careers of cohorts with upper secondary education graduating at a bad time seem not to be marked by generally higher engagement in fixed-term work.

Based on *gender separated analyses* run in the background, however, we find results suggestive of scarring in the domain of increased fixed-term employment for female graduate cohorts with upper secondary education in Spain, lasting over a period of 12 years. As a side remark, we may also note that in the UK female graduate cohorts with upper secondary education graduating during an unfavourable time experience somewhat higher participation in fixed-term work in the first three years. In Finland we find some increase in engagement in fixed-term employment for female school-leaver cohorts who graduated at times of a worse youth labour market. In Switzerland, on the contrary, results suggest that it is rather amongst the male school-leaver cohorts with upper secondary education where (although not significant) an association between graduating at a time of higher aggregate unemployment and subsequent overrepresentation in fixed-term jobs can be observed. For Germany our results suggest no gender-specific pattern.

Figure 4 and *Table 4* show marginal effects of aggregate youth unemployment at graduation on engagement in fixed-term employment over 12 years since graduation for cohorts with upper secondary education.

Figure 3. Upper secondary education: scarring effects concerning engagement in fixed-term employment



Reading example: 1% higher youth unemployment at graduation is associated with 0.3 percentage points higher engagement in fixed-term work one year after graduation for Swiss cohorts with upper secondary education.

Table 4. Upper secondary education: scarring effects concerning engagement in fixed-term employment

Years since graduation	FI		CH		DE		UK		ES	
	M.E.	S.E.	M.E.	S.E.	M.E.	S.E.	M.E.	S.E.	M.E.	S.E.
1	0.330	0.329	0.001	0.761	0.679*	0.278	0.152	0.128	0.024	0.158
2	0.271	0.268	-0.062	0.528	0.470*	0.222	0.129	0.109	0.028	0.129
3	0.226	0.225	-0.098	0.397	0.310	0.183	0.111	0.097	0.031	0.108
4	0.188	0.192	-0.124	0.309	0.175	0.153	0.097	0.090	0.034	0.094
5	0.155	0.167	-0.144	0.247	0.056	0.133	0.084	0.086	0.036	0.084
6	0.125	0.151	-0.161	0.206	-0.051	0.121	0.072	0.085	0.038	0.078
7	0.097	0.141	-0.175	0.180	-0.150	0.117	0.061	0.086	0.040	0.075
8	0.071	0.139	-0.187	0.170	-0.242^(*)	0.120	0.051	0.089	0.042	0.077
9	0.046	0.143	-0.197	0.171	-0.328*	0.128	0.041	0.093	0.044	0.080
10	0.023	0.152	-0.207	0.180	-0.410*	0.141	0.032	0.098	0.045	0.086
11	0.002	0.163	-0.216	0.193	-0.488*	0.155	0.024	0.103	0.047	0.093
12	-0.019	0.178	-0.223	0.210	-0.562*	0.171	0.016	0.109	0.048	0.100

