

Bachmann, Ronald; Bechara, Peggy; Kramer, Anica; Rzepka, Sylvi

Research Report

A Study on Labour Market Transitions Using Micro-data from the Statistics on Income and Living Conditions (SILC). Final Report

RWI Projektberichte

Provided in Cooperation with:

RWI – Leibniz-Institut für Wirtschaftsforschung, Essen

Suggested Citation: Bachmann, Ronald; Bechara, Peggy; Kramer, Anica; Rzepka, Sylvi (2014) : A Study on Labour Market Transitions Using Micro-data from the Statistics on Income and Living Conditions (SILC). Final Report, RWI Projektberichte, Rheinisch-Westfälisches Institut für Wirtschaftsforschung (RWI), Essen

This Version is available at:

<https://hdl.handle.net/10419/111484>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



Projektbericht

Rheinisch-Westfälisches Institut für Wirtschaftsforschung

**A Study on labour market transitions
using micro-data from the Statistics
on Income and Living Conditions (SILC)**

Contract No. VC/2013/0020

Final Report – January 2014

Research Project for the European Commission –
DG Employment, social affairs and equal opportunities

Imprint

Vorstand des RWI

Prof. Dr. Christoph M. Schmidt (Präsident)

Prof. Dr. Thomas K. Bauer (Vizepräsident)

Prof. Dr. Wim Kösters

Verwaltungsrat

Dr. Eberhard Heinke (Vorsitzender);

Manfred Breuer; Dr. Henning Osthues-Albrecht; Reinhold Schulte (stellv. Vorsitzende);

Dr. Hans Georg Fabritius; Prof. Dr. Justus Haucap; Hans Jürgen Kerkhoff;
Dr. Thomas Köster; Dr. Thomas A. Lange; Martin Lehmann-Stanislawski;
Hans Martz; Andreas Meyer-Lauber; Hermann Rappen; Reinhard Schulz;
Dr. Michael N. Wappelhorst

Forschungsbeirat

Prof. Michael C. Burda, Ph.D.; Prof. Dr. Lars P. Feld; Prof. Dr. Stefan Felder;
Prof. Nicola Fuchs-Schündeln, Ph.D.; Prof. Timo Goeschl, Ph.D.; Prof. Dr. Justus
Haucap; Prof. Dr. Kai Konrad; Prof. Dr. Wolfgang Leininger; Prof. Regina T.
Riphahn, Ph.D.

Ehrenmitglieder des RWI

Heinrich Frommknecht; Prof. Dr. Paul Klemmer †; Dr. Dietmar Kuhnt

RWI Projektbericht

Herausgeber:

Rheinisch-Westfälisches Institut für Wirtschaftsforschung

Hohenzollernstraße 1/3, 45128 Essen, Germany

Phone +49 201-81 49-0, Fax +49 201-81 49-200, e-mail: rwi@rwi-essen.de

Alle Rechte vorbehalten. Essen 2013

Schriftleitung: Prof. Dr. Christoph M. Schmidt

**A Study on labour market transitions using micro-data from the Statistics
on Income and Living Conditions (SILC)**

Contract No. VC/2013/0020

Final Report – January 2014

Research Project for the European Commission –

DG Employment, social affairs and equal opportunities

Rheinisch-Westfälisches Institut für Wirtschaftsforschung

**A Study on labour market transitions
using micro-data from the Statistics
on Income and Living Conditions (SILC)**

Contract No. VC/2013/0020

Final Report – January 2014

Research Project for the European Commission –
DG Employment, social affairs and equal opportunities

Report

Project Team

Dr. Ronald Bachmann (Leader), Dr. Peggy Bechara (Leader), Anica Kramer, Sylvi Rzepka.

The project team would like to thank Julia Bredtmann, Maria Kleverbeck, Claudia Lohkamp, Oliver Rehbein, Anja Rösner, Sandra Schaffner, Dr. Markus Scheuer, Daniela Schwindt and Tsezarii Zhydetskyi for research assistance and support of the project.

This publication is commissioned by the European Union Programme for Employment and Social Solidarity - PROGRESS (2007-2013).

This programme is implemented by the European Commission. It was established to financially support the implementation of the objectives of the European Union in the employment, social affairs and equal opportunities area, and thereby contribute to the achievement of the Europe 2020 Strategy goals in these fields.

The seven-year Programme targets all stakeholders who can help shape the development of appropriate and effective employment and social legislation and policies, across the EU-27, EFTA-EEA and EU candidate and pre-candidate countries.

For more information see: <http://ec.europa.eu/progress>.

The information contained in this publication does not necessarily reflect the position or opinion of the European Commission.

Executive Summary

This report presents empirical evidence on labour market transitions in the European labour markets using micro data from the Statistics on Income and Living Conditions (SILC) and from the European Union Labour Force Survey (EU-LFS). The aim of the study is to analyse labour market transitions between labour market states and contract types (temporary and permanent contracts), and how these have been affected by the recent financial and economic downturn. In doing so, we focus on labour market transitions coming from the labour market states employment (including self-employment), unemployment and education. Furthermore, we identify similarities and differences between the EU Member States and between demographic groups.

The report starts by giving a short overview of the extent and evolution of the economic and financial crisis. We then summarise the theoretical and empirical literature which is most relevant for our analyses. Here, the search and matching model of the labour market takes centre stage, both for the theoretical background as well as for the empirical investigation. The empirical analysis is based on the SILC data set, as well as on the EU-LFS, which we use for Germany and Romania, as these two countries are not sufficiently covered by SILC. We analyse labour market transitions both descriptively and econometrically, using multinomial logit models.

The results of our study show reduced employment stability (i.e. higher outflows from employment) during the recession, and a corresponding increase in employment-to-unemployment transition rates. Furthermore, men are more negatively affected than women by the crisis with respect to employment stability and employment-to-unemployment flows. In addition, employment-to-unemployment transitions increase significantly more for young workers than for workers belonging to other age groups. For flows out of temporary employment, the effects of the business cycle are much larger, and the impact on certain socio-demographic groups is much more differentiated. Men are much more affected by the crisis due to a higher increase in the transition probability from temporary employment to unemployment. Furthermore, the transitions from temporary employment into unemployment increase most for the youngest workers. In addition, the stepping-stone function of temporary work is most strongly reduced for high-skilled compared to any other skill group during the crisis.

With respect to transitions out of self-employment, we did not find strong effects of the economic crisis. However, there is some evidence that persons who are self-employed are less likely to make a transition into dependent-status employment, and more likely to make a transition to unemployment, during the crisis.

As for transitions out of unemployment, we see some tendency that formerly unemployed people make a transition into education and inactivity, the latter transition increasing particularly for women. We also find that the probability to make a transition to employment, especially to permanent employment, decreases. For men, the probability to remain unemployed is higher than for women, and they are less likely to get employed again during the economic crisis. Turning to flows out of education, we find that the probability of remaining in education is higher in times of crisis, because apparently individuals delay their entry into the labour market.

In order to investigate the effects of institutions, we investigated how different labour market institutions are correlated with cross-country differences in reactions to the crisis. In doing so,

we concentrated on transitions from employment to unemployment and vice-versa. While for employment-to-unemployment transitions, we identified the degree of employment protection and union density as institutions likely to influence cross-country differences, we detected only weak or no correlations of institutions for the unemployment-to-employment flows. Furthermore, we conducted a cluster analysis and performed regressions for a sample of countries selected from the different clusters. This exercise showed that different institutional frameworks are likely to have an effect on labour market transitions.

Many of our findings are very relevant from a policy point of view. First, we find strong heterogeneous effects, with men and young persons being affected most strongly. Second, different forms of employment were affected differently. Temporary employment, in particular, witnessed strong outflows. At the same time, the stepping-stone function of temporary employment and of self-employment was greatly reduced.

Résumé

Ce rapport présente des résultats empiriques concernant les transitions sur le marché du travail dans les marchés européens du travail calculés à l'aide de micro-données en se basant sur les statistiques de l'Union Européenne sur le revenu et les conditions de vie (EU-SILC) et de l'Enquête sur les forces de travail de l'Union européenne (EFT UE). L'objectif de l'étude est de mettre en évidence les transitions entre les états sur le marché du travail des personnes actives et les types de leurs contrats (contrats temporaires et permanents). En outre, cette étude analyse l'impact de la récente crise financière et économique sur leurs transitions. Dans cette analyse l'observation se concentre surtout sur les transitions en provenance des états suivants: « employé » (y compris l'auto - emploi), « au chômage » et « l'éducation ». En plus, l'illustration des similitudes et des différences entre les États Membres de l'UE et entre les groupes démographiques est mis en évidence.

Le rapport commence par donner un bref aperçu de la dimension et de l'évolution de la crise économique et financière. Ensuite, un résumé de la littérature théorique et empirique, qui est à la base de cette étude sera présenté. Sur ce point, les théories de la recherche d'emploi et des appariements occupent une place centrale, aussi bien pour l'arrière-plan théorique que pour l'enquête empirique. L'analyse empirique est basée sur des données SILC , ainsi que sur l'EFT UE , que nous utilisons pour l'Allemagne et la Roumanie, deux pays qui ne sont pas suffisamment couverts par SILC . Quant aux méthodes, nous analysons les transitions sur le marché du travail non seulement d'une manière descriptive mais aussi économétrique, en utilisant des modèles logit multinomiaux.

Les résultats de notre étude montrent une stabilité réduite de l'emploi durant la période en considération (c.-à-d. – des sorties plus élevées de l'emploi) pendant la récession, et une augmentation correspondante dans les taux de transition emploi- chômage. En considérant la stabilité de l'emploi et les flux emploi-chômage, les hommes sont plus affectés que les femmes par la crise. En outre, les transitions emploi- chômage augmentent considérablement plus chez les jeunes travailleurs que chez les travailleurs appartenants à d'autres groupes d'âge. Les effets du cycle d'affaires sont beaucoup plus grands pour les flux qui réduisent le nombre des personnes en état de l'emploi temporaire, tandis que l'impact du cycle d'affaire sur certains groupes socio-démographique est beaucoup plus nuancé. Les hommes sont beaucoup plus touchés par la crise en raison d'une augmentation plus importante de la probabilité de transition d'un emploi temporaire au chômage. De plus, les transitions de l'emploi temporaire au chômage augmentent le plus pour les travailleurs les plus jeunes. En outre, la fonction de tremplin du travail temporaire est plus fortement réduite pour les travailleurs hautement qualifiés par rapport à n'importe quel autre groupe de compétences pendant la crise.

En ce qui concerne les transitions en provenance de l'auto- emploi, nous n'avons pas trouvé des effets forts de la crise économique. Cependant, en temps de crise, il y a certains éléments de preuve que les personnes auto-employées sont moins susceptibles de faire une transition vers le statut de l'emploi salarié que de faire une transition vers le chômage.

Comme pour les transitions de sortie du chômage, nous voyons une tendance des anciens chômeurs à faire une transition vers l'éducation ou une formation et aussi vers l'inactivité. La dernière transition mentionnée se manifeste particulièrement parmi les femmes. L'analyse donne aussi comme résultat que la probabilité de faire une transition vers l'emploi, en particulier à un emploi permanent, diminue dans la crise. Pour les hommes, la probabilité de rester au chômage est plus élevée que pour les femmes, et les hommes sont moins susceptibles d'ob-

tenir un emploi en temps d'une crise économique. En ce qui concerne les flux en provenance de l'état de l'éducation, l'analyse démontre aussi que la probabilité de la prolongation de l'éducation est plus élevée en période de crise, parce que les individus retardent apparemment leur entrée dans le marché du travail.

Afin d'étudier les effets des institutions, l'analyse se concentre sur la question comment les différentes institutions du marché du travail sont en corrélation avec les différences dans les réactions à la crise entre les pays. Ce faisant, nous nous sommes concentrés sur les transitions de l'emploi vers le chômage et vice-versa. En ce qui concerne les transitions emploi- chômage, nous avons identifié le degré de protection de l'emploi et le taux de syndicalisation comme des institutions susceptibles à influencer les différences des résultats entre pays. En outre, nous n'avons détecté que de faibles ou même aucunes corrélations entre les institutions du marché du travail et le flux du chômage à l'emploi. En outre, nous avons effectué une analyse typologique et des régressions pour un échantillon de pays choisis parmi les différents groupes. Cet exercice a montré que les différents cadres institutionnels sont susceptibles d'avoir un effet sur les transitions sur le marché du travail

Beaucoup de nos résultats sont très pertinents du point de vue de la politique. Nous trouvons, d'abord, des effets hétérogènes significatifs chez les hommes et les adolescents, qui sont les plus touchés par la crise. En outre, les différentes formes d'emploi ont été affectées différemment. L'emploi temporaire, en particulier, était réduit dans une large mesure, mais la sortie de l'auto-emploi accrue, bien que dans une moindre mesure. Au même temps, la fonction tremplin de l'emploi temporaire et de l'auto-emploi a été grandement réduite.

Zusammenfassung

Dieser Bericht präsentiert empirische Ergebnisse zu Arbeitsmarktübergängen in den europäischen Arbeitsmärkten mit Mikrodaten aus der Statistik über Einkommen und Lebensbedingungen (SILC) und aus der EU-Arbeitskräfteerhebung (EU-LFS). Das Ziel der Studie ist es, Arbeitsmarktübergänge zwischen verschiedenen Arbeitsmarktzuständen und Vertragstypen (befristete und unbefristete Verträge) zu analysieren, und zu untersuchen, wie diese von der jüngsten Finanz- und Wirtschaftskrise betroffen wurden. Dabei konzentrieren wir uns auf Arbeitsmarktübergänge aus den Arbeitsmarktzuständen Beschäftigung (einschließlich Selbständigkeit), Arbeitslosigkeit und Bildung. Außerdem werden Gemeinsamkeiten und Unterschiede zwischen den EU-Mitgliedstaaten sowie zwischen den Bevölkerungsgruppen untersucht.

Der Bericht gibt zunächst einen kurzen Überblick über das Ausmaß und die Entwicklung der Wirtschafts- und Finanzkrise. Es folgt eine Zusammenfassung der relevanten theoretischen und empirischen Literatur. Hier steht das Search and Matching Modell im Mittelpunkt, sowohl für den theoretischen Hintergrund als auch für die empirische Untersuchung. Die empirische Analyse basiert sowohl auf den SILC Daten, als auch auf EU-LFS, welche für Deutschland und Rumänien genutzt werden, da diese beiden Länder nicht ausreichend von SILC abgedeckt werden. Die Arbeitsmarktübergänge werden sowohl deskriptiv als auch ökonometrisch mit Hilfe von multinomialen Logit-Modellen analysiert.

Die Ergebnisse unserer Studie zeigen eine reduzierte Beschäftigungsstabilität (mehr Übergänge aus Beschäftigung) in der Rezession, und eine entsprechende Zunahme der Übergänge von der Beschäftigung in die Arbeitslosigkeit. Darüber hinaus sind Männer stärker von der Krise betroffen als Frauen, wenn man die Beschäftigungsstabilität und Übergänge von der Beschäftigung in die Arbeitslosigkeit betrachtet. Übergänge von Beschäftigung zu Arbeitslosigkeit sind außerdem deutlich häufiger für junge Arbeitnehmer, verglichen mit anderen Altersgruppen.

Für die Übergänge aus der befristeten Beschäftigung sind die Auswirkungen des Konjunkturzyklus viel größer, und die Auswirkungen auf bestimmte sozio- demographische Gruppen sind viel differenzierter. Aufgrund eines höheren Anstiegs in der Übergangswahrscheinlichkeit aus temporärer Beschäftigung in Arbeitslosigkeit sind Männer viel stärker von der Krise betroffen. Außerdem steigen die Übergänge aus befristeter Beschäftigung in Arbeitslosigkeit am meisten für die jüngsten Arbeitnehmer. Darüber hinaus sinkt die Sprungbrettfunktion der befristeten Beschäftigung während der Krise am stärksten für Hochqualifizierte.

Keine starken Effekte der Wirtschaftskrise lassen sich in Bezug auf die Übergänge aus Selbstständigkeit finden. Allerdings gibt es einige Hinweise darauf, dass Personen, die selbstständig beschäftigt sind, mit einer geringeren Wahrscheinlichkeit in eine abhängige Beschäftigung wechseln, und mit einer erhöhten Wahrscheinlichkeit in die Arbeitslosigkeit fallen.