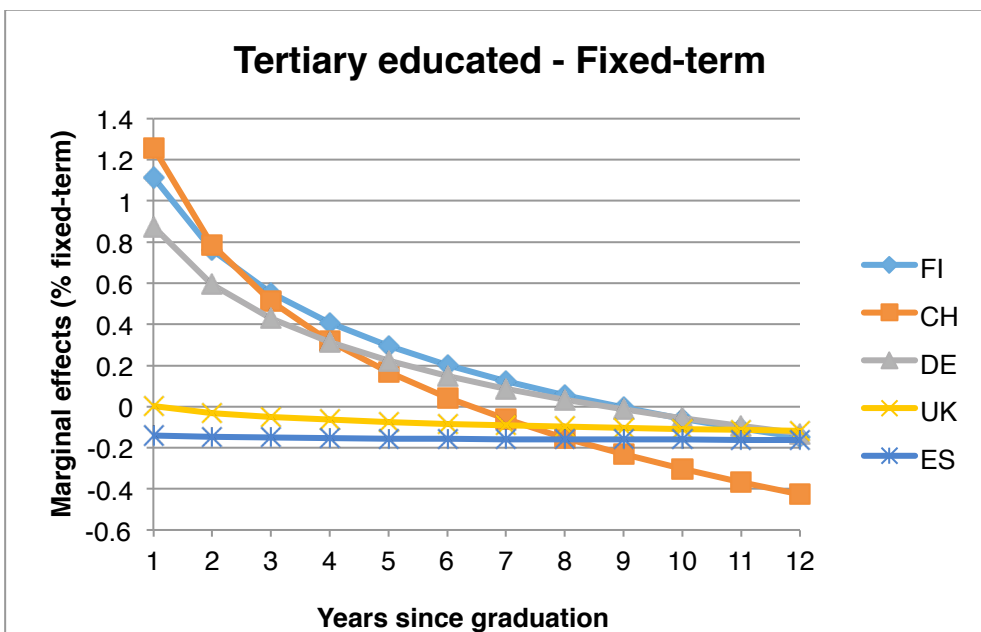
* $p \leq 0.05$ (*) $p \leq 0.1$

As far as the *highly educated cohorts* who faced different entry level conditions are concerned (see *Figure 5* and *Table 5*) results suggest initial scarring to be present in Finland, Switzerland and Germany, while in Spain and the UK the highly educated cohorts who faced worse youth labour

markets at entry seem to experience no scarring on this employment outcome¹⁶.

Turning to *gender separated analyses* results suggest that particularly female cohorts with tertiary education in Switzerland are affected by higher participation in fixed-term work with yet a slightly increasing share of male graduate cohorts with tertiary education who faced worse initial conditions engaging in fixed-term jobs in later years.

Figure 5. Tertiary educated: scarring effects concerning engagement in fixed-term employment



Reading example: 1% higher aggregate youth unemployment at graduation is associated with 1.2% higher engagement in fixed-term work one year after graduation for Swiss cohorts with tertiary education.

¹⁶ Including a measure for unemployment rates of tertiary educated between the ages of 25-30 years in the analysis (based on EUROSTAT data) instead of youth unemployment we find somewhat longer-lasting scar effects for Switzerland (up to 9 years) on the dimension of fixed-term employment while for Finland point estimates turn out to be not significant. However, caution is needed because valid numbers were not available for all years and hence had to be imputed and the missing information for the initial years 1991-1994/5 (concerning CH and FI) could not be imputed – they are hence excluded.

Figure 5 and Table 5 show marginal effects of aggregate youth unemployment at graduation on engagement in fixed-term employment over 12 years since graduation for tertiary educated cohorts¹⁷.

Table 5. Tertiary educated: scarring effects concerning engagement in fixed-term employment

Years since graduation	FI		CH		DE		UK		ES	
	M.E.	S.E.	M.E.	S.E.	M.E.	S.E.	M.E.	S.E.	M.E.	S.E.
1	1.114*	0.409	1.258*	0.451	0.874*	0.236	0.003	0.114	-0.142	0.192
2	0.761*	0.285	0.788*	0.309	0.594*	0.164	-0.030	0.076	-0.148	0.131
3	0.554*	0.214	0.513*	0.233	0.430*	0.134	-0.050	0.062	-0.151	0.099
4	0.408*	0.167	0.318	0.187	0.314*	0.125	-0.064	0.059	-0.154^(*)	0.080
5	0.294*	0.132	0.167	0.161	0.224^(*)	0.126	-0.075	0.061	-0.155*	0.069
6	0.201^(*)	0.108	0.043	0.148	0.150	0.132	-0.084	0.066	-0.157*	0.064
7	0.123	0.092	-0.061	0.146	0.088	0.140	-0.092	0.071	-0.158*	0.064
8	0.055	0.083	-0.152	0.150	0.034	0.149	-0.098	0.077	-0.159*	0.066
9	-0.005	0.081	-0.232	0.159	-0.014	0.158	-0.104	0.082	-0.160*	0.070
10	-0.059	0.085	-0.303^(*)	0.170	-0.057	0.168	-0.109	0.088	-0.161*	0.075
11	-0.107	0.091	-0.368^(*)	0.182	-0.095	0.176	-0.114	0.093	-0.162^(*)	0.080
12	-0.152	0.100	-0.427*	0.194	-0.130	0.185	-0.118	0.098	-0.163^(*)	0.085

* $p \leq 0.05$ (*) $p \leq 0.1$

Brief and tentative theory-driven interpretation

Upper secondary education: In contrast to the other countries (which, if at all, face mainly short-term effects) Spain stands out with *female* upper secondary education cohorts overrepresented in fixed-term employment when faced with a bad labour market at entry. With regard to the potentially scarring relevant institutional dimensions characterising this country, these persistent effects may be explained by the absence of a vocational education system promising better post-unemployment job matches for secondary educated graduate cohorts in combination with the countries strict employment protection legislations that potentially hinder re-entry of affected cohorts in stable core employment. Further, one may note that Spain lacks a profound implementation of active labour market policies that target a sustainable reintegration of young people and support them in finding stable employment.