Für die Übergänge aus Arbeitslosigkeit kann man eine gewisse Tendenz zu Übergängen in Ausbildung und Inaktivität erkennen, letzteres insbesondere für Frauen. Zweitens finden wir, dass die Wahrscheinlichkeit eines Übergangs in die Beschäftigung, insbesondere in die unbefristete Beschäftigung sinkt. Für Männer ist die Wahrscheinlichkeit arbeitslos zu bleiben höher als für Frauen, und es ist weniger wahrscheinlich für sie, während der Wirtschaftskrise wieder eingestellt zu werden. In Bezug auf die Übergänge aus Bildung finden wir, dass die Wahrscheinlichkeit in der Bildung zu bleiben in Krisenzeiten höher ist, weil die betroffenen Personen offenbar den Einstieg in den Arbeitsmarkt verzögern.

Um die Auswirkungen von Institutionen zu analysieren, wurde untersucht, wie unterschiedliche Arbeitsmarktinstitutionen mit länderspezifischen Unterschieden der Reaktionen auf die Krise korrelieren. Dabei konzentrierten wir uns auf Übergänge von Beschäftigung in Arbeitslosigkeit und umgekehrt. Für die Übergänge von Beschäftigung zu Arbeitslosigkeit identifizierten wir den Grad des Kündigungsschutzes und die Gewerkschaftsdichte als signifikante Institutionen, welche wahrscheinlich Unterschiede zwischen den Ländern erklären können. Allerdings entdeckten wir insgesamt nur schwache oder gar keine Zusammenhänge zwischen Institutionen und den Übergängen von der Arbeitslosigkeit in die Beschäftigung. Außerdem führten wir eine Clusteranalyse nach Arbeitsmarktinstitutionen durch und untersuchten Arbeitsmarktflüsse für eine Auswahl von Ländern aus den verschiedenen Clustern. Das Ergebnis zeigte, dass die Rahmenbedingungen hinsichtlich der Arbeitsmarktinstitutionen offenbar einen Einfluss auf Arbeitsmarkttransitionen haben.

Viele unserer Ergebnisse sind aus wirtschaftspolitischer Sicht sehr relevant. Erstens haben wir stark heterogene Effekte identifizieren können, bei denen Männern und Jugendliche am stärksten betroffen wurden. Zweitens wurden verschiedene Formen der Beschäftigung von der Krise unterschiedlich stark betroffen. So gab es insbesondere starke Transitionen aus befristeter Beschäftigung heraus. Außerdem ging die Sprungbrettfunktion befristeter Beschäftigung und selbständiger Beschäftigung stark zurück.

Table of Contents

Executive Summary	I
Résumé	III
Zusammenfassung	V
1. Introduction	8
2. Literature Review.....	11
2.1 Introduction: The search and matching model	11
2.2 The search and matching model of the labour market	11
2.3 Labour market transitions and the business cycle: Theoretical considerations	12
2.4 Labour market transitions and institutions: Theoretical considerations	15
2.5 Labour market transitions in the Great Recession – Empirical Evidence	17
3. Micro Data and Empirical Strategy	18
3.1 Micro data.....	19
3.1.1 EU-SILC.....	19
3.1.2 EU-LFS	24
3.1.3 Comparability of data sets.....	27
3.2 Macro data.....	27
3.2.1 Business cycle indicators	27
3.2.2 Institutional settings	33
3.3 Empirical Strategy.....	39
4. Cluster Analysis.....	44
5. Descriptive Analysis	47
5.1 The European labour markets before the crisis	48
5.2 Labour market dynamics before and during the crisis	52
5.2.1 Labour market transitions on an aggregate level.....	52
5.2.2 Labour market transitions for different socio-economic groups	55
5.2.3 Labour market transitions for selected countries	63
5.3 Comparison of yearly and monthly Markov transition matrices.....	71
6. Econometric Analysis.....	73
6.1 Transitions from employment	73
6.1.1 Regression results for transitions from employment.....	73
6.1.2 Regression results for transitions from permanent employment.....	76
6.1.3 Regression results for transitions from temporary employment.....	78
6.2 Regression results for transitions from self-employment.....	79
6.3 Transitions from unemployment.....	82
6.3.1 Regression results for transitions from unemployment.....	82
6.3.2 Regression results for transitions from unemployment, detailed labour market states.....	85
6.4 Regression results for transitions from education	86
6.5 Labour market institutions	89
6.5.1 Cross-country differences and specific labour market institutions.....	89
6.5.2 Cross-country differences and country clusters.....	99
6.6 Monthly transitions out of unemployment.....	103
7. Summary and policy conclusions.....	104
Appendix 1: Tables and figures	108
Appendix 2: Additional indicators of economic and financial activity.....	209
References.....	211

List of Tables, Figures and Boxes

Table 1.1	The economic crisis and GDP development.....	9
Table 3.1	Preferred data set by country	20
Table 3.2	Availability of microdata by country, EU-SILC.....	21
Table 3.3	Description of key variables, EU-SILC.....	22
Table 3.4	Data availability of key variables, EU-SILC.....	23
Table 3.5	Availability of microdata by country, EU-LFS	25
Table 3.6	Description of key variables, EU-LFS	25
Table 3.7	Data availability of key variables, EU-LFS.....	26
Table 3.8	Description of country-level data: business cycle indicators.....	27
Table 3.9	Availability of country-level data: business cycle indicators.....	29
Table 3.10	Preferred data source to identify the start of the economic crisis.....	32
Table 3.11	Description of country-level data: labour market institutions	34
Table 3.12	Availability of country-level data: labour market institutions	36
Table 4.1	Institutional variables used for cluster analysis	45
Table 4.2	Clusters with respect to category A variables.....	45
Table 4.3	Clusters with respect to category B variables.....	46
Table 4.4	Clusters with respect to category C variables.....	46
Table 4.5	Clusters with respect to all categories	47
Table 5.1	Yearly Markov transition matrix for all countries	52
Table 5.2	Yearly Markov transition matrix for all countries, detailed employment states	54
Table 5.3	Yearly Markov transition matrix for all countries, by gender	56
Table 5.4	Yearly Markov transition matrix for all countries, by age group	59
Table 5.5	Yearly Markov transition matrix for all countries, by skill group.....	61
Table 5.6	Yearly Markov transition matrix for selected countries, detailed employment states	64
Table A.3.1	References for country-level data: business cycle indicators.....	108
Table A.3.2	References for country-level data: labour market institutions.....	109
Table A.5.1	Yearly Markov transition matrix for all countries, different labour market states	111
Table A.5.2	Yearly Markov transition matrix for selected countries, detailed different labour market states.....	117
Table A.6.1	Yearly transitions from employment to different labour market states, EU-SILC.....	124
Table A.6.2	Yearly transitions from employment to different labour market states, EU-LFS	125
Table A.6.3	Yearly transitions from employment to different labour market states, crisis indicator, EU-SILC	126
Table A.6.4	Yearly transitions from employment to different labour market states, crisis indicator, EU-LFS	126
Table A.6.5	Yearly transitions from employment to different labour market states, heterogeneous effects of the crisis by age groups, EU-SILC.....	127
Table A.6.6	Yearly transitions from employment to different labour market states, heterogeneous effects of the crisis by age groups, EU-LFS	128
Table A.6.7	Yearly transitions from employment to different labour market states, heterogeneous effects of the crisis by gender, EU-SILC	129
Table A.6.8	Yearly transitions from employment to different labour market states, heterogeneous effects of the crisis by gender, EU-LFS.....	130

Table A.6.9	Yearly transitions from employment to different labour market states, heterogeneous effects of the crisis by skill groups, EU-SILC.....	131
Table A.6.10	Yearly transitions from employment to different labour market states, heterogeneous effects of the crisis by skill groups, EU-LFS.....	132
Table A.6.11	Yearly transitions from employment to different labour market states, controlling for GDP growth, entire period, EU-SILC.....	133
Table A.6.12	Yearly transitions from employment to different labour market states, controlling for GDP growth, entire period, EU-LFS.....	134
Table A.6.13	Yearly transitions from employment to different labour market states, controlling for GDP growth, before the crisis, EU-SILC.....	135
Table A.6.14	Yearly transitions from employment to different labour market states, controlling for GDP growth, before the crisis, EU-LFS.....	136
Table A.6.15	Yearly transitions from employment to different labour market states, controlling for GDP growth, during the crisis, EU-SILC.....	137
Table A.6.16	Yearly transitions from employment to different labour market states, controlling for GDP growth, during the crisis, EU-LFS.....	138
Table A.6.17	Yearly transitions from permanent employment to different labour market states, EU-SILC.....	139
Table A.6.18	Yearly transitions from permanent employment to different labour market states, crisis indicator, EU-SILC.....	140
Table A.6.19	Yearly transitions from permanent employment to different labour market states, heterogeneous effects of the crisis by gender, EU-SILC.....	141
Table A.6.20	Yearly transitions from permanent employment to different labour market states, heterogeneous effects of the crisis by age groups, EU-SILC.....	142
Table A.6.21	Yearly transitions from permanent employment to different labour market states, heterogeneous effects of the crisis by skill groups, EU-SILC.....	143
Table A.6.22	Yearly transitions from permanent employment to different labour market states, controlling for GDP growth, entire period, EU-SILC.....	144
Table A.6.23	Yearly transitions from permanent employment to different labour market states, controlling for GDP growth, before the crisis, EU-SILC.....	145
Table A.6.24	Yearly transitions from permanent employment to different labour market states, controlling for GDP growth, during the crisis, EU-SILC.....	146
Table A.6.25	Yearly transitions from temporary employment to different labour market states, EU-SILC.....	147
Table A.6.26	Yearly transitions from temporary employment to different labour market states, crisis indicator, EU-SILC.....	148
Table A.6.27	Yearly transitions from temporary employment to different labour market states, heterogeneous effects of the crisis by gender, EU-SILC.....	149
Table A.6.28	Yearly transitions from temporary employment to different labour market states, heterogeneous effects of the crisis by age groups, EU-SILC.....	150
Table A.6.29	Yearly transitions from temporary employment to different labour market states, heterogeneous effects of the crisis by skill groups, EU-SILC.....	151
Table A.6.30	Yearly transitions from temporary employment to different labour market states, controlling for GDP growth, entire period, EU-SILC.....	152
Table A.6.31	Yearly transitions from temporary employment to different labour market states, controlling for GDP growth, before the crisis, EU-SILC.....	153
Table A.6.32	Yearly transitions from temporary employment to different labour market states, controlling for GDP growth, during the crisis, EU-SILC.....	154
Table A.6.33	Yearly transitions from selfemployment to different labour market states, EU-SILC.....	155

Table A.6.34	Yearly transitions from selfemployment to different labour market states, EU-LFS.....	156
Table A.6.35	Yearly transitions from selfemployment to different labour market states, crisis indicator, EU-SILC	157
Table A.6.36	Yearly transitions from selfemployment to different labour market states, crisis indicator, EU-LFS	157
Table A.6.37	Yearly transitions from selfemployment to different labour market states, heterogeneous effects of the crisis by gender, EU-SILC	158
Table A.6.38	Yearly transitions from selfemployment to different labour market states, heterogeneous effects of the crisis by gender, EU-LFS.....	159
Table A.6.39	Yearly transitions from selfemployment to different labour market states, heterogeneous effects of the crisis by age groups, EU-SILC	160
Table A.6.40	Yearly transitions from selfemployment to different labour market states, heterogeneous effects of the crisis by age groups, EU-LFS	161
Table A.6.41	Yearly transitions from selfemployment to different labour market states, heterogeneous effects of the crisis by skill groups, EU-SILC.....	162
Table A.6.42	Yearly transitions from selfemployment to different labour market states, heterogeneous effects of the crisis by skill groups, EU-LFS	163
Table A.6.43	Yearly transitions from selfemployment to different labour market states, controlling for GDP growth, entire period, EU-SILC.....	164
Table A.6.44	Yearly transitions from selfemployment to different labour market states, controlling for GDP growth, entire period, EU-LFS	165
Table A.6.45	Yearly transitions from selfemployment to different labour market states, controlling for GDP growth, before the crisis, EU-SILC	166
Table A.6.46	Yearly transitions from selfemployment to different labour market states, controlling for GDP growth, before the crisis, EU-LFS	167
Table A.6.47	Yearly transitions from selfemployment to different labour market states, controlling for GDP growth, during the crisis, EU-SILC	168
Table A.6.48	Yearly transitions from selfemployment to different labour market states, controlling for GDP growth, during the crisis, EU-LFS.....	169
Table A.6.49	Yearly transitions from unemployment to different labour market states, EU-SILC	170
Table A.6.50	Yearly transitions from unemployment to different labour market states, EU-LFS.....	171
Table A.6.51	Yearly transitions from unemployment to different labour market states, crisis indicator, EU-SILC	172
Table A.6.52	Yearly transitions from unemployment to different labour market states, crisis indicator, EU-LFS	173
Table A.6.53	Yearly transitions from unemployment to different labour market states, heterogeneous effects of the crisis by gender, EU-SILC	174
Table A.6.54	Yearly transitions from unemployment to different labour market states, heterogeneous effects of the crisis by gender, EU-LFS.....	175
Table A.6.55	Yearly transitions from unemployment to different labour market states, heterogeneous effects of the crisis by age groups, EU-SILC	176
Table A.6.56	Yearly transitions from unemployment to different labour market states, heterogeneous effects of the crisis by age groups, EU-LFS	177
Table A.6.57	Yearly transitions from unemployment to different labour market states, heterogeneous effects of the crisis by skill groups, EU-SILC.....	178
Table A.6.58	Yearly transitions from unemployment to different labour market states, heterogeneous effects of the crisis by skill groups, EU-LFS	179

Table A.6.59	Yearly transitions from unemployment to different labour market states, controlling for GDP growth, entire period, EU-SILC.....	180
Table A.6.60	Yearly transitions from unemployment to different labour market states, controlling for GDP growth, entire period, EU-LFS.....	181
Table A.6.61	Yearly transitions from unemployment to different labour market states, controlling for GDP growth, before the crisis, EU-SILC.....	182
Table A.6.62	Yearly transitions from unemployment to different labour market states, controlling for GDP growth, before the crisis, EU-LFS.....	183
Table A.6.63	Yearly transitions from unemployment to different labour market states, controlling for GDP growth, during the crisis, EU-SILC.....	184
Table A.6.64	Yearly transitions from unemployment to different labour market states, controlling for GDP growth, during the crisis, EU-LFS.....	185
Table A.6.65	Yearly transitions from unemployment to different labour market states (detailed employment states), EU-SILC.....	186
Table A.6.66	Yearly transitions from unemployment to different labour market states (detailed employment states), crisis indicator, EU-SILC.....	187
Table A.6.67	Yearly transitions from unemployment to different labour market states (detailed employment states), heterogeneous effects of the crisis by gender, EU-SILC.....	188
Table A.6.68	Yearly transitions from unemployment to different labour market states (detailed employment states), heterogeneous effects of the crisis by age groups, EU-SILC.....	189
Table A.6.69	Yearly transitions from unemployment to different labour market states (detailed employment states), heterogeneous effects of the crisis by skill groups, EU-SILC.....	190
Table A.6.70	Yearly transitions from unemployment to different labour market states (detailed employment states), controlling for GDP growth, entire period, EU-SILC.....	191
Table A.6.71	Yearly transitions from unemployment to different labour market states (detailed employment states), controlling for GDP growth, before the crisis, EU-SILC.....	192
Table A.6.72	Yearly transitions from unemployment to different labour market states (detailed employment states), controlling for GDP growth, during the crisis, EU-SILC.....	193
Table A.6.73	Yearly transitions from education to different labour market states, EU-SILC.....	194
Table A.6.74	Yearly transitions from education to different labour market states, EU-LFS.....	195
Table A.6.75	Yearly transitions from education to different labour market states, crisis indicator, EU-SILC.....	196
Table A.6.76	Yearly transitions from education to different labour market states, crisis indicator, EU-LFS.....	197
Table A.6.77	Yearly transitions from education to different labour market states, controlling for GDP growth, entire period, EU-SILC.....	198
Table A.6.78	Yearly transitions from education to different labour market states, controlling for GDP growth, entire period, EU-LFS.....	199
Table A.6.79	Yearly transitions from education to different labour market states, controlling for GDP growth, before the crisis, EU-SILC.....	200
Table A.6.80	Yearly transitions from education to different labour market states, controlling for GDP growth, before the crisis, EU-LFS.....	201
Table A.6.81	Yearly transitions from education to different labour market states, controlling for GDP growth, during the crisis, EU-SILC.....	202

Table A.6.82	Yearly transitions from education to different labour market states, controlling for GDP growth, during the crisis, EU-LFS.....	203
Table A.6.83	Monthly transitions from unemployment to different labour market states, crisis indicator, EU-SILC	204
Table A.6.84	Yearly transitions from employment to different labor market states, controlling for economic and financial activity	205
Table A.6.85	Yearly transitions from employment to different labor market states for selected countries, EU-SILC.....	206
Table A.6.86	Yearly transitions from unemployment to different labor market states for selected countries, EU-SILC.....	207
Figure 1.1	Unemployment rate over time	10
Figure 5.1	Pre-crisis labour market status for all countries	48
Figure 5.2	Pre-crisis labour market status for selected countries	49
Figure 5.3	Labour force participation by age group.....	49
Figure 5.4	Labour force participation by gender	50
Figure 5.5	Labour force participation by skill group	50
Figure 5.6	Pre-crisis labour market status by age group.....	51
Figure 5.7	Pre-crisis labour market status by age group.....	51
Figure 5.8	Transitions from employment to... ..	53
Figure 5.9	Transitions from permanent employment over time	53
Figure 5.10	Differences in pre-crisis and during crisis transitions out of employment	54
Figure 5.11	Transitions from unemployment to... ..	55
Figure 5.12	Transitions from employment by gender	56
Figure 5.13	Transitions from unemployment by gender	57
Figure 5.14	Differences in transition rates from employment by gender	58
Figure 5.15	Differences in transition rates from unemployment by gender	58
Figure 5.16	Pre-crisis transition rates from employment by age group	59
Figure 5.17	Pre-crisis transition rates from unemployment to by age group.....	60
Figure 5.18	Change in transition rates from unemployment during crisis by age group	61
Figure 5.19	Change in transition rates from employment during crisis by skill group	62
Figure 5.20	Change in transition rates during crisis from unemployment by skill group	63
Figure 5.21	Pre-crisis transitions from temporary employment to... ..	65
Figure 5.22	Pre-crisis transitions from permanent employment to... ..	65
Figure 5.23	Pre-crisis transitions from temporary employment to... ..	66
Figure 5.24	Pre-crisis: Transitions from unemployment to... ..	66
Figure 5.25	Changes in transitions from permanent employment to.....	67
Figure 5.26	Changes in transitions from temporary employment to... ..	68
Figure 5.27	Pre-crisis transitions out of unemployment to... ..	68
Figure 5.28	Changes in transitions out of unemployment to... ..	70
Figure 5.29	Differences in transition rates before/during the crisis from employment to	71
Figure 5.30	Differences in transition rates before/during the crisis from unemployment to	72
Figure 6.1	Country fixed effects from employment-to-unemployment transitions.....	90
Figure 6.2	Correlation between pre-crisis and during the crisis country fixed effects from employment-to-unemployment transitions	91
Figure 6.3	Correlation between employment-to-unemployment transition country fixed effects and wage setting coordination.....	92

Figure 6.4	Correlation between employment-to-unemployment transition country fixed effects and union density.....	92
Figure 6.5	Correlation between employment-to-unemployment transition country fixed effects and employment protection	93
Figure 6.6	Country fixed effects from unemployment-to-employment transitions.....	94
Figure 6.7	Correlation between pre-crisis and during the crisis country fixed effects for unemployment-to-employment transitions	94
Figure 6.8	Correlation between unemployment-to-employment transition country fixed effects and short-term unemployment benefits	95
Figure 6.9	Correlation between unemployment-to-employment transition country fixed effects and long-term unemployment benefits.....	96
Figure 6.10	Correlation between unemployment-to-employment transition country fixed effects and short-term benefit coverage rates	97
Figure 6.11	Correlation between unemployment-to-employment transition country fixed effects and long-term benefit coverage rates	97
Figure 6.12	Correlation between unemployment-to-employment transition country fixed effects and temporary work employment protection	98
Figure 6.13	Correlation between unemployment-to-employment transition country fixed effects and active labour market policies	99
Figure A.6.1	Correlation between pre-crisis and during the crisis country fixed effects and differences in raw transitions for employment-to-unemployment flows....	206
Figure A.6.1	Correlation between pre-crisis and during the crisis country fixed effects and differences in raw transitions for unemployment-to-employment flows....	208
Box 3.1	Markov transition chains and Markov matrices	39
Box 3.2	Cluster Analysis	40
Box 3.3	Logit and Probit model.....	42
Box 3.4	Multinomial logit model	42

1. Introduction

The current economic crisis, which started in 2008, led to high and persistent unemployment rates and diverging developments of European labour markets.¹ This phase of economic recession has its roots in a financial crisis. The starting point was the U.S. subprime crisis. In 2007, strongly inflated house prices peaked, and the housing bubble burst. Consequently, borrowers could not pay back their loans. This housing market crisis led to an international financial crisis as debt equity had been resold globally. Financial markets collapsed, with the private investment bank Lehman Brothers in September 2008 being one of the most prominent victims. These developments in the financial markets spread out to the real economy, and a world-wide phase of economic recession started in the second to third quarter of 2008.

The transmission of the financial crisis to a crisis of the real economy occurred through several channels (IMF 2009). First, the financial crisis significantly reduced the ability of banks to lend (Hempell, Sorensen 2010), which led to a remarkable decline in business investments. With expectations about the future economic development worsening, the ability to raise money on equity markets also declined. Second, international goods and capital flows decreased to a great extent. Third, for capital flows one can observe that formerly widely spread investments diverted to the most safe and liquid markets, which created problems especially for smaller and more vulnerable countries. Fourth, policy makers faced the problem of finding on the one hand solutions that immediately help to de-stress financial markets and on the other hand solutions that help to re-organize the financial architecture in a sustainable way. Finally, consumer sentiment worsened, which led to a considerable decline in consumption expenditure.

As already indicated, the financial crisis became a crisis of the real economy by mid-2008. E.g. in the fourth quarter of 2008, global GDP shrank by about 6.25 per cent. However, world regions were affected differently by the crisis. European economies first of all faced a decline in demand in their export markets as their trading partners went into recession. Western European countries were hit the most by decreasing trade volumes, reduced business expectations, and decreased expectations of private households about future income and the on-going financial (system) as well as debt problems. Eastern European countries and other countries from the Commonwealth of Independent States (CIS) faced a sharp downturn in external financing, which they heavily rely upon, as well as a strong decline in manufacturing exports (IMF 2009).

Table 1.1 gives an overview of the length and depth of the economic crisis. First, the table indicates the quarter when the economic crisis started². Early reactions of GDP to the financial crisis can be seen for e.g. Finland, Sweden and Estonia, where GDP already slowed down in the first quarter of 2008. For the vast majority of countries, the crisis started either in the second quarter – Germany, Hungary, Italy, United Kingdom (UK) – or in the third quarter, namely Belgium or Slovenia. In Cyprus, Bulgaria and Norway, the crisis started in the first quarter of 2009. Next, the last quarter of the economic recession is given for every country. One can easily see that an early start of the recession is not automatically connected with an earlier end of the recession. For instance Latvia went into a phase of economic recession in the first quarter of

¹ The following information draws on IMF (2009).

² All computations are done on the basis of the technical definition in order to identify times of booms and recessions, see Section 3.2.1.

2008. This phase ended in the third quarter of 2009. In contrast, in the Netherlands the crisis started in quarter four in 2008 and ended in quarter two in 2009.

Table 1.1
The economic crisis and GDP development

Country	Start quarter	End quarter	Length in quarter	Deepest decline in GDP growth	Quarter of deepest GDP growth decline	Average GDP growth decline
Malta	2008q4	2009q1	2	-3.57	2009q1	-2.70
Bulgaria	2009q1	2009q2	2	-6.00	2009q2	-3.01
Luxembourg	2008q2	2008q4	3	-6.41	2008q4	-2.65
Belgium	2008q3	2009q1	3	-2.10	2009q1	-1.44
Czech Republic	2008q4	2009q2	3	-3.38	2009q2	-1.89
Netherlands	2008q4	2009q2	3	-2.08	2009q2	-1.58
Germany	2008q2	2009q1	4	-4.12	2009q1	-1.73
Denmark	2008q3	2009q2	4	-2.42	2009q2	-2.06
Lithuania	2008q3	2009q2	4	-13.35	2009q2	-3.97
Slovenia	2008q3	2009q2	4	-4.65	2009q2	-2.46
Cyprus	2009q1	2009q4	4	-1.34	2009q4	-0.73
Sweden	2008q1	2009q1	5	-3.72	2009q1	-1.55
Austria	2008q2	2009q2	5	-1.80	2009q2	-1.02
France	2008q2	2009q2	5	-1.71	2009q2	-0.89
Finland	2008q1	2009q2	6	-6.35	2009q2	-1.79
Italy	2008q2	2009q2	6	-3.63	2009q2	-1.23
Romania	2008q4	2010q1	6	-5.67	2010q1	-2.01
Estonia	2008q1	2009q3	7	-9.75	2009q3	-3.01
Latvia	2008q1	2009q3	7	-10.07	2009q3	-3.89
Spain	2008q2	2009q4	7	-1.70	2009q4	-0.72
Hungary	2008q2	2009q3	7	-3.36	2009q3	-1.24
United Kingdom	2008q2	2009q3	7	-2.47	2009q3	-1.06
Iceland	2008q4	2010q2	7	-5.34	2010q2	-2.15
Norway	2009q1	2010q3	8	-1.65	2010q3	-0.91
Ireland	2008q1	2009q4	9	-3.64	2009q4	-1.35
Greece	2008q4	2010q4	9	-2.80	2010q4	-1.39
Average	/	/	5.27	-4.35	/	-1.86

Notes: GDP data mainly come from Eurostat. Poland and Slovakia are not included as according to the technical definition no clear starting point of the crisis can be identified. See therefore for references and computing explanations Chapter 3.

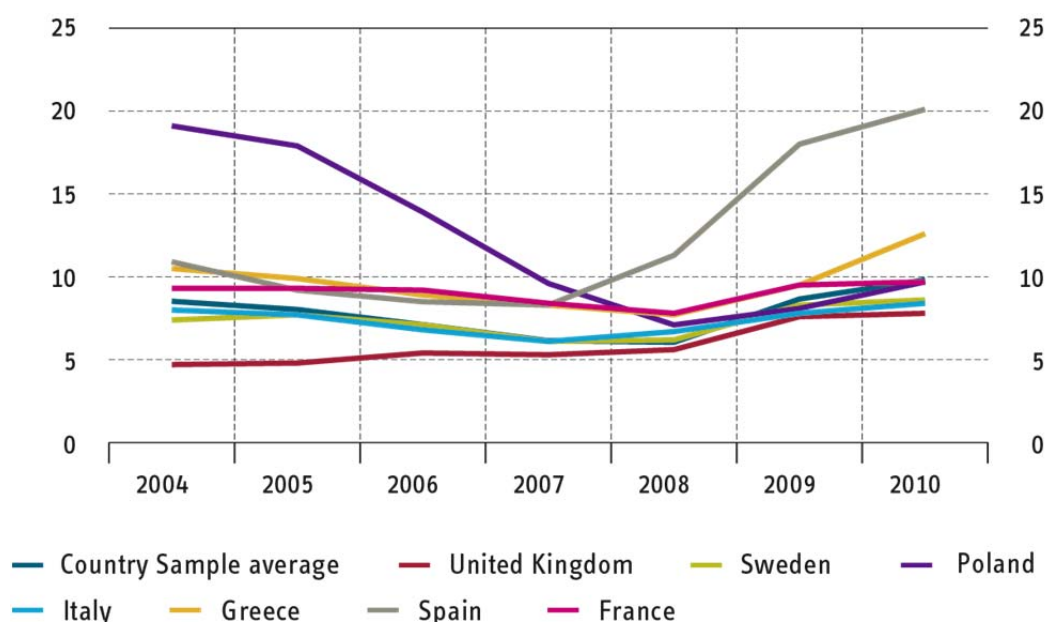
Therefore, the next column displays the length of the economic recession period in quarters. Most of the countries have undergone the crisis for 5 to 6 quarters. Countries as Malta (2), Belgium (3) and Slovenia (4) recovered earlier, others as Norway (8) or Greece (9) later. Besides the length of the recession period of the 2008 economic crisis, it is important to have a look at the depth of the crisis. E.g. Lithuania has undergone four quarters of recession, which is below the average of all countries in the table listed, but had to face a decline in GDP growth of more than 13 per cent in the second quarter of 2009. The last row shows the average decline of GDP growth rates during the respective quarters within the economic crisis. Here, for example the British economy moderately contracted by 1.06 per cent for a total period of seven quarters.

The impact of this economic shock on European labour markets was very strong. Between 2008 and 2010, four million persons lost their jobs within the EMU region (ECB 2012). This translates into an increase of the unemployment rate for the country sample we are going use

in our micro-econometric analysis of almost 3.8 percentage points between 2008 and 2010. However, this impact varies widely across European countries. Figure 1.1 illustrates the development of the unemployment rates for a sub-set of countries.

Figure 1.1

Unemployment rate over time



Source: Eurostat, see Chapter 3 for a detailed discussion. – Notes: Annual unemployment rate. Country sample average includes all countries of the micro-econometric analysis besides Iceland.

Back in 2004, unemployment rates across Europe differed strongly. For example Poland's unemployment rate was close to 20 per cent, a range of countries clustered between 8 and 12 per cent and the UK had the lowest rate close to 5 per cent. During the next years, national unemployment rates decreased or remained relatively stable. However, this development was interrupted by the 2008 economic crisis, and unemployment rates started to increase, in some countries dramatically so as in the case of Spain. Furthermore, it is important to note that the effects on the labour market are lagging GDP growth. For example, unemployment rates in Sweden rose continuously for some time according to Table 1.1. However, Sweden was out of the recession period already from the first quarter of 2009, and was in recession for a total of five.

Overall, there are several factors that determined the different effects of the economic crisis on European labour markets. First, the crisis differed in length and depth by country. Second, the existing, pre-crisis macro-economic conditions of a country are an important channel. For example, a greatly inflated housing market was a pre-condition for a collapsed of the construction sector and increased inflows into unemployment in a number of countries. Third, the labour market situation before the crisis played an important role. For example, countries with a high share of workers with a temporary contract had to face a significantly higher rise in unemployment rates. Fourth, labour market institutions differ by country, which can lead to different labour market effects even when the initial decline in GDP is the same.

In this study, we will analyse the effects of the crisis on labour market transitions in Europe. More specifically, the aim of the study is to fully exploit the richness of the micro data from the

EU-SILC and the EU-LFS to examine in detail the labour market transitions between employment states and between contract types, and how these transitions have been affected by the recent financial and economic downturn. A specific focus lies on identifying similarities and differences between demographic groups but also between Member States as a reaction to the crisis. Furthermore, non-standard employment types such as part-time and/or temporary work are of high interest for this study.

The study is structured as follows. The following chapter contains a review of the relevant literature, both from a theoretical and an empirical point of view. Chapter 3 presents the micro data sets and the macro data employed, as well as our empirical strategy. In Chapter 4, we conduct a cluster analysis, which aims at identifying country groups sharing similar institutional features. Chapters 5 and 6 contain the descriptive and econometric analysis of labour market transitions before and during the economic crisis. The final chapter summarises our main results, discusses methodological issues and makes corresponding recommendations, and provides policy conclusions.

2. Literature Review

2.1 Introduction: The search and matching model

The following literature review gives a selective overview of theoretical studies relating to labour market transitions. This field of the literature has grown very strongly during the last two decades and is now very large. We therefore focus on the aspects of the literature which are most relevant for our purpose. The model underlying the theoretical discussion is the search and matching model of the labour market. This model is far superior to frictionless models (in particular the neoclassical model of the labour market), which generally focus only on employment and/or unemployment stocks, and are thus not able to analyse labour market dynamics. Explicitly considering labour market dynamics allows for a more careful analysis of the business cycle features of the labour market, as well as of the role of institutions. Many institutional features, such as unemployment benefits and employment protection, affect workers' incentives with respect to accepting employment and a given wage. The resulting effect on the wage distribution has an impact on firms' hiring decisions. Thus, based on the search and matching model a rich set of channels through which labour market institutions operate can be analysed.

Given the importance of the search and matching model of the labour market, we start with a brief description of this model (Section 2.2). Against this background, Section 2.3 contains an overview of theoretical analyses of the effect of business cycle movements on labour market transitions. The fourth section concludes the theoretical discussion with a review of studies which analyse the impact of labour market institutions on labour market transitions. Looking at empirical studies, we proceed correspondingly, i.e. we give an overview of the empirical evidence on the effects of the recession on labour market transitions in Europe (Section 2.5). A specific focus in the review of both the empirical and the theoretical studies will be on the cyclical features of labour markets (in particular the impact of the "severe economic recession"), on cross-country differences, on differences between sub-groups of the population (e.g. young and/or disadvantaged workers), and on the importance of institutions.