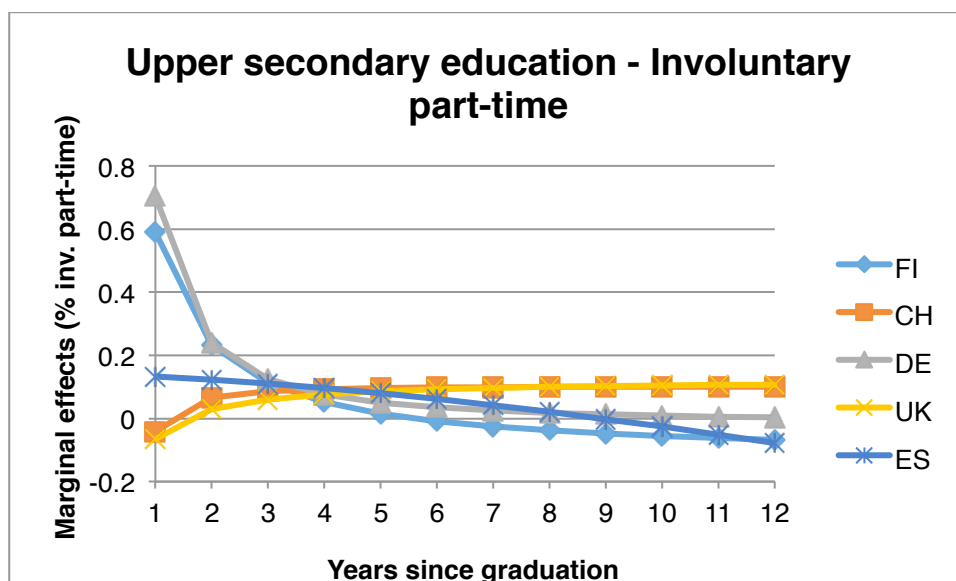
¹⁷ Note that the country-specific results show some sensitivities: For Finland and Germany if we do not control for cohort specific variables and cohort fixed-effects we would find no significant effects beyond the first year after graduation while exclusion of school-leaver cohorts graduating in 2003 for Switzerland results in longer-term scarring of about 5 years.

Tertiary education: What is striking in this regard is that scarring in the domain of fixed-term employment for tertiary education graduate cohorts mainly exists in countries where the majority of young people pursue vocational education at the upper-secondary level (CH, DE and FI). While Switzerland and Germany have well-established dual vocational education systems, in Finland vocational education is also wide-spread at the upper secondary level but is mainly pursued in school-based form. Hence, it seems that when the economy worsens in VET countries, tertiary education graduates may not lose employment prospects in general but they may face more risk-averse hiring behaviour of employers and need to put up with jobs that are of a contractually limited duration – with repeat cycles of fixed-term employment this can result in careers of fixed-term jobs.

7.3 Involuntary part-time work

Focusing on involuntary engagement in part-time work among cohorts with *upper secondary education* (see *Figure 6* and *Table 6*), results suggest that cohorts with upper secondary education graduating at a bad time in both Finland and Germany to be adversely affected by remarkably higher engagement in involuntary part-time employment in the first few years. In both Germany and Spain effects are significant up to 5 years after graduation while for Finland we find significant effects for 2 years after graduation, which is consistent with the findings of Duell et al. (2009). Interestingly, in both the UK and Switzerland cohorts graduating during the time when aggregate youth unemployment is higher are initially not overrepresented in involuntary part-time employment. However, there is an increase in involuntary part-time employment (sign. effects at $p < 0.1$) in later years.

Figure 6. Upper secondary education: scarring effects concerning involuntary engagement in part-time work



Reading example: 1% higher aggregate youth unemployment at graduation is associated with -0.06 percentage points lower engagement in involuntary part-time work one year after graduation for Swiss cohorts with upper secondary education.

Turning to *gender separated analyses* we find the increase of cohorts who graduated at times of higher aggregate youth unemployment in subsequent unemployment to particularly affect male school-leaver cohorts in Switzerland. It is particularly amongst the group of men with upper secondary education who graduate in bad times, where an increase in involuntary participation in part-time employment can be observed. In Finland, initial overrepresentation of cohorts with upper secondary education particularly pertains to female school-leaver cohorts.