2.2 The search and matching model of the labour market

The search and matching model of the labour market has become the workhorse model for theoretically analysing labour market dynamics, in particular flows between different labour market states (employment, unemployment, out-of-the-labour-force), different jobs (job-to-job

transitions) and different contract types (permanent, temporary). The basic version of this model includes two labour market states, employment and unemployment (see, e.g. Pissarides 2000, and Cahuc, Zylberberg 2004). Unemployed workers look/ search for a job and firms open vacancies in order to find a worker. Because of imperfections in the labour market (e.g. informational asymmetries), this takes time and effort and is therefore costly. The two sides of the market are brought together by a matching function which is a modelling device for the trading frictions and informational imperfections in the labour market.³ The matching function determines how many meetings are generated from a given number of (unemployed) workers and vacancies during a given time interval. When a worker and a firm meet, they decide on whether it is worthwhile to form a match. If this is the case, they negotiate a wage and the match becomes productive. In the standard case, a reservation wage rule governs the job acceptance decision: if the expected wage is equal to or above a certain threshold – the reservation wage –, the worker accepts the job offer, and rejects it otherwise. Depending on the model specification, job matches are either destroyed exogenously or endogenously. In both cases, the match dissolves and the worker becomes unemployment. In the case of exogenous job destruction, the firm or the worker are not able to influence the job destruction decision; with endogenous job destruction, jobs are destroyed when the productivity⁴ of a match falls below a certain threshold (the reservation wage), e.g. during an aggregate downturn of economics conditions – this is investigated in more detail in Section 2.3.

Equilibrium in this model prevails when the employment, unemployment, and vacancy levels, as well as the flows between the labour market states, are constant. Furthermore, constant employment and unemployment levels entail an equality of the flows emanating from and going to a specific labour market state. For example, this means that the number of workers entering a new job equals the number of laid-off workers, and the number of workers entering unemployment equals the number of unemployed individuals finding a job. The equilibrium is therefore determined by the factors affecting flows to and out of employment. Flows to employment are governed by the job acceptance decision and by the decision of firms on how many vacancies to open. Flows out of employment are determined by the rate at which jobs get destroyed.

Extended versions of the search and matching model include additional labour market states, such as non-participation and education, job-to-job transitions as well as different contract types, such as permanent and fixed-term contracts. We discuss these additional features in the next section, with a particular focus on the cyclical features of labour market dynamics.

2.3 Labour market transitions and the business cycle: Theoretical considerations

In order to analyse the effects of business cycle fluctuations in a search and matching model of the labour market, job destruction should be modelled as endogenous. In this case, productivity is usually governed by a stochastic process, i.e. it changes over time. The partners to a match (i.e. the employer and the employee) decide whether production is worthwhile every time a productivity shock arrives – e.g. as the economy slides into recession –, and wages are renegotiated if the match continues to exist (Mortensen, Pissarides 1994).

³ See Petrongolo/Pissarides (2001) for an overview of both theory and empirics concerning the matching function.

⁴ Note that we use the term “productivity” as shorthand for the value of a match between an employer and an employee. This value can be affected by either supply-side factors (e.g. technology) or demand-side factors (e.g. aggregate demand).

Interestingly, the model can account for the fact that there are large movements into and out of unemployment in both upswings and recessions. Furthermore, the model with homogeneous workers makes clear predictions about the effects of an economic downturn: As the economy goes into recession, the productivity of many matches falls below the required threshold, which leads to an upsurge in job destructions and increased inflows into unemployment. For the same reason, firms reduce their hiring activities, which means that less vacancies are posted and therefore flows from unemployment to employment are reduced. Both effects reduce employment and increase unemployment.

With heterogeneous workers, these effects are similar, with one exception (Bachmann, Sinning 2012): If there are workers of different skills in the pool of the employed, a burst in job destruction as described above implies that many high-skilled workers become unemployed. The reason for this is that the productivity of a high-skilled worker may be relatively low because of a low match quality. In this case, an economic downturn can push even the productivity of a match involving high-skill workers below the required threshold, which means that these workers become unemployed. Firms will try to hire these high-skilled workers from the pool of the unemployed, and therefore the worker flow from unemployment to employment actually increases in a recession.

One important extension of the basic search and matching model with two labour market states is to allow for on-the-job search. The resulting direct job-to-job transitions play an important role for firms and workers, as well as for the economy as a whole: They help employed workers find a better job, provide firms with opportunities to recruit new workers, and thus lead to a better allocation of workers to the existing jobs in the economy (Barlevy 2002). These beneficial effects are most pronounced in economic upswings, when many attractive job opportunities for workers and a high availability of employed job searchers, reinforce each other (Krause, Lubik 2006). In a recession, the opposite situation applies, and therefore job-to-job transitions strongly decline.

As many European countries have carried out partial labour-market reforms in the last few decades, the issue of the existence of different labour contract types in an economy has become an important one. In particular, the emergence of dual labour markets with a relatively well-protected segment of the labour market featuring stable and well-paying jobs, and a segment with relatively unstable and less well-paying jobs has caught much attention recently.⁵ More temporary jobs in an economy generally lead to a higher level of job creation, which should reduce unemployment *ceteris paribus*. However, job destruction also increases: In response to a large, negative shock, such as the recent Great Recession, an economy with a large number of temporary contracts experiences a large increase in job destruction. The reason for this is that many of the temporary contracts are immediately destroyed, or they are not renewed when they reach the end of the contract period. This effect is stronger the larger the gap in firing costs between permanent and temporary contracts (Bentolila et al. 2012). Therefore, labour market volatility increases, but the effect on employment and unemployment is ambiguous (Bentolila, Saint-Paul 1992; Boeri, Garibaldi 2007).

Up to now, we have discussed two labour market states only, employment and unemployment. However, in the labour market one also observes large worker flows to and from non-participation, which is therefore a third labour market state which plays an important role. Particularly in the recent Great Recession, many workers have been reported to withdraw from

⁵ See Saint-Paul (1996) for a seminal contribution.

the labour market. The ensuing non-participation is defined as not searching for a job at all (Garibaldi, Wasmer 2005) or at a very low intensity (Pries, Rogerson 2009). The question whether or not to participate in the labour market generally depends on the job opportunities available relative to the value of home production. The job opportunities may provide a job directly to the non-participants, or indirectly if the non-participants decide to join the labour market as unemployed job searchers. Generally the number of non-participants is related to the quality of job opportunities: The lower the job qualities, the more people chose to withdraw from the labour market and stay at home. Furthermore, worker heterogeneity plays an important role in this context, too. Worker groups with longer expected unemployment duration will have lower participation rates, because participating in the labour market in order to look for a job is more costly for them. These groups will also experience higher transitions between employment and non-participation because they avoid the labour market status of unemployment in order to save search costs (Pries, Rogerson 2009).

Flows to and from non-participation also follow a cyclical pattern (Haefke, Reiter 2006). Given a negative productivity shock, as the Great Recession, productive matches are destroyed. This leads to workers becoming unemployed and increasing flows from employment to non-participation. While those workers with relatively good employment opportunities will remain in the labour market as unemployed job searchers, those with relatively bad/ lower employment prospects will leave the labour market altogether. Also, the worse the expectations for the aggregate economy are, the more people will leave the labour market as job search becomes relatively unattractive.

The dynamics of the labour market are also strongly affected by the decisions concerning education, i.e. the accumulation of human capital. On the worker side, individuals accumulate more human capital if they expect to be employed in a stable job, and if their expected unemployment duration is low; furthermore, higher skills imply higher job stability (Charlot, Malherbet 2013). These effects can reinforce each other, which can give rise to an economic situation with high-skilled workers and low unemployment, or a situation with low-skilled workers and high unemployment (Ortigueira 2006). On the firm side, job creation is affected by the availability of a skilled work-force, which can reinforce the described effect. With many high-skilled workers in the labour market, firms will tend to create high-productivity (i.e. “good”) jobs, with mainly low-skilled workers, mostly “bad”/ low-productivity jobs will be created (Acemoglu 2001).

This literature on labour market transitions and education suggests that a negative shock to labour demand can lead to two different scenarios. On the one hand, if the shock is relatively small and/or short-lived, employment opportunities are reduced in the short-run, but are perceived as relatively favourable in the longer run if the economy is expected to recover soon. Therefore, with less job offers by firms, education becomes relatively attractive for the individuals in the economy. This results in increased flows from employment to education (if a direct transition is possible for the worker directly after he has lost his job), and increased flows from unemployment to education (if a direct transition is not possible). On the other hand, with a shock, which is relatively large and/or prolonged, the expected pay-offs from education, even in the more distant future, are relatively small. Therefore, increased worker flows to education are unlikely. Rather, workers who have lost their jobs will remain unemployed and search for a job, or drop out of the labour market altogether. In this case, one would expect reduced flows to education, and increased flows from employment, education, and non-participation to unemployment.

To sum up, the effects on the various labour market transitions are likely to be very different. Flows out of employment will generally increase, but flows out of unemployment will generally decrease. However, these effects depend strongly on the type of contract an employed person holds. The effects on inactivity are not clear *a priori*. Although an increase in the flows into inactivity is likely, this strongly depends on the depth of the recession. Finally, the effect on flows is likely to depend on the labour market institutions of a country. To this issue we now turn.

2.4 Labour market transitions and institutions: Theoretical considerations

In the following, we discuss the effects of labour market institutions on labour market transitions from a theoretical point of view. In doing so, we focus on selected institutions, which also play a prominent role in our cluster analysis (Chapter 4), i.e. unemployment insurance (both in terms of the net replacement rate and the coverage rate), active labour market policies, minimum wages, unions and collective bargaining, the tax wedge, and wage dispersion.

Unemployment insurance (UI) benefits provide replacement income to workers who lost their job, and are generally based on past contributions. UI generally differs along three dimensions: eligibility, duration/monitoring of payments and level of payments (Boeri, van Ours 2008). The effects of UI on labour market transitions are closely linked to job search theory. With UI, incentives to supply labour at any given market wage change, and have an ambiguous effect on participation. On the one hand, a rise in UI benefits *ceteris paribus* reduces search intensity and increases the duration of unemployment spells due to higher reservation wages, thus decreasing flows out of unemployment. On the other hand, higher UI increases participation in the labour markets for those that had remained inactive so far in order to become eligible for UI benefits, i.e. flows out of non-participation increase (Boeri, van Ours 2008). However, the duration of UI benefits also plays an important role for the duration of unemployment (Cahuc, Zylberberg 2004). This implies that a country with high UI benefits of short duration may display similar outflows out of unemployment as a country with lower UI benefits of longer duration.

Active labor market policies (ALMP) are measures which assist the inactive and unemployed to find a job as soon as possible. ALMP can be divided into four categories (Boeri, van Ours 2008):

- a) training (especially for unemployed adults)
- b) subsidized employment (e.g. by wage subsidies to private companies, support in starting enterprises, job creation in public organizations)
- c) public employment services (placement, counselling, job search assistance)
- d) activation (provision of incentives for unemployed to search for jobs; mandatory participation in training)

With respect to labour market dynamics, ALMP are generally expected to increase the probability of transitions from both unemployment and inactivity to employment. This is in particular the case if the related measures are successful in increasing job search intensity and in making non-employed persons more attractive to employers. However, lock-in-effects exist, which may explain that individuals loose motivation for participating in mandatory job creation programs. This would reduce search intensity (Boeri/van Ours 2008). In conclusion, as there is a broad range of ALMP in Europe with diverging results,⁶ a clear *ex-ante* assessment on their impact cannot be made (Cahuc, Zylberberg 2004).

⁶ Card et al. (2010) provide a comprehensive overview of ALMP evaluation studies.

The minimum wage aims at establishing a higher level of equality of incomes by putting a lower bound on the wage an individual worker can earn. It can be implemented on different levels, e.g. on the industry or country level. According to neoclassical theory with competitive labour markets, the effect of minimum wages on employment is unambiguous. A minimum wage that puts a lower bound on wages, which is above the competitive wage leads to more workers entering the labour market due to the increased nominal wage, but also increases the probability of workers at the lower end of the wage distribution to become unemployed (Neu-mark, Wascher 2008).

However, labour markets are not likely to be perfect, featuring matching frictions and other transaction costs, as well as firms with monopsony power. The latter would mean that firms pay less than the competitive wage level and would face a smaller labour supply. In this set-up, the introduction of a moderate minimum wage could lead to positive developments for both wages and employment. Therefore, flows into employment may rise and flows out of employment may fall at the introduction of a minimum wage (Cahuc, Zylberberg 2004).

However, by setting a wage floor, wages in the economy are likely to be less flexible in a downward direction. Therefore, especially from a neoclassical perspective, one would expect more flows out of employment in a recessionary environment, as wages cannot adjust freely in a downward direction. For the same reason, flows into employment can be expected to decline. The magnitude of this effect depends strongly on the level of the minimum wage.

Trade unions also potentially play an important role for labour market dynamics. In particular, the bargaining power of unions, which rises with union density, increases wages. This might lead to wages, which are higher than the productivity of the employees, which has a negative effect on employment. However, if bargaining also entails other dimensions, such as hires, unemployment benefits and severance payments, employment can also reach the competitive level (Cahuc, Zylberberg 2004). Furthermore, if bargaining also takes place over hours, this can potentially lead to initiatives such as more flexible working time, which may increase employment. Thus, the bargaining effect on employment is ambiguous.

The same is true for the effect of trade unions on flows into and out of employment. Trade unions have the potential of making wages more inflexible, which would lead to increased outflows out of employment and increased inflows into unemployment in a recession. However, trade unions may also be able, together with employer associations, to put in place effective mechanisms to deal with the negative effects of the crisis. In this case, the above-mentioned effects would be reversed. Furthermore, at the country level, inflexible wages are often associated with a high degree of employment protection; the effects of these two features may completely undo each other, leaving no discernible effect on labour market transitions (Bertola, Rogerson 1997). Therefore, no clear theoretical prediction can be made concerning the effects of unions on labour market transitions.

Apart from the bargaining power of unions, the effect of trade unions depends strongly on their level of centralization. Trade unions can be organized on the plant level, the industry level or the country level. Depending on their degree of centralization, unions can differ in their preference of the trade-off between employment and wages, which has different implication for employment. According to Calmfors and Driffill (1988), low unemployment is obtained at low and high degrees of centralization, and high unemployment with intermediate regimes. However, other studies show that greater bargaining centralization is associated with higher unemployment (Di Tella, McCulloch 2005). In a recessionary environment, one may therefore

expect flows out of employment to increase with a greater degree of centralization, although the effect may be non-linear.

In the discussion of the influence of taxes on labour markets, payroll taxes play the most important role. Payroll taxes consist of income taxes and social security contributions. They drive a wedge between the cost of labour to the firm and the net wage of the worker. Different subgroups of the population seem to be more sensitive to the tax wedge. A large set of literature shows that labour supply of women significantly increases if net wages increase (Boeri, van Ours 2008). Other groups of workers that might be discouraged by high tax rates are: workers with high incomes, workers with low incomes and eligible for in-work benefits, workers close to retirement, and potential workers considering entering the labour force. For labour market transitions, particularly in a recession, one would therefore expect that the tax wedge decreases flows into employment and flows into inactivity. Naturally, the size of the effect depends strongly on the design of the tax system and the assumptions made.

2.5 Labour market transitions in the Great Recession – Empirical Evidence

In the following, we briefly review the existing empirical literature on transitions in European labour markets during the recent financial and economic crisis, as well as related literature, e.g. on long-term effects of recessions, which is particularly relevant from a policy perspective. In doing so, we focus on the main themes of our own empirical investigation: Overall effects of the recession on labour market dynamics, heterogeneous effects on different worker groups, particularly with respect to age and gender, differential effects on workers holding permanent or temporary contracts, and cross-country differences.

Overall, there is overwhelming evidence on the impact of the economic and financial crisis. According to ECB (2010), between the beginning of the recession in 2008 and the beginning of the year 2010, almost 4 million jobs were lost in the euro area. However, the authors argue that, given the extent of the fall in GDP, the employment adjustment was relatively small at the aggregate level of the euro area.

With respect to heterogeneous effects, the situation of young workers has attracted special attention. It has become apparent that young workers have suffered disproportionately during the recession (Bell, Blanchflower 2011). This is particularly worrying against the background of evidence on past recessions which demonstrates a substantial and long-lived negative influence of labour market entry in a recession on wages and employment outcomes. This is, for example, shown by von Wachter/Bender (2008) in their analysis of the labour market history of German workers, and for West Germany as a whole by Bachmann et al. (2010). The latter authors find that labour market entrants earning less than the average starting wage are more likely to change their job as well as their occupation. Moreover, although job mobility tends to reduce the effects of labour market entry conditions, implying that job mobility operates as an adjustment mechanism that mitigates entry wage differentials, this process tends to take quite a long time. Finally, they show that these results hold not only for high-skilled, but also for medium-skilled and unskilled workers. Similar results are shown by Kahn (2010), who demonstrates large negative effects of the college unemployment rate on graduation in the U.S. on wages, in the order of a 6% decrease for a 1% increase in the unemployment rate. Moreover, this effect persists for up to 15 years after graduation. Oreopolous et al. (2012) use Canadian data and demonstrate that the unemployment rate at year of graduation has negative effects on graduate earnings that last up to 10 years. Most striking, the distribution of these impacts is not uniform. The present value of earnings losses is 3-4 times larger for the least advantaged workers.

Labour market mobility also differs between men and women. Using panel data from six European countries, Theodossiou/Zangelidis (2009) find that low-educated women are more likely to exit to non-employment than high-educated women and men of all education levels. With respect to the business cycle, less-educated males display a pro-cyclical response of job-to-non-employment transitions, less-educated females a counter-cyclical response. This means that, judging from previous recessions, one should expect a decrease of transitions to non-employment for less-educated men, and an increase for less-educated women. For the recent recession, Verick (2010) finds that in OECD countries, young men were hit hardest, which is also due to men working in heavily impacted sectors such as construction.

Concerning contract types, there is some evidence for selected countries that the prevalence of temporary contracts has an important influence for labour markets during the crisis. This issue has been made obvious by a comparison of the performance of the French and Spanish labour markets (Bentolila et al. 2012). Before the recession, temporary employment grew strongly in Spain, which led to a strong growth in overall employment, while the French labour market was relatively stagnant. In the recession, Bentolila et al. (2012) argue, temporary employment in Spain collapsed, which resulted in a large reduction in overall employment and a correspondingly large increase in unemployment. Therefore, the situation before the crisis with respect to temporary contracts played an important role for the reaction of the labour market during the crisis.

The reaction of labour markets to the crisis differed greatly between countries, too. According to ECB (2012), the heterogeneity of cross-country reactions can be explained by several factors: There were important differences in the severity of the crisis and the nature of shocks between countries. Furthermore, countries chose a variety of different policy responses, also in reaction to the presence of imbalances in the run-up to the crisis. With respect to responses to the crisis, one important issue is whether countries reacted primarily by labour shedding (leading to increased inflows into unemployment) or work sharing (leading to virtually unaltered labour market flows but reductions in hours worked) (OECD 2010). Gal et al. (2013), using a cross-country, firm-level panel data set on 20 OECD countries, argue that employment protection is likely to play a role in this context. However, in their estimates, employment protection only accounts for a small part of the cross-country variation in employment adjustment.

Focusing on the role of labour market institutions for cross-country differences in reaction to the crisis, Eichhorst et al. (2010b) use a cluster analysis to identify institutional country clusters and differences between them. They find that labour market institutions which measure external labour market flexibility, such as unemployment benefits, taxes, and active labour market policies, can explain unemployment in earlier recessions relatively well; however, the explanatory power of these institutions is much diminished in the recent recession. They argue that this is due to an increased use of hard-to-measure aspects of labour market flexibility, such as working-time accounts and government-sponsored adjustment.

3. Micro Data and Empirical Strategy

The empirical analysis of the labour market dynamics in the EU Member States (EU 28), the EEA countries (Iceland, Liechtenstein and Norway) as well as in various candidate countries (Former Yugoslav Republic of Macedonia, Serbia and Turkey) is based on European micro data. Preferably, we use the European Union Statistics on Income and Living Conditions (EU-SILC), which are available for all EU Member States as well as Norway and Iceland. However, in Romania EU-SILC data are only available from 2007 onwards and in Germany – due to disclosure

control reasons – only cover the years 2005 and 2006. Due to this, we use the European Union Labour Force Survey (EU-LFS) for both of these countries.

For Croatia and Liechtenstein, and the candidate countries Turkey, Serbia, and Former Yugoslav Republic of Macedonia, neither EU-SILC nor EU-LFS data are available. We give an overview over which micro data set we will use in the empirical analysis for which country in Table 3.1. For both, EU-SILC and EU-LFS data, the next subsections contain a description of the data structure, the process of data preparation and the quality of the variables to be used in the empirical analysis. Moreover we discuss the comparability of the data sources.

3.1 Micro data

3.1.1 EU-SILC

The EU-SILC data set provides representative and internationally comparable data on income, poverty and living conditions for all EU Member States (EU 28)⁷ as well as for the two EFTA (European Free Trade Association) countries Norway and Iceland. In 2004, the EU-SILC project was launched as 15 countries (13 Member States plus Norway and Iceland) started to collect data either through personal interviews or through a combination of personal interviews and administrative data sources. The database was extended in 2005 to the remaining Member States, with the exception of Bulgaria and Romania which followed in 2006 and 2007, respectively. The data, which are collected at a yearly frequency, are delivered to and processed by Eurostat with the aim to harmonize the information and to ensure comparability across countries, e.g. by using the same concepts, definitions and classifications.

As panel data allow us to follow individuals over time and to observe individual-level changes over time, we use the longitudinal files of EU-SILC for our empirical analysis. The underlying data structure of the longitudinal component is a rotational panel with a certain number of rotational groups. With the exception of France (9-year panel), Norway (8-year panel) and Luxembourg (yearly panel), the data sets consist of a four-year rotational panel (Iacovou et al. 2012). This means that each person selected into the sample is interviewed for four years, and each subsequent year one quarter of all respondents is replaced by new respondents. This structure enables us to follow individuals up to a maximum of four consecutive years.

For a given year, the respective longitudinal file available from Eurostat only contains those respondents that were interviewed both in the respective survey year and in the preceding year. In order to construct a data set with as many observations as possible, we combine the longitudinal files for 2005 to 2010. That is, the different longitudinal data sets are merged together, resulting in a data set that covers the time period from 2004 to 2010. For those observations that are included in several longitudinal files, we keep the observation of the most recent panel version. Using our proposed procedure of constructing the data set only one quarter of observations of the first year and one quarter of the last year are missing.

In order to account for the ensuing data structure, the weights delivered by Eurostat have to be adapted since they are based on the design with fewer observations used by Eurostat. The EU-SILC data provided to us contain longitudinal weights as well as base weights. The first type

⁷ Except for Croatia.

Table 3.1
Preferred data set by country

Country	Country code	Preferred data set	Time period
Austria	AT	EU-SILC	2004-2010
Belgium	BE	EU-SILC	2004-2010
Bulgaria	BG	EU-SILC	2006-2010
Cyprus	CY	EU-SILC	2005-2010
Czech Republic	CZ	EU-SILC	2005-2010
Germany	DE	EU-LFS ¹	2004-2010
Denmark	DK	EU-SILC	2004-2010
Estonia	EE	EU-SILC	2004-2010
Spain	ES	EU-SILC	2004-2010
Finland	FI	EU-SILC	2004-2010
France	FR	EU-SILC	2004-2010
Greece	GR	EU-SILC	2004-2010
Croatia	HR	/ ³	
Hungary	HU	EU-SILC	2005-2010
Ireland	IE	EU-SILC	2004-2009
Iceland	IS	EU-SILC	2004-2010
Italy	IT	EU-SILC	2004-2010
Liechtenstein	LI	/ ³	
Lithuania	LT	EU-SILC	2005-2010
Luxembourg	LU	EU-SILC	2004-2010
Latvia	LV	EU-SILC	2005-2010
Former Yugoslav Republic of Macedonia	MK	/ ³	
Malta	MT	EU-SILC	2006-2010 ⁴
Netherlands	NL	EU-SILC	2005-2010
Norway	NO	EU-SILC	2004-2010
Poland	PL	EU-SILC	2005-2010
Portugal	PT	EU-SILC	2004-2010
Romania	RO	EU-LFS ²	2004-2010
Serbia	RS	/ ³	
Sweden	SE	EU-SILC	2004-2010
Slovenia	SI	EU-SILC	2005-2010
Slovakia	SK	EU-SILC	2005-2010
Turkey	TR	/ ³	
United Kingdom	UK	EU-SILC	2005-2010

Note: ¹For Germany EU-SILC data only contain observations for the years 2005 and 2006. – ²For Romania EU-SILC data are only available from 2007 onwards. – ³For Croatia, Liechtenstein, Former Yugoslav Republic of Macedonia, Serbia and Turkey neither EU-SILC data nor EU-LFS data are available.

of weights is used for longitudinal analysis, as they take into account the time period for which the analysis is conducted. For example, the two-year-longitudinal weight is necessary for the analysis of labour market transitions between year t and year t-1.⁸ For cross-sectional analyses the second type of weights is exploited. For the rotational groups that are not included in each of the different data files we take the base weights from the data file for the following year.

⁸ Note that due to the EU-SILC data structure, longitudinal weights are missing for part of the sample (Number of Observations drops about one third). For Malta longitudinal weights are only provided for the years 2009 and 2010, indicating that Malta cannot be included in our analysis based on yearly data.

Due to the merging process and the resulting new data structure, we obtain more observations than in the original files provided by Eurostat. Thus, the weights for each country will be adjusted in such a way that the observations represent the whole population.⁹

The next few paragraphs provide an indication of the quality of the EU-SILC data by describing the availability and the data coverage in general as well as for specific variables that are important for the analysis. A general overview of the EU-SILC data availability is given in Table 3.2. For the majority of countries, EU-SILC data are available for the whole time period covering the years 2004 to 2010. For a subset of countries, the survey was first conducted in 2005 (Cyprus, Czech Republic, Hungary, Lithuania, Poland, Slovenia, Slovakia and the United Kingdom) and thus data on 2004 are not available. For another group of countries, including Bulgaria and Malta, the years 2004 and 2005 are not covered as the survey started in 2006. In addition, no data are available for Ireland in 2010.

Table 3.2
Availability of microdata by country, EU-SILC
2004 to 2010

Country	2004	2005	2006	2007	2008	2009	2010
AT	X	X	X	X	X	X	X
BE	X	X	X	X	X	X	X
BG	N/A	N/A	X	X	X	X	X
CY	N/A	X	X	X	X	X	X
CZ	N/A	X	X	X	X	X	X
DE	N/A	X	X	N/A	N/A	N/A	N/A
DK	X	X	X	X	X	X	X
EE	X	X	X	X	X	X	X
ES	X	X	X	X	X	X	X
FI	X	X	X	X	X	X	X
FR	X	X	X	X	X	X	X
GR	X	X	X	X	X	X	X
HU	N/A	X	X	X	X	X	X
IE	X	X	X	X	X	X	N/A
IS	X	X	X	X	X	X	X
IT	X	X	X	X	X	X	X
LT	N/A	X	X	X	X	X	X
LU	X	X	X	X	X	X	X
LV	N/A	X	X	X	X	X	X
MT	N/A	N/A	X	X	X	X	X
NL	N/A	X	X	X	X	X	X
NO	X	X	X	X	X	X	X
PL	N/A	X	X	X	X	X	X
PT	X	X	X	X	X	X	X
RO	N/A	N/A	N/A	X	X	X	X
SE	X	X	X	X	X	X	X
SI	N/A	X	X	X	X	X	X
SK	N/A	X	X	X	X	X	X
UK	N/A	X	X	X	X	X	X

Source: EU SILC.

Table 3.3 contains a list of the variables used for the analysis, as well as their abbreviations chosen for the project report. The first set of variables allows computing labour market transitions on the basis of different categories of the current labor market status. The variables econ_stat and empl_stat provide information on whether a person is in employment (part-time or full-time), unemployment, self-employment, inactivity or education at the time of the sur-

⁹ See Engel and Schaffner (2012) for a more detailed description of the strategy of merging the different EU-SILC data sets and appropriately adjusting the weighting scheme.

Table 3.3
Description of key variables, EU-SILC

Variable	Explanation
dependent and explanatory variables	
act_jan-act_dec	main activity from january-december (9 categories)
activ_change	most recent change in the individual's activity status
age	age at the date of the ineterview
availjob	available for work
basic_activity	basic activity status
contract	type of contract
country	country
cunion	consensual union
econ_stat	self-defined current economic status (9 categories)
empl_stat	status in employment (4 categories)
h_iscd	highest ISCED level attained
main activity	main activity status during the income reference period
marital	marital status
membership	membership status
occupation	occupation (ISCO-88 (COM))
qbirth	quarter of birth
rchange	reason for job change
region	region at NUTS 1 or NUTS 2 level
resid_stat	residential status
sex	sex
urban	degree of urbanisation
workhours	number of hours usually worked per week in main job
ybirth	year of birth
year	year of the survey
yempl	number of years spent in paid work
technical variables	
data_stat	data status
hh_cweight	household cross-sectional weight
hh_respond	person responding the household questionnaire
hh_status	household status
hhsz	household size
id_hh	current household id
id_p	personal id
rotation	rotation group
interview	type of interview
yinterview	year of the household interview
partner_id	spouse/partner id
pweight_base	personal base weight
pweight_cross	personal cross-sectional weight
pweight_long2	longitudinal weight (two-year duration)
pweight_long3	longitudinal weight (three-year duration)
pweight_long4	longitudinal weight (four-year duration)
qinterview	quarter of the household interview
respond_stat	respondent status
sample_pers	sample person or co-resident

Source: EU-SILC

Table 3.4
**Data availability of key variables, EU-SILC
 2004 to 2010**

Variable	econ_stat	empl_stat	contract	act_jan_act_dec	workhours	occupation	age	sex	h_isced	marital
AT	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
BE	2004-2010	2004-2010	2005-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
BG	2006-2010	2006-2010	2006-2010	2006-2010	2006-2010	2006-2010	2006-2010	2006-2010	2006-2010	2006-2010
CY	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010
CZ	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010
DK	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
EE	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
ES	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
FI	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
FR	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
GR	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
HU	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010
IE	2004-2009	2004-2009	2004-2009	2004-2009	2004-2009	2004-2009	2004-2009	2004-2009	2004-2009	2004-2009
IS	2004-2010	2004-2010	2004-2010	2007-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
IT	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
LT	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010
LU	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
LV	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010
MT	2006-2010	2006-2010	2006-2010	2006-2010	2006-2010	2006-2010	2006-2010	2006-2010	2006-2010	2006-2010
NL	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010
NO	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
PL	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010
PT	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
SE	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
SI	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010
SK	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010
UK	2005-2010	2005-2010	2005-2007,2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010	2005-2010

Source: EU-SILC.

vey. Combining the information on the economic status of an individual in a given year with the information on the labour market status in the preceding year will allow computing yearly transitions between those states. In addition, the variable `contract` allows identifying transitions on a yearly basis between employment with a permanent or temporary contract. Further, we can make use of employment calendar information. The variable on the main activity of each month (`act_jan-act_dec`) provides monthly information on the labour market status of an individual, which in turn gives the opportunity to calculate transitions between them.¹⁰

As a cause of the EU-SILC data structure, longitudinal weights are missing for part of the sample. This results in a drop of observations by about one third. In addition, yearly data for Malta can only be used for 2009 and 2010.

The yearly availability of the key dependent and explanatory variables is displayed in Table 3.4. As documented, data are available for almost all year/country combinations. Besides the noted delay in the survey start for the named countries, data on the current economic status (`econ_stat`) and status in employment (`empl_stat`) are completely available. However, for the other variables, according to a statement by Eurostat (email received on 9th August 13), one has to note specific country gaps of the data. The variable on the type of contract (`contract`) is affected by the following issues: For the United Kingdom, missing values show up for 2008 and 2009 as some employment questions were not asked in the respective years. In Denmark, problems with the data collecting process occurred in the first survey years. Data are available for these years, but response rates are sometimes low. In Belgium, data were not collected for the variable `contract` in 2004. Apart from the mentioned issues on surveys that started after 2004, the data availability on the calendar information on the labour market state (`act_jan-act_dec`) as well as of all remaining explanatory variables (occupation, age, sex, `h_isced` and `marital`) is good overall.