Figure 6 and Table 6 show marginal effects of aggregate youth unemployment at graduation on involuntary engagement in part-time work over 12 years since graduation for cohorts with completed upper secondary education¹⁸.

Table 6. Upper secondary education: scarring effects concerning involuntary engagement in part-time work

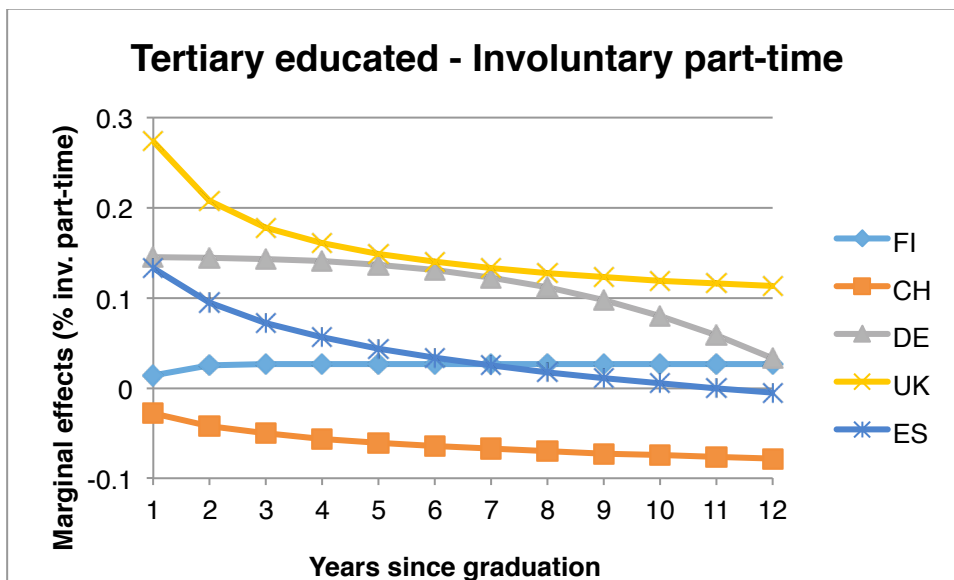
Years since graduation	FI		CH		DE		UK		ES	
	M.E.	S.E.	M.E.	S.E.	M.E.	S.E.	M.E.	S.E.	M.E.	S.E.
1	0.591*	0.238	-0.041	0.182	0.705*	0.088	-0.065	0.077	0.133*	0.058
2	0.232*	0.106	0.066	0.046	0.241*	0.028	0.029	0.038	0.123*	0.055
3	0.112	0.071	0.086^(*)	0.044	0.125*	0.021	0.061	0.041	0.111*	0.051
4	0.052	0.059	0.093^(*)	0.048	0.076*	0.022	0.076	0.046	0.096*	0.046
5	0.016	0.055	0.097^(*)	0.050	0.051*	0.023	0.086^(*)	0.050	0.080^(*)	0.042
6	-0.008	0.055	0.098^(*)	0.052	0.036	0.024	0.092^(*)	0.052	0.062	0.037
7	-0.025	0.055	0.099^(*)	0.053	0.025	0.025	0.096^(*)	0.054	0.042	0.033
8	-0.038	0.056	0.100^(*)	0.053	0.018	0.026	0.100^(*)	0.056	0.021	0.031
9	-0.048	0.057	0.101^(*)	0.054	0.013	0.026	0.102^(*)	0.057	-0.002	0.031
10	-0.056	0.058	0.101^(*)	0.054	0.009	0.026	0.105^(*)	0.058	-0.026	0.034
11	-0.062	0.059	0.101^(*)	0.054	0.006	0.027	0.106^(*)	0.059	-0.051	0.040
12	-0.068	0.060	0.101^(*)	0.054	0.004	0.027	0.108^(*)	0.060	-0.078	0.047

* $p \leq 0.05$ (*) $p \leq 0.1$

¹⁸ Note that the following country-specific results show some sensitivities: For the UK if we do not include cohort-specific controls and/or if we excluded the school-leaver cohort graduating in 2008 we would find no increase in effects. Similarly for Switzerland not including the school-leaver cohorts graduating in 2003 and 1993 there was no increase in effects. For Spain not including the school-leaver cohort 2008 in the analysis or including yearly fixed-effects instead of the yearly share of involuntary part-time workers as control for yearly shocks results in not significant scarring.