3.1.2 EU-LFS

The European Union Labour Force Survey (EU-LFS) comprises a large number of representative national household surveys that provide information on the labour status of individuals. EU-LFS covers all EU Member States (EU 28)¹¹, 3 candidate countries (Macedonia, and Turkey)¹², Norway, Iceland, and Switzerland. The latest release of the data set, which is used for our analyses, covers the time period 1983-2011 (Eurostat 2012a). Similarly to the EU-SILC data, the Labour Force Surveys are conducted by the national statistical agencies and processed by Eurostat to ensure comparability across countries. We use the EU-LFS data for Germany and Romania since for these two countries, the availability of EU-SILC is limited (Table 3.2). Even though the LFS data are available from 2002 and 1996 onwards for these two countries (Eurostat 2012a; Eurostat 2012b), we limit our analysis to 2004 to 2010 to be able to compare the results with the EU-SILC analysis. We now explain the processing of the micro data sets, and present the data availability and quality of EU-LFS for Germany and Romania in general and specifically for the variables that will play a role in the empirical analysis.

¹⁰ *The data preparation of this monthly employment calendar is explained in detail in Engel and Schaffner (2012).*

¹¹ *Except for Croatia, see footnote 11.*

¹² *As we noted in the previous section, despite the fact that these candidate countries as well as Croatia collect data under the EU-LFS framework, the data are not released to researchers.*

Preparing the dataset first required importing the text-format data into Stata. Building upon our data work from our previous project using EU-LFS data (ISG and RWI 2010), we wrote programs to match the tasks of the current project. These programs produce a dataset for Romania and Germany that spans from 2004 to 2010; they also label and clean all relevant variables relying on the Database User Guide (Eurostat 2011a), the EU-LFS Explanatory Notes (Eurostat 2011b), and other official documentation.

While preparing the dataset we encountered some challenges. For one thing, we needed to restrict our final data set to private households (i.e. for those that the variable `hh_priv` takes the value 1), this means we exclude individuals living in retirement homes, in military barracks, or similar non-private households. This is because standard economic theory, which is the foundation of our analyses, applies only to private households. For Germany, this data restriction reduces the sample by a total of 26,679 (2.5% of the entire sample) and by 733 (0.05% of the entire sample) for Romania for 2004-2010. Another problem was that parts of the data are delivered as string variables, which cannot be labelled using Stata. Furthermore, some codes found in the data were not mentioned in the official documentation or inconsistent with the official codes and we had to manually check the data and make the necessary corrections. ISG and RWI (2010) includes a comprehensive list of the data problems encountered when working with the EU-LFS data.

Table 3.5
Availability of microdata by country, EU-LFS
 2004 to 2010

Country	2004	2005	2006	2007	2008	2009	2010
DE	X	X	X	X	X	X	X
RO	X	X	X	X	X	X	X

Source: EU-LFS

We now turn to a discussion of the data availability. Table 3.5 reveals that for Germany and Romania, data are available for the entire time period under consideration (2004-2010).¹³ Note, while the Romanian LFS sample consists of four quarterly samples starting in 2005, the German LFS sample only uses one sub-sample to represent each year starting 2006 (Eurostat 2012a). This explains why there is a drop in the numbers of observations for Germany and an increase in the numbers of observations for Romania.

Table 3.6 provides the description of the variables used in the empirical analysis, as well as their assigned abbreviations. Contrary to EU-SILC, the micro data provided to researchers do not allow to follow respondents over time in the EU-LFS data set. However, yearly labour market transitions can be identified and analysed by using information on the current labour market state (`ilo_status` and `statpro`) and the retrospectively collected labour market state of the previous year (`wstat1y` and `statpro1y`). This way, transitions between dependent-status employment, self-employment, unemployment, education, and inactivity can be specified. Other than for the EU-SILC data, it is not possible to investigate monthly labour market transitions with the EU-LFS data. Also, it is not possible to analyse transitions between contract types or

¹³ Considering the sample selection probability, non-response rates, and sampling stratification, weighting coefficients are constructed such that the data set is representative of the current population and can be used for out-of-sample predictions (Eurostat, 2012b).

Table 3.6
Description of key variables, EU-LFS

Variable	Explanation
dependent and explanatory variables	
age	Age at the date of the interview
country	Country
educ_compl	Highest education level attained (ISCED)
ftpt	Distinction between part and full-time employment
hhnb0014	Number of children living in the household (aged less than 15 years)
hhnbold	Number of elderly living in the household (aged less than 65 years)
hhnbpers	Total number of persons in the household (irrespective of age).
hwusual	Number of hours per week usually worked in the main job
ilo_status	ILO working status (4 categories).
main_stat	Main labor market status (9 categories).
marstat	Marital status
refyear	year of the survey
region	Region of household in NUTS 1 or NUTS 2 level.
sex	Sex
stapro	Professional status (self-employment or employee).
stapro1y	Professional status one year before survey (self-employment or employee).
temp	Permanency of the job
wstat1y	Main labor market status one year before survey (9 categories).
technical variables	
coeff	Yearly weighting factor
hh_id	Household identifier
hmlink	Relationship to reference person in the household.
hhspou	Sequence number of spouse or cohabiting partner
intweek	Interview week
pid	Personal identifier

Source: EU-LFS.

between full-time and part-time employment because this information is only available for the current year, but is not contained in the retrospective information on the labour market state of the previous year. The same holds for the occupational variables, they are only available in for the current year and not for the previous year. Therefore, we will not be able to control for an individual's occupation in our regression. All other variables listed in Table 3.4 will enter our estimations as control variables, or are used for data preparation (e.g. hmlink or coeff).

Table 3.7 contains the yearly availability of the key dependent variables: professional status in the current and the previous year, the work status in the current and the previous year, and covariates: age, educational attainment, marital status, and gender. All these variables are available for the 2004- 2010 period.

Table 3.7
Data availability of key variables, EU-LFS
 2004 to 2010

Country	stapro	stapro1y	ilo_status	wstat1y	age	educ compl	married	sex
DE	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
RO	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010

Source: EU-LFS.

3.1.3 Comparability of data sets

As we use EU-LFS data for Germany and Romania and EU-SILC data for all remaining countries under consideration, the comparability of both data sources is important. For our analysis of labour market dynamics, two differences are especially relevant. First of all, the two data sets differ in their data structure. While EU-SILC follows a panel structure, where the same individual can be observed for up to four years and transitions across labour market states can easily be identified, the EU-LFS data available to researchers allows individuals to be observed in one year only. However, as mentioned in Section 3.1.2, exploiting the EU-LFS information on the current labour market state and the retrospectively collected labour market state of the previous year, one-year transition rates can be generated.

Second, compared to EU-LFS the information available in EU-SILC allows investigating a broader set of transitions. In EU-LFS transitions between employment, self-employment, unemployment, education, and inactivity can be identified. In this context, the main limiting factor is that the retrospective information on the labour market state in the previous year contains information neither on the part-time/full-time distinction nor on the type of contract (permanent or temporary). By contrast, the EU-SILC data allow the analysis of transitions between the labour market states mentioned above as well as transitions into and out of part-time employment, full-time employment, permanent employment and temporary employment. Moreover, calendar information in the EU-SILC survey offer the opportunity to investigate monthly labour market transitions, which is not possible with EU-LFS.

However, if the focus of the empirical analysis is on the transitions between the main labour market states employment, self-employment, unemployment, education, and inactivity, it is possible to compare the results based on EU-SILC with those from EU-LFS. The descriptive analysis in RWI (2011) showed that there are only small differences between the two data sets regarding transition rates.

3.2 Macro data

3.2.1 Business cycle indicators

In order to quantify the severity of the economic and financial crisis, we collect business cycle indicators at the country level, covering both the real economy and the financial sector. We selected the data on the basis of their appropriateness for the purpose at hand and their availability. Table 3.8 gives an overview of the collected data and its sources, and Table 3.9 shows their availability by country and year.

The most crucial variable we generate from this raw-data is a dummy variable on the start of the economic crisis. This variable takes the value of 0 if the economic recession 2008 had not started in the respective time period and 1 otherwise. This allows us to differentiate between the pre-crisis period and the period since the start of the economic crisis. First, we generate this variable with the help of different data sources, namely, as noted in Table 3.8, quarterly GDP (source: Eurostat), and lastly Turning point indicator (source: OECD). On the basis of quarterly GDP, we compute quarterly growth rates of GDP and according to the technical definition (at least two consecutive quarters of negative growth in GDP), we identify quarters of periods of a recession. Second, in order to identify the start of the recent economic and financial crisis, we use the earliest quarter identified as a recession quarter since 2008.

Given that data availability differs between countries, we define a hierarchy among our data sources. As Eurostat data cover our countries and are thus the most comparable, this is our

Table 3.8
Description of country-level data: business cycle indicators

Variable	Description	Data source
Economic growth		
Turning point indicator	Turning points (peak/trough) based on the "growth cycle" approach	OECD
Quarterly GDP	Millions of euro, chain-linked volumes, reference year 2005 (at 2005 exchange rates); Seasonally adjusted and adjusted data by working days	Eurostat
Output Gap	Gap between actual and potential GDP at 2005 market prices	IMF – World Economic Outlook
CPI	Harmonised indices of consumer prices	Eurostat
Components of GDP		
Private Consumption	Household and NPISH final consumption expenditure, Millions of euro, chain-linked volumes, reference year 2005 (at 2005 exchange rates)	Eurostat
Investment	Gross capital formation, Millions of euro, chain-linked volumes, reference year 2005 (at 2005 exchange rates)	Eurostat
Exports	Exports of goods and services, Millions of euro, chain-linked volumes, reference year 2005 (at 2005 exchange rates)	Eurostat
Imports	Imports of goods and services, Millions of euro, chain-linked volumes, reference year 2005 (at 2005 exchange rates)	Eurostat
Government Spending	Final consumption expenditure of general government, Millions of euro, chain-linked volumes, reference year 2005 (at 2005 exchange rates)	Eurostat
Government Debt	General government debt in millions of Euro	Eurostat
Government Deficit/Surplus	Government deficit/surplus as percentage of GDP	Eurostat
Labour market		
Unemployment rate	Unemployment rate, annual average	Eurostat
Long-term unemployment rate	Long-term unemployment rate (12 months and more)	Eurostat
Youth unemployment rate	Unemployment rate (population 15-24 years old; ES, IT and the UK 16- 24 years old)	Eurostat
Hours worked	Average annual hours actually worked per worker	Eurostat
Hourly real labor costs	Total annual labour costs	Eurostat
Hourly real labor productivity	Labour productivity per hour worked	Eurostat
Financial sector		
Domestic credits	Domestic credit provided by banking sector, % of GDP	IMF – International Financial Statistics
Equity prices	Standard & Poor's Global Equity Indices, annual % change	World Bank
Interest rates	Government bond yields, 10 years maturity	Eurostat
Exchange rates	Nominal Effective Exchange Rate, 27 trading partners (Index==2005)	Eurostat
House price Index	European House price Index, Index=2010	Eurostat

Notes: References on the data sources are provided in Table A.3.1 in the appendix.

preferred data source. If it is not possible to identify the start of the economic crisis on the basis of the technical definition, we use the information of the variable Turning point indicator, but include the respective GDP information. Table 3.10 gives an overview of the preferred data source by country. It becomes clear that the Eurostat data is the preferred data source for all the countries included in the micro-econometric analysis and that we solely have to rely on the Turning point indicator for Poland and Slovakia. This generated crisis indicator allows us to identify pre- and during crisis periods for each country separately.

As the focus of our analysis is on the economic crisis, we use the crisis indicator (and sometimes GDP growth) as our main variable for capturing the effects of the crisis in our econometric regressions. However, in order to provide a more detailed analysis, we use further variables

Table 3.9
Availability of country-level data: business cycle indicators
 2004 to 2010

Variable	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI
Turning point indicator	2004-2010	2004-2010	N/A	N/A	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Quarterly GDP	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Output Gap	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
CPI	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Private Consumption	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Investment	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Exports/Imports	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Government spending	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Government Debt	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Government Deficit/Surplus	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Unemployment rate	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Longterm unemployment	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Youth unemployment rate	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Hours worked	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Hourly real labor costs	2004-2008	2004-2008	2004-2007	2004-2008	2004-2007	2004-2007	2004-2007	2004-2008	2004-2007	2004-2008
Hourly real labor productivity	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Domestic credits	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Equity Prices	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Interest Rates	2004-2007	2004-2007	2004-2010	2004-2007	2004-2010	2004-2007	2004-2007	N/A	2004-2007	2004-2007
Exchange rates	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
House price Index	2009	2005-2009	2009-2009	2005-2009	2008-2009	2005-2009	2005-2009	2005-2009	2006-2009	2005-2009

Table 3.9, continued

Variable	FR	GR	HU	IE	IS	IT	LT	LU	LV	MT
Turning point indicator	2004-2010	2004-2010	2004-2010	2004-2010	N/A	2004-2010	N/A	N/A	N/A	N/A
Quarterly GDP	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Output Gap	2004-2010	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
CPI	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Private Consumption	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Investment	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	N/A	2004-2010	N/A	2004-2010
Exports/Imports	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Government spending	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	N/A	2004-2010	N/A	2004-2010
Government Debt	2004-2010	2004-2010	2004-2010	2004-2010	2005-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Government Deficit/Surplus	2004-2010	2004-2010	2004-2010	2004-2010	2005-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Unemployment rate	2004-2010	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Longterm unemployment	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Youth unemployment rate	2004-2010	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Hours worked	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Hourly real labor costs	2004-2008	N/A	2004-2007	N/A	N/A	2004	2004-2007	2004-2008	2004-2008	2004-2008
Hourly real labor productivity	2004-2010	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Domestic credits	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Equity Prices	2004-2010	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2006-2010	2004-2010	N/A
Interest Rates	2004-2007	2004-2007	2004-2010	2004-2007	N/A	2004-2007	2004-2007	N/A	2004-2010	2004-2007
Exchange rates	2004-2010	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
House price Index	2007-2009	2006-2009	2007-2009	2005-2009	2005-2009	N/A	2006-2009	2007-2009	2006-2009	2005-2009

Table 3.9, continued

Variable	NL	NO	PL	PT	RO	SE	SI	SK	UK
Turning point indicator	2004-2010	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010
Quarterly GDP	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Output Gap	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
CPI	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Private Consumption	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Investment	2004-2010	2004-2010	N/A	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010
Exports/Imports	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Government spending	2004-2010	2004-2010	N/A	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010
Government Debt	2004-2010	2004, 2006-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Government Deficit/Surplus	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Unemployment rate	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Longterm unemployment	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Youth unemployment rate	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Hours worked	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Hourly real labor costs	2004-2005	N/A	2004-2008	2004-2008	2004-2008	2004-2008	2004-2008	2004-2008	2004-2008
Hourly real labor productivity	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Domestic credits	2004-2010	2004-2006	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2008	2004-2010
Equity Prices	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Interest Rates	2004-2007	N/A	2004-2010	2004-2007	N/A	2004-2007	2004-2010	2004-2007	2004-2007
Exchange rates	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
House price Index	2005-2009	2005-2009	N/A	2008-2009	2009	2005-2009	2007-2009	2006-2009	2005-2009

Table 3.10
Preferred data source to identify the start of the economic crisis

Country	Preferred data source	Crisis Indicator generated from
Austria	Eurostat	Eurostat
Belgium	Eurostat	Eurostat
Bulgaria	Eurostat	Eurostat
Cyprus	Eurostat	Eurostat
Czech Republic	Eurostat	Eurostat
Germany	Eurostat	Eurostat
Denmark	Eurostat	Eurostat
Estonia	Eurostat	Eurostat
Spain	Eurostat	Eurostat
Finland	Eurostat	Eurostat
France	Eurostat	Eurostat
Greece	Eurostat	Eurostat
Croatia	Eurostat	Eurostat
Hungary	Eurostat	Eurostat
Ireland	Eurostat	Eurostat
Iceland	Eurostat	Eurostat
Italy	Eurostat	Eurostat
Lithuania	Eurostat	Eurostat
Luxembourg	Eurostat	Eurostat
Latvia	Eurostat	Eurostat
Malta	Eurostat	Eurostat
Netherlands	Eurostat	Eurostat
Norway	Eurostat	Eurostat
Poland	Eurostat	OECD Turning point ¹
Portugal	Eurostat	Eurostat
Romania	Eurostat	Eurostat
Sweden	Eurostat	Eurostat
Slovenia	Eurostat	Eurostat
Slovakia	Eurostat	OECD Turning point ¹
United Kingdom	Eurostat	Eurostat

Notes: ¹If we cannot identify the start of the economic recession in 2008 according to the technical definition on the basis of either Eurostat or OECD quarterly GDP data, we use the OECD Turning point data in order to identify the start of the crisis.

that capture the economic and also the financial cycle.¹⁴ For example, we also gathered data on the gap between actual and potential GDP (source: IMF), i.e. the output gap. This indicator is an alternative measure for the severity of a recession, which takes into account how far the economy is away from its productive potential, which would be achieved if the entire capital stock and all workers would be put to full productive use. Therefore, the output gap measures how strongly the economy could grow if its stocks of labour and capital were fully used. For example, the output gap becomes smaller when workers leave the labour market permanently, or when the capital stock shrinks permanently, e.g. because machines are discarded – in both cases, the productive potential of the economy falls and therefore the gap between the productive potential and actual production decreases. Data on the output gap are available for the vast majority of countries.

¹⁴ However, many of these variables did not provide further insights, see Chapter 6 for more details.

Private and public consumption, investment as well as exports and imports are the main components of GDP, which affect the labour market in different ways (Anderton et al. 2012). Private and public consumption are directly linked to demand on the product market and therefore have an impact on labour demand; investment in an economy also has a mostly direct impact on labour demand through its demand for (capital) goods. Finally, imports and exports give an indication for the demand for the goods produced in the economy. Further, they capture to which extent an economy is integrated in trade and thus, how hard they have probably been hit by the crisis. As the relative importance of each component varies between countries, the sources of the impact of the crisis as well as potential differences among countries can be investigated. The data are collected from Eurostat. For most of the countries, the indicators are available for the whole period under investigation. However, for a subsample of countries (Bulgaria and Cyprus), there exist notable gaps in the availability of the data.

Labour market indicators prominently display the features of the business cycle. We therefore collect data on (longterm-)unemployment, hours worked as well as labour costs and productivity. These indicators all serve a dual purpose in our analysis. On the one hand, they can be used as a measure of the severity of the economic crisis and can hence act as an alternative to GDP in this context. On the other hand, they indicate the impact of the crisis on the labour market, and therefore give first insights into the labour market adjustment mechanisms in different countries, which will be examined in detail in the econometric analysis using micro data. These data are taken from Eurostat and are widely available.

Indicators of the financial sector cover data on credits (date source: IMF website), equity prices (World Bank), the interest rate and the exchange rate (both Eurostat). Credits, the interest rate and equity prices can have an impact on labour demand through their effects on the ability of firms to raise money to invest and on the ability of individuals to finance consumption. The exchange rate on the other hand, may affect labour demand through its impact on the terms of trade. The data on the financial sector are available for most countries and years.

Finally, the European House price Index (Eurostat) measures the evolution of housing prices. Housing prices play a potentially important role for labour markets, as they may trigger consumption, and therefore labour demand through a wealth effect (Carroll et al. 2011) and labour supply through their effect on mobility (Chan 2001). Most countries are covered by this index. However, the earliest available data is from 2005, and for many countries only a few years are available.

3.2.2 Institutional settings

Differences in labour market institutions may determine labour market participation or transitions across countries (Nickell, Layard 1999).¹⁵ For example, extensive child day care facilities at the country level may increase female labour supply and potentially affect their transitions between labour market states. In addition, in countries with strict employment protection, labour markets are likely to feature lower transition rates. Therefore we collected a comprehensive set of variables that characterize the institutional setting of the national labour markets. In the following, we present the institutional variables and discuss the quality of the data.

¹⁵ *The literature review in the draft final report will provide an overview of the literature on the effects of labour market institutions on labour market transitions.*

Table 3.11
Description of country-level data: labour market institutions

Variable	Description	Data source
Active Labor Market Policies		
ALMP exp. total / GDP	Total public expenditure on labour market policy; expressed as a percentage of GDP.	Eurostat
ALMP exp.: measures / GDP	Public expenditure on labour market policy interventions; type of action: measures; expressed as a percentage of GDP.	Eurostat
ALMP exp.: support / GDP	Public expenditure on labour market policy interventions; type of action: support; expressed as a percentage of GDP.	Eurostat
Child Care		
Child benefits p.c.	Public expenditures on family and child benefits per capita, in Euro.	Eurostat
Child benefits/GDP	Public expenditures on family and child benefits; expressed as a percentage of GDP.	Eurostat
Childcare (<29h, <3y)	Children aged under 3 (0-2 years) cared for (by formal arrangements other than by the family) up to 30 hours a usual week as a proportion of all children of the same age group.	Eurostat
Childcare (<29h, 3-6y)	Children aged between 3 years and the mandatory school age cared for (by formal arrangements other than by the family) up to 30 hours a usual week as a proportion of all children of the same age group.	Eurostat
Childcare (>29h, <3y)	Children aged under 3 (0-2 years) cared for (by formal arrangements other than by the family) 30 hours or more a usual week as a proportion of all children of the same age group.	Eurostat
Childcare (>29h, 3-6y)	Children aged between 3 years and the mandatory school age cared for (by formal arrangements other than by the family) 30 hours or more a usual week as a proportion of all children of the same age group.	Eurostat
Income maint./GDP	Income maintenance at birth; expressed as a percentage of GDP.	Eurostat
Parent. leave benef./GDP	Public expenditures on parental leave; expressed as a percentage of GDP.	Eurostat
Employment Protection		
EP Collective dismissal	Sub-indicator for additional regulation of collective dismissal – calculated as unweighted average of items relating to collective dismissals.	OECD
EP regular employment	Sub-indicator for dismissal of employees on regular contracts. Calculated as weighted sum of items relating to regular contracts such as length of trial period, length of notice period and amounts of severance pay.	OECD
EP temporary employment	Sub-indicator for strictness of regulation on temporary contracts. Calculated as weighted sum of items relating to temporary contracts such as length of trial period, length of notice period and amounts of severance pay.	OECD
Inequality		
Inequality (20/80)	Ratio of the total income received by the 20% of the country's population with the highest income to that received by the 20% of the country's population with the lowest income.	Eurostat
Social expenditures		
Exp. education / GDP	Expenditure on education as % of GDP or public expenditure, All levels of education	Eurostat
Exp. social protection/GDP	Total social protection expenditure as a share of GDP.	Eurostat
Tax wedge and pension payments		
Tax wedge	Tax wedge on low wage earners, defined as income tax on gross wage earnings plus the employee's and the employer's social security contributions (as a percentage of the total labour costs of the earner).	Eurostat

Table 3.11, continued

Variable	Description	Data source
Unemployment protection		
Dur.of unemployment Insurance	Unemployment insurance benefits for a 40-year old in months (where benefits are conditional on work history, the table assumes a long and uninterrupted employment record)	OECD
Replacement rate (long-term)	Out of work income expressed as a percentage of previous in work income for long-term unemployment. Considering 100% average wage for a single person, with no children, and without other social top ups.	OECD
Replacement rate (short-term)	Out of work income expressed as a percentage of previous in work income for the initial phase of unemployment following any waiting period. Considering 100% average wage for a single person, with no children, and without other social top ups.	OECD
Approximated benefit coverage rate short-term	Number of newly (within the last 12 months) unemployed persons receiving unemployment benefits divided by the total number of newly unemployed persons.	EU-SILC, own calculations
Approximated benefit coverage rate long-term	Number of all unemployed persons receiving unemployment benefits divided by the total number of unemployed persons.	EU-SILC, own calculations
Unions and wage setting institutions		
Bargaining Level	The predominant level(s) at which wage bargaining takes place, ranging from 5= bargaining predominantly takes place at central or cross-industry level and there are centrally determined binding norms or ceilings to be respected by agreements negotiated at lower levels to 1= bargaining predominantly takes place at the local or company level	ICTWSS
Coordination of wage-setting	Coordination of wage-setting, ranging from 5= centralized bargaining to 1= fragmented bargaining confined to individuals and firms	ICTWSS
National minimum wage	National Minimum Wage, 2 = Statutory national (cross-sectoral or inter-occupational) minimum wage exists. 1 = Statutory minimum wage in some sectors (occupations, regions/states) only 0 = No statutory minimum wage.	ICTWSS
Union density (ICTWSS)	Union density rate, net union membership as a proportion of wage and salary earners in employment	ICTWSS

Notes: References on the data sources are provided in Table A.3.2 in the appendix.

Our institutional variables can be broadly classified into eight subgroups: (1) active labour market policies, (2) child care and parental leave regulation, (3) employment protection, (4) inequality, (5) social expenditures, (6) tax wedge, (7) unemployment protection, and (8) unions and wage setting institutions. Table 3.11 provides a short description and the data source of all the institutional variables. Note that we have three main sources. We use the Database on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts (ICTWSS, Visser 2013), and databases from Eurostat and the OECD.

Some institutional variables also vary with certain individual characteristics. For instance, the rate of unemployment benefits often is determined by marital and family status among other factors. Here we include the benefit rate that refers to a single person with no children, and without other social benefits. This is the group for which one can expect the strongest reactions to this institution since they have a less pronounced family safety net and no or few other policies that could support them.¹⁶ Similarly, the tax wedge captures the income tax on gross wage

¹⁶ This is what the literature review by Keane (2011) suggests, at least for single mothers. However, it should be pointed out that it is difficult to draw a general conclusion from this literature.

Table 3.12
Availability of country-level data: labour market institutions
 2004 to 2010

Variable	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI
ALMP exp. total / GDP	2004-2010	2004-2010	2004-2010	2006-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
ALMP exp.: measures / GDP	2004-2010	2004-2010	2004-2010	2006-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
ALMP exp.: support / GDP	2004-2010	2004-2010	2004-2010	2006-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Child benefits p.c.	2004-2010	2004-2010	2005-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Child benefits/GDP	2004-2010	2004-2010	2005-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Childcare (<29h, <3y)	2004-2010	2004-2010	2007-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Childcare (<29h, 3-6y)	2004-2010	2004-2010	2006-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Childcare (>29h, <3y)	2004-2010	2004-2010	2006-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Childcare (>29h, 3-6y)	2004-2010	2004-2010	2006-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Income maint./GDP	2004-2010	2004-2010	2005-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Parent. leave benef./GDP	2004-2010	2004-2010	2005-2010	2004-2010	2004-2010	2004-2010	2005-2009	2004-2010	2004-2010	2004-2010
EP Collective dismissal	2004-2010	2004-2010	N/A	N/A	2004-2010	2004-2010	2004-2010	2008-2010	2004-2010	2004-2010
EP regular employment	2004-2010	2004-2010	N/A	N/A	2004-2010	2004-2010	2004-2010	2008-2010	2004-2010	2004-2010
EP temporary employment	2004-2010	2004-2010	N/A	N/A	2004-2010	2004-2010	2004-2010	2008-2010	2004-2010	2004-2010
Gini coefficient	2004-2010	2004-2010	N/A	N/A	2004-2010	2004-2010	2004-2010	2008-2010	2004-2010	2004-2010
Inequality (20/80)	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Exp. education / GDP	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Exp. social protection/GDP	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2005-2009	2004-2010	2005-2009	2004-2010	2004-2010
Pensions as share of GDP	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Tax wedge	2004-2010	2004-2010	2004-2010	2004-2007	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Dur. of unemployment insurance	2005;2007;2010	2005;2007;2010	2010	N/A	2005;2007;2010	2005;2007;2010	2005;2007;2010	2007;2010	2005;2007;2010	2005;2007;2010
Replacement rate (long-term)	2004-2010	2004-2010	2008-2010	2005-2007	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Replacement rate (short-term)	2004-2010	2004-2010	2008-2010	2005-2007	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Bargaining Level	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Coordination of wage-setting	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
National minimum wage setting	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Opening clauses	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Social pact agreed	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Social pact signed	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Type of wagesetting	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Union concentration (central level)	2004-2010	2004-2010	2005; 2007-2008	2005-2006	2005-2009	2004-2010	2004-2010	2005; 2007	2005-2008	2004-2010
Union density (ICTWSS)	2004-2010	2004-2010	2005-2009	2005-2006; 2008	2004-2009	2004-2010	2004-2010	2005; 2007-2010	2004-2010	2004-2010
Fertility	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Population growth	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010

Table 3.12, continued

Variable	FR	GR	HU	IE	IS	IT	LT	LU	LV	MK
ALMP exp. total / GDP	2004-2010	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	N/A
ALMP exp.: measures / GDP	2004-2010	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	N/A
ALMP exp.: support / GDP	2004-2010	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Child benefits p.c.	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Child benefits/GDP	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Childcare (<29h, <3y)	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Childcare (<29h, 3-6y)	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Childcare (>29h, <3y)	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Childcare (>29h, 3-6y)	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Income maint./GDP	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Parent. leave benef./GDP	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	N/A
EP Collective dismissal	2004-2010	2004-2010	2004-2010	2004-2010	2008-2010	2004-2010	2004-2010	2004-2010	2004-2010	N/A
EP regular employment	2004-2010	2004-2010	2004-2010	2004-2010	2008-2010	2004-2010	N/A	2008-2010	N/A	N/A
EP temporary employment	2004-2010	2004-2010	2004-2010	2004-2010	2008-2010	2004-2010	N/A	2008-2010	N/A	N/A
Gini coefficient	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Inequality (20/80)	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Exp. education / GDP	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Exp. social protection/GDP	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Pensions as share of GDP	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Tax wedge	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Dur. of unemployment insurance	2005;2007;2010	2005;2007;2010	2005;2007;2010	2005;2007;2010	2005;2007;2010	2005;2007;2010	2010	2005;2007;2010	2010	N/A
Replacement rate (long-term)	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Replacement rate (short-term)	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Bargaining level	2004-2010	2004-2010	2004-2010	2004-2010	2005-2009	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Coordination of wage-setting	2004-2010	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	N/A
National minimum wage setting	2004-2010	2004-2010	2004-2010	2004-2010	2005-2009	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Opening clauses	2004-2010	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Social pact agreed	2004-2010	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Social pact signed	2004-2010	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Type of wagesetting	2004-2010	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Union concentration (central level)	2004-2010	2004-2010	2005; 2007-2008	2004-2010	N/A	2004-2010	2006;2008	2006;2008	2006-2007	N/A
Union density (ICTWSS)	2004-2010	2004-2010	2004-2008	2004-2010	2004-2008	2004-2010	2006-2010	2004-2008	2004-2008	N/A
Fertility	2004-2010	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	N/A
Population growth	2004-2010	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	N/A

Table 3.12, continued

Variable	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK
ALMP exp. total / GDP	2006-2010	2004-2010	2005-2007	2004-2010	2004-2010	2004-2010	2004-2010	2005-2008	2004-2010	2005-2009
ALMP exp.: measures / GDP	2006-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2005-2009	2004-2010	2004-2010
ALMP exp.: support / GDP	2006-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2005-2010	2004-2010	2004-2010
Child benefits p.c.	N/A	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Child benefits/GDP	N/A	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Childcare (<29h, <3y)	2004-2010	2004-2010	05; 2007; 2010; 20	2004-2010	2004-2010	2007-2010	2004-2010	2004-2010	05-2007; 2008-20	2004-2010
Childcare (<29h, 3-6y)	2004-2010	2004-2010	05; 2007; 2010; 20	2004-2010	2004-2010	2007-2010	2004-2010	2004-2010	2004-2010	2004-2010
Childcare (>29h, <3y)	2004-2010	2004-2010	05; 2007; 2010; 20	2004-2010	2004-2010	2007-2010	2004-2010	2004-2010	2004-2010	2004-2010
Childcare (>29h, 3-6y)	2004-2010	2004-2010	05; 2007; 2010; 20	2004-2010	2004-2010	2007-2010	2004-2010	2004-2010	2004-2010	2004-2010
Income maint./GDP	N/A	2004-2010	2004-2010	2004-2010	2004-2010	2007-2010	2004-2010	2004-2010	2004-2010	2004-2010
Parent. leave benef./GDP	N/A	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
EP Collective dismissal	N/A	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
EP regular employment	N/A	2004-2010	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2008-2010	2004-2010	2004-2010
EP temporary employment	N/A	2004-2010	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2008-2010	2004-2010	2004-2010
Gini coefficient	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Inequality (20/80)	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Exp. education / GDP	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2005; 2007-2010	2004-2010	2004-2010	2004-2010	2005-2009
Exp. social protection/GDP	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Pensions as share of GDP	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Tax wedge	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Dur. of unemployment insurance	2010	2005; 2007; 2010	2005; 2007; 2010	2005; 2007; 2010	2005; 2007; 2010	2010	2005; 2007; 2010	2007; 2010	2005; 2007; 2010	2005; 2007; 2010
Replacement rate (long-term)	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2008-2010	2004-2010	2004-2010	2004-2010	2004-2010
Replacement rate (short-term)	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2008-2010	2004-2010	2004-2010	2004-2010	2004-2010
Bargaining level	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Coordination of wage-setting	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
National minimum wage setting	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Opening clauses	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010
Social pact agreed	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Social pact signed	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Type of wage-setting	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010
Union concentration (central level)	2006; 2008	2004-2010	2004-2010	2007-2008; 2010	2006; 2008	2006; 2008	2005-2008; 2010	2008	2005-2008	2004-2010
Union density (ICTWSS)	2004-2010	2004-2010	2004-2010	2004-2008; 2010	2004-2010	2006; 2008	2004-2010	05-2006; 2008-20	2004-2010	2004-2010
Fertility	N/A	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010
Population growth	N/A	2004-2010	N/A	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010	2004-2010

earnings as well as the employee's and the employer's social security contributions for low-wage earners. Those with low wages are likely to show the largest labor supply elasticity to taxes on the extensive margin, i.e. taxes influence their decision of whether to work or not; whereas, for higher income groups taxes would influence the decision of how much to work.¹⁷

Overall, the data availability is good and, given the international nature of the databases, the variables are readily comparable across countries, see Table 3.12. There are only two countries, Iceland and Malta, for which we could not collect a large share of these indicators. Generally, this would pose problems for our analysis, but for most of these countries (except for Iceland and Malta), we also do not have access to either EU-LFS or EU-SILC micro data; hence we will not be able to include them into our empirical analysis. In the case of Iceland and Malta, where micro data are available, we will only be able to refer to those institutional variables that are available and take this data scarcity into consideration when interpreting the results.