Turning to the empirical results for involuntary part-time among *highly educated cohorts* (see *Figure 7* and *Table 7*) these suggest scarring in terms of an overrepresentation in involuntary part-time to be particularly prevalent and long-lasting in the UK – lasting well over the period of 12 years observed. Point estimates for Germany also show positive effects of aggregate youth unemployment at entry on future involuntary engagement in part-time work, which are, however, not significant¹⁹. For Spain, although at a lower level, point estimates are significant for up to 4 year, suggesting some initial overrepresentation in involuntary part-time work when graduating at a bad time. For Switzerland and Finland – on the contrary – when graduating at a time of higher aggregate youth unemployment, highly educated cohorts seem not to face increased risk of involuntary part-time employment throughout their subsequent careers.

Figure 7. Tertiary educated: scarring effects concerning involuntary engagement in part-time work



Reading example: 1% higher aggregate youth unemployment at graduation is associated with 0.03 percentage points lower engagement in involuntary part-time work one year after graduation for Swiss cohorts with tertiary education.

Focusing on *gender differences* in scarring we find initial overrepresentation in involuntary part-time among highly educated cohorts to particularly pertain to female cohorts in Spain with yet male cohorts affected by worse entry conditions experiencing some increase in involuntary part-time in later years. In the UK both

¹⁹ Including a measure on unemployment rates of highly educated between the age of 25-30 years instead of youth unemployment results in somewhat higher and significant effects (7-8 years) for Germany. Hence, results point in the direction of scarring on the dimension of involuntary part-time for highly educated entrants in Germany who enter the labour market at a bad time.

male and female cohorts are affected by involuntary part-time work in the longer run. Gender separated analyses for Germany also reveal some (significant) initial effects of heightened youth unemployment on subsequent engagement in involuntary part-time positions affecting both female and male cohorts in first few years.

Figure 7 and Table 7 show marginal effects of aggregate youth unemployment at graduation on engagement in involuntary part-time work over 12 years since graduation for tertiary educated cohorts²⁰.

Table 7. Tertiary educated: scarring effects concerning involuntary engagement in part-time work

Years since graduation	FI		CH		DE		UK		ES	
	M.E.	S.E.	M.E.	S.E.	M.E.	S.E.	M.E.	S.E.	M.E.	S.E.
1	0.014	0.192	-0.028	0.089	0.145	0.091	0.273*	0.107	0.133*	0.057
2	0.025	0.045	-0.042	0.055	0.144	0.090	0.207*	0.063	0.095*	0.040
3	0.026	0.043	-0.050	0.042	0.143	0.089	0.178*	0.048	0.072*	0.031
4	0.027	0.043	-0.056	0.039	0.141	0.087	0.161*	0.043	0.056*	0.027
5	0.027	0.043	-0.061	0.042	0.137	0.084	0.149*	0.041	0.044	0.025
6	0.027	0.044	-0.064	0.047	0.131	0.080	0.140*	0.041	0.034	0.025
7	0.027	0.044	-0.067	0.052	0.123	0.075	0.133*	0.042	0.025	0.026
8	0.027	0.044	-0.070	0.057	0.112	0.071	0.128*	0.043	0.018	0.028
9	0.027	0.044	-0.072	0.063	0.098	0.070	0.123*	0.044	0.011	0.029
10	0.027	0.044	-0.075	0.068	0.080	0.075	0.119*	0.045	0.005	0.031
11	0.027	0.044	-0.076	0.072	0.058	0.090	0.116*	0.046	0.000	0.033
12	0.027	0.044	-0.078	0.077	0.033	0.115	0.113*	0.047	-0.005	0.035

* $p \leq 0.05$ (*) $p \leq 0.1$

Brief and tentative theory-driven interpretation

It seems that in all countries secondary and/or tertiary education cohorts who faced a worse economy at entry are (or become) overrepresented in involuntary part-time work. The pattern found could not be explained by institutional dimensions. The findings may generally reflect that entering the labour market when the economy is bad scars careers of graduate cohorts (apart from successive unemployment) by a weaker establishment and integration in primary labour market segments with good career prospects.

²⁰ Note that the country-specific results show some sensitivities: For Finland and Germany we would find significant longer-term effects if school-leaver cohorts 1991 resp. 2004/2005 were excluded while exclusion of school-leaver cohorts graduating in 2008 or 2012 for Spain results in no significant scarring effects in first years.

8. Summary of comparative findings

The following *Tables 8-9* briefly summarise the above reported findings in a comparative way, where long-term scar refers to scarring effects persisting at least six years, medium-term scar refers to a scar lasting between three to five years and a short-term effect includes an initial effect of up to two years since graduation.

We may note that we find scarring on employment outcomes such as successive unemployment, fixed-term employment and involuntary part-time work in very diverse contexts such that the explanatory power of the institutional dimensions assumed to mitigate scarring may be questionable. Cohorts entering the labour market at a bad time and were confronted with early career unemployment and/or faced difficulties in quickly establishing themselves in (stable) employment with good career prospects seem to experience scarred careers in one or another form in diverse configurations of institutional dimensions and contexts.

Table 8. Country overview of scarring: Upper secondary education cohorts

	Dimensions affecting YUE scarring				Scarring effects		
	Dual VET	Liberal EPL	Youth ALMP	YUE	Unemployment	Fixed-term	Involuntary part-time
DE	Yes	No	Stronger	Low	<i>long-term</i> (particularly <i>female</i>)	<i>short-term</i>	<i>medium-term</i>
CH	Yes	Yes	Moderate	Low	<i>short-term</i>	--	<i>increasing/emerging</i> (male)
FI	No	No	Stronger	High	suggestive of some <i>long-term</i> scar (<i>female</i>)	<i>short-term</i> (male) and <i>increasing effects</i> (<i>female</i>)	<i>short-term</i> scar – (<i>female</i>)
ES	No	No	Weaker	High	--	<i>long-term</i> scar (<i>female</i>)	<i>medium-term</i> scar
UK	No	Yes	Stronger	Moderate	<i>long-term</i> scar (particularly <i>male</i>)	<i>short-term</i> effects (<i>female</i>)	<i>increasing/emerging</i> scar

Table 9. Country overview of scarring: Tertiary education cohorts

	Dimensions affecting YUE scarring				Dimensions affecting YUE scarring		
	Dual VET	Liberal EPL	Youth ALMP	YUE	Unemployment	Fixed-term	Involuntary part-time
DE	Yes	No	Stronger	Low	--	<i>medium-term scar</i>	<i>longer-term scar</i> ²¹
CH	Yes	Yes	Moderate	Low	--	<i>medium-term scar</i> ²² (particularly)	--
FI	No	No	Stronger	High	<i>long-term scar (female), short-term (male)</i>	<i>medium-term scar</i>	--
ES	No	No	Weaker	High	<i>long-term scar (particularly male)</i>	--	<i>medium-term scar (particularly female)</i>
UK	No	Yes	Stronger	Moderate	<i>short-term</i>	--	<i>long-term scar</i>

9. Conclusion

In sum we find that bad luck in timing of labour market entry scars future careers of school-leaver cohorts concerning different subsequent employment outcomes across European countries. Graduating at a time of higher aggregate youth unemployment impacts subsequent cohort unemployment and leads to overrepresentation in insecure forms of work such as fixed-term and involuntary part-time employment.

Experiences of successively increased unemployment and engagement in marginal forms of work may be thought to further hamper career advancement of youth cohorts affected in other aspects such as concerning their wage and professional development, skill adequacy of employment etc. These aspects are not depicted in this study but deserve more in-depth attention in scarring analyses in future research in order to get a more comprehensive understanding on how a short-term scar in one employment domain may relate to longer-term scars in other domains.

²¹Using aggregate youth unemployment as regressor results are not significant but point estimates are comparatively large in magnitude. See footnote 17, significant longer-term scarring is found if a different measure for aggregate unemployment of tertiary educated is used as regressor.

²² See footnote 15, longer-term scar found if a different measure for aggregate unemployment at graduation is used.

All in all our findings point in the direction that in very diverse contexts entering the labour market at a bad time leads to further consequences for the careers of young people (cohorts). This is a result that should be of high interest to policy-makers preventing “lost generations” – as in no single configuration of institutional settings worse initial conditions may be seen as only a temporary setback. The case studies conducted for the five European countries – Finland, Switzerland, Germany, the UK and Spain - exploring the dynamics of scarring in different European societies yet suggest remarkable between-country differences in the pattern of scarring as well as they suggest profound within country differences across educational and gender groups. Further, one should note that our results are sensitive to the inclusion/exclusion of specific school-leaver cohorts suggesting that there may be some heterogeneity in scarring over time, respectively over entry cohorts.

This study has made an attempt to analyse long-term scarring in a cross-country comparative way and in this regard contributes methodologically to the literature on scarring effects, providing an example of how comparability in results may be established given nowadays data availability (mainly cross-section data) for cross-country comparisons of long-term scarring processes. This study may further be regarded as an attempt to describe and depict scarring in context, considering diverse institutional dimensions as potential mitigating factors. By analysing engagement in volatile work it further goes beyond the focus on scars in form of successive unemployment which neglects scarred careers through instable and insecure (“secondary”) employment. Apart from providing an innovative example to explore scarring from a cross-country comparative perspective this ambitious attempt draws attention to several shortcomings in the literature on scarring, such as first and foremost a theoretical deficit concerning context factors that explain differential patterns and persistency in scarring across institutional settings, social groups, and their potential intersectionalities.

A main insight of our contribution is that the macro-hypotheses on the mitigating impact of different institutional and contextual dimensions, upon which empirical research has so far drawn in order to explain differential scarring effects seem not too convincing in explaining differential scarring from a case study perspective. There seems to be a lack in convincing theoretical elaborations with respect to the explanation of institutional variation in scarring and how scarring operates in differential institutional and socio-cultural contexts. Future research should engage more in theoretically explaining heterogeneity in scarring effects across institutional dimensions and social groups and to foster theoretical development in this regard. In addition, future empirical research could provide more in depth knowledge on mechanisms through which scarring may operate, such as, differential recruitment practices and differential evaluation of disrupted work histories across contexts (for which employer-surveys - such as for example conducted by Hyggen et al. (2016) - seem to be promising). Further, studies on motivational and job-search behavioural consequences of the experience of unemployment in different contexts may help providing more empirically grounded knowledge on (differential) self-selection (maybe also policy driven selection) of the unemployed into jobs with few prospects. Inconclusiveness about which institutional dimensions may mitigate or foster scarring

has also to do with the approach of this study, in which only a small number of countries were compared. However, as various institutional and socio-cultural dimensions may interact and impact scarring in a combined way we are not sure if an increase in the number of countries and an inclusion of some additional institutional dimensions as regressors in an analysis would really help in solving this issue, since it may still remain unclear if the effects of institutional arrangements really stem from the specific institutional aspects or if they may rather reflect configurations of socio-cultural / institutional and country specific factors etc.

Further dimensions beyond the institutional context such as for example the degree of globalisation (see e.g. de Lange et al. 2014) – while in its effect intertwined with the institutional setting – may also need additionally be considered at a play driving/ shifting unemployment scarring. For example, an increase in flexible and non-standard work arrangements may shifts unemployment scarring towards scarring of engagement in atypical/marginal forms of employment and non-standard careers, which may (besides and in addition to the experience of unemployment) be evaluated as negative productivity indicators by employers (Pedulla 2016). Hence, a simple focus on unemployment exposure – comparing careers of those experiencing unemployment to those in employment – may not suffice to comprehensively depict scarring.

In the light of skill-biased technological change and processes of crowding-out we may also increasingly need to think about scarring of differential forms across different social groups. While previous unemployment exposure hinders re-entry of lower educated into employment and scars them by the experience of successive unemployment and marginal employment, the highly educated may not loose prospects for subsequent employment (crowding out lower educated) when having experienced unemployment. Instead, they may face scarred careers due to engagement in positions for which they are overeducated or without prospects for professional development hampering their (re-)entry into the high skill segment. In addition, differences in “shifts of scarring” may exist across industries, occupations and diplomas acquired in different contexts. To give an example in this regard, globalisation goes together with an increasing prevalence of international firms, which poses a challenge to the assertion of VET diplomas in countries with well-established VET systems as such diplomas are not well-known by these international employers (e.g., Schellenbauer et al. 2010). VET graduates may not count on the occupation-specific signalling power of their credentials when applying for positions in firms, which could potentially diminish the assumed mitigating effects of VET diplomas on unemployment scarring.

To conclude, in addition to the general lack in understanding what mechanisms are the relevant drivers of scarring in differential contexts, there is further a need to consider how scarring may shifts in differential contexts in the light of nowadays changes in the world of work.

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