Furthermore, there are some variables that are not available for the entire time period from 2004 to 2010 for all countries. For instance, the employment protection variables are not available for Romania, Latvia, Lithuania, Cyprus, and Bulgaria, since these are not OECD countries, and are therefore not covered by the OECD database. For most countries, the variable “duration of unemployment insurance” only exists for 2005, 2007, and 2010. In addition, the two variables capturing “union membership concentration” are not available for all years. For our empirical analysis this will not pose major problems since for both, “union membership concentration” and “duration of unemployment insurance”, we can approximate the missing years with the previous figure by assuming there were no changes in between, or by interpolating between years. Furthermore, the approximated coverage rates of short-term unemployment benefits, for those that are unemployed for maximum 12 months, and all unemployed were calculated using the EU-SILC data set and stem from ISG and RWI (2010). This variable is only available for 16 countries. Therefore, we will need to limit our analysis to a smaller country sample when using this variable.

3.3 Empirical Strategy

This section provides an overview of the analytical tools that are used for the empirical analysis of labour market transitions across different labour market states and contract types. In general, the empirical investigation proceeds in four steps.

First, we will compute descriptive statistics for the different labour market transitions under investigation, as well as for their persistence. Specifically, by combining the information on the individual's labour market state and contract type in a specific year with the respective information on the status and contract type in the previous year, we will construct transition probabilities. These transition probabilities from period t to period $t+1$ will then be presented in the form of Markov transition matrices (see Box 3.1 for technical details). In order to give an EU-wide overview and also to emphasize country-specific as well as group-specific differences, Markov transition matrices will be presented for the total population and the EU as a whole as well as for specific countries and various categorical stratifications (gender, age, educational level). Furthermore, in order to provide descriptive evidence on the importance of the recession for labour market dynamics, we present Markov transition matrices both for the time period before the recession and for the recessionary time period. In doing so, we use the technical definition of a recession described in Section 3.2.1.

¹⁷ For example, low-skilled women, who are generally also low-wage earners, have been shown to display relatively high labour supply elasticities (Keane 2011).

Box 3.1

Markov transition chains and Markov matrices

Whether an individual is employed, unemployed, or inactive in one period is not random but rather dependent on the person's state in the previous period. For this reason we depict transitions using Markov Transition Chains which model outcomes as dependent of the preceding outcome. Markov Chains have the property that the distribution of a variable x in period $n+1$ is determined by the distribution of this variable in the previous period (Cameron and Trivedi, 2005). Formally this means:

$$\Pr[x_{n+1} = x \mid x_n, x_{n-1}, \dots, x_0] = \Pr[x_{n+1} = x \mid x_n]$$

This can easily be applied to our analysis. For example, the probability of a transition from unemployment (u) in period n to employment (e) in $n+1$ would be: $t_{ue} = \Pr[e_{n+1} = e \mid u_n = u]$. Other transitions are also possible, for example, employment-to-employment, employment-to-unemployment, and unemployment-to-unemployment, all of which can be described in a transition matrix (T) (Grinstead and Snell, 2009).

$$T = \begin{array}{cc} & \begin{array}{c} E \\ U \end{array} \\ \begin{array}{c} E \\ U \end{array} & \begin{array}{cc} 99\% & 1\% \\ 5\% & 95\% \end{array} \end{array}$$

The first row of the matrix provides the probabilities of possible states following employment in the previous period; here, these are staying in employment or becoming unemployed. The second row shows the probabilities after a period of unemployment. Our example of a transition from unemployment-to-employment is just one element of this transition matrix and it amounts to 5%. In our analysis, we will augment this exemplary transition matrix to incorporate different states and different individual characteristics (such as gender, age, education); the underlying analytical method, however, will remain the same.

Second, we will conduct a cluster analysis in order to identify certain groups of EU countries that share common features with respect to the institutional setting (see Box 3.2 for technical details). This type of clustering may give interesting insights, as it indicates which countries are similar in terms of labour market institutions, which are important determinants of labour market dynamics.

Box 3.2

Cluster Analysis

Cluster analysis is a statistical tool that provides the opportunity to detect common patterns of specific features in a given data set. In this report we seek to find common institutional features of labour markets in our country sample. The general aim is to classify observations of a sample into homogenous sub-groups or clusters (e.g. "flexicurity" or "interventionist" countries). Thereby, *within* each cluster a high degree of similarities with respect to specific features is given. Concurrently, these specific features differ *between* clusters.

There is a wide range of clustering methods, which can be categorized into hierarchical and partitional clustering (for details, see Everitt et al., 2011). Partitional clustering is a division of the data points into non-overlapping clusters. In contrast, in hierarchical clustering, clusters consist of sub-clusters, and clusters are organized as a tree. Hierarchical clustering is more flexible compared to partitional clustering as the number of clusters does not have to be pre-specified. To cluster countries with respect to labour market transitions as well as labour market policies, we therefore apply hierarchical clustering.

This method follows an iterative process. In the first step, each observation builds one cluster (lowest level, one cluster per observation). In each of the following iterations, the two nearest neighbouring clusters are merged into a larger cluster. The process ends as soon as all observations are assigned to a single cluster which would include all observations.

In order to form clusters we use Ward’s method which minimizes the error within a cluster. Formally this means that E (the sum of within cluster errors) is minimized.

$$E = \sum_{m=1}^g E_m$$

Where E_m captures the following distance measure:

$$E_m = \sum_{l=1}^{n_m} \sum_{k=1}^{p_k} (x_{m,l,k} - \bar{x}_{m,k})^2$$

m indicates the number of clusters, k the number of variables, and l is the index for the different countries. Therefore E_m is the sum of the squared distance for one variable between each country and the cluster average (Everitt et al. 2011). This clustering algorithm is used widely in the literature (Mutander et al. 2012, Eichhorst et al 2009, Maloney and Cunningham 1999) since it creates rather homogeneous groups.

In order to conduct the cluster analysis, we start by averaging all variables over the pre-crisis years (2004-2007) and standardize using z-scores. Furthermore, we follow Eichhorst et al. (2009) in using variables from three categories to construct clusters: Labour supply, adaptability of the labour market, and wage setting institutions. As Box 3.2 explains, we use a hierarchical clustering method, the Euclidean squared distance as a dissimilarity measure and Ward’s clustering algorithm. We will cluster with respect to each of the three institutional categories separately and then once for all three variable categories together.

In order to identify the key determinants of labour market dynamics, the third step of our empirical analysis consists of econometric analyses of the transitions between employment (temporary, permanent), self-employment, education, unemployment and nonparticipation (out of the labour force). As the outcome variables of interest at the individual level are binary outcomes (e.g. transition from inactivity to employment: yes/no), we will use logit and multinomial logit models¹⁸ (see Boxes 3.3 and 3.4 for technical details). For most labour market transitions under consideration, we will give preference to the estimation of multinomial logit models (see Box 3.4 for technical details). A multinomial specification explicitly considers “competing risks”, i.e. a situation where an individual in a given labour market state faces several different and mutually exclusive destination states. This is particularly important in the case of transitions from employment (to a new job, to unemployment, or to nonparticipation), and out of unemployment, where the transitions clearly involve competing risks.

In order to investigate the association between labour market transitions and personal and household characteristics and to analyse differences across countries and over time we first estimate a baseline specification of a multinomial logit model for the various labour market

¹⁸ Alternatively, it is also possible to apply probit and multinomial probit models which usually generate results which are practically identical to those from the corresponding logit models.

Box 3.3

Logit and Probit model

In a large parts of the report, we look at transitions from one state (y_i) to another, i.e. from employment to unemployment, or from a permanent to a temporary contract. Since an individual can only be in one of these states at a time, our outcome variables are binary, which we can formally express by:

$$y_i = \begin{cases} 1 & \text{if employed} \\ 0 & \text{if unemployed} \end{cases}$$

Modeling this binary choice we will use logit and probit models (see Greene, 2012) that allow us to estimate the probability (p_i) of being in a specific state (e.g. employed) given certain characteristics (vector X_i) of an individual i , as the following formula indicates:

$$p_i = Pr(y_i = 1 | x_i) = F(X_i'\beta)$$

The cumulative distribution function $F(\cdot)$ has the form of a logistic distribution for logit models and that of the standard normal distribution for probit models. Using cumulative distributions ensures that the predicted probabilities will lie between 0 and 1. Note, even though probit and logit models use different distribution functions; in practice, they yield very similar results in terms of predicted probabilities.

Unlike linear models, the coefficients of probit or logit regression results do not provide the marginal effects, i.e. how much a small change in one explanatory variable affects the probability of an event happening. This is because the distribution function depends on all explanatory variables (X_i). Formally we can see this when differentiating F with respect to a particular variable x_1 (e.g. age):

$$\frac{\partial Pr[y_i = 1 | X_i]}{\partial x_{i1}} = f(X_i'\beta)\beta_1 = MF_{x_1}$$

Therefore, in order to interpret the magnitude of the effects we need to evaluate them at certain values of the explanatory variables. We opt for calculating the average marginal effects of the individuals as suggested by Cameron and Trivedi (2005).

To illustrate the interpretation of probit and logit results, consider the following simplified example: $Pr(y_i = 1 | x_i) = F(\beta_0 + \beta_1 x_1 + \beta_2 x_2)$, where y_i indicates employment or unemployment, x_1 captures age, and x_2 is dummy variable indicating training participation. Here, being one year older changes the probability of being employed by MF_{x_1} units. For the dummy or indicator variables, such as *training*, the interpretation is slightly different: in this case the marginal effect, MF_{x_2} , captures the effect of a categorical change, from no training to some training, on employment.

Box 3.4

Multinomial logit model

Very often our outcome variables fall into more than two categories, for example, “employed”, “unemployed”, and “inactive”. These categories do not follow a natural order and are independent. Therefore, we refer to the multinomial logit model (MNL) to model transitions between these outcomes econometrically (Wooldridge, 2010). Essentially, the MNL estimates binary logit models for each pair of outcome categories, simultaneously taking into account the interrelation of the outcomes. Given the similar estimation approach of the MNL, point estimates resulting from separate binary regressions of the transitions from employment to unemployment, from employment to employment and from employment to inactivity are comparable in size to the MNL estimates. However, the MNL estimates are more efficient since they take information on the alternatives into consideration (Kennedy, 2008).

For the example mentioned above, our three states (m) are unemployed (U), employed (E), and inactive (I). Given a vector of individual characteristics \mathbf{X} , the MNLM can be written as:

$$\ln \Omega_{m|b} = \ln \left\{ \frac{\Pr(y=m|\mathbf{X})}{\Pr(y=b|\mathbf{X})} \right\} = x\beta_{m|b} \text{ with } m=1, \dots, 3.$$

where b is the base category or comparison group and $\ln \Omega_{m|b}$ are the log-odds of being in state m, compared to state b. Note the log-odds of an outcome compared to itself (same as the base) will always be zero,

$$\ln \Omega_{b|b}(x) = \ln 1 = 0$$

For this it must hold that the coefficient equals zero ($\beta_{b|b} = 0$). All other outcomes are calculated relative to this chosen base outcome. The choice of the comparison group – the so-called parameterization of the model – does not influence the marginal effects (predicted probabilities) of the model, although the estimated parameters $x\beta_{m|b}$ change, depending on which base outcome is chosen to calculate the log-odds of the model.

When we take being employed (E) as the base category, the predicted probability of being unemployed (U) is:

$$\Pr(y = U|x) = \frac{\exp(x\beta_{U|E})}{\exp(x\beta_{U|E}) + \exp(x\beta_{I|E})}$$

Or more generally:

$$\Pr(y = m|x) = \frac{\exp(x\beta_{m|b})}{\sum_{j=1}^J \exp(x\beta_{j|b})} \text{ with } m = 1, \dots, j.$$

The marginal effects from the multinomial logit model can be interpreted as predicted probabilities. For example, in a previous report using EU-LFS data we also estimated employment-to-employment transitions. For one of the estimations the marginal effect for being male was 0.0119. This means that the probability of a transition from employment-to-employment increases by 1.19%, compared to being female. Likewise the marginal effect of 0.0322 for being highly educated (ISCED 5-6), means that the probability of an employment-to-employment transition increases by 3.22% compared with the reference group of low education.

All estimation tables presented in Section 6 include the pseudo R-squared statistic. This pseudo R-squared is a goodness of fit measure that applies the R-squared (ratio between the explained variation and total variation) of the simple linear estimation to non-linear estimations such as the multinomial logit model. However, in applied microeconometrics this statistic does not play an important role. Kennedy (2008) goes as far as calling the goal of maximizing the R-squared a „questionable criterion” (p. 377). The reason for this is that in cross-sectional data, R-squareds are generally low, unlike when using time series data. This result also applies to the panel data used in our analysis, as the EU-SILC data contain an important cross-sectional element. Therefore, in microeconomic analysis attention is shifted to the statistical and economic significance of the coefficients that were selected based on economic theory. In addition to this, in our analysis, the R-squared is relatively low because labour market transitions are a rather rare event (i.e. the probability of a transition occurring is relatively low).

transitions. This baseline regression includes personal and household characteristics as well as country dummies in order to control for region-specific factors that are constant over time. As the main focus of the analysis is on the impact of the severe financial and economic crisis on labour market dynamics, we tackle this issue in three distinct ways:

- 1) We estimate extended specifications of the multinomial logit model additionally containing a crisis indicator. Interacting the crisis indicator with demographic characteristics (gender, age, educational level) allows to investigate how the impact of the crisis varies over demographic groups. We estimate these specifications separately.¹⁹
- 2) In order to examine whether the effect of personal and household characteristics on labour market transitions are different during booms and recessionary periods we estimate the base-line regression model separately for the time period before crisis and after start of crisis.
- 3) For a detailed analysis of the impact of the crisis on labour market dynamics, we estimate multinomial regression models including a large set of business cycle indicators.

We further estimate the multinomial logit models separately for specific countries, as this allows us to examine whether the association between labour market transitions and the explanatory variables are homogeneous across the EU countries under consideration.

4. Cluster Analysis

Chapter 3 highlighted the importance of institutional variables for labour market developments and that they are bound to play a crucial role in labour market transitions during the Great Recession. Given their importance, we would like to analyze what impact different institutional settings had on labour market transitions. However, the plenitude of different institutional characteristics makes it difficult to draw concrete conclusions. Therefore, we use cluster analysis in order to summarize and group different types of countries according to their institutional characteristics. These groups of countries of similar labour market institutions can aid us in interpreting the regression results (for technical details, see Box 3.2).

Choosing the variables for our cluster analysis we follow Eichhorst et al. (2009) closely since they also construct clusters based on a similar country and variable sample. We adopt three of their variable categories: they distinguish between factors that influence the number of workers that supply labour, the adaptability of the labour market to structural changes, and the wage setting institutions. The latter can impact the intensive margin of labour supply, i.e. how many hours employees decide to work given a certain wage. Table 4.1 summarizes which variables we use to approximate their different categories.

We introduce some new variables into the framework of Eichhorst et al. (2009). In category A, we also make use of coverage rates computed separately for the short-term unemployed (less than 12 months) and the long-term unemployed (see Table A.3.6 in RWI 2010). These were calculated using the EU-SILC data set. As mentioned in the institutional data section, this variable is only available for 16 countries; hence, when clustering with respect to category A and all variables we need to restrict the country sample accordingly. In category C we additionally include “minimum wage” as a variable since this is a central feature for some European labour markets. Finally, we take the reciprocal of the original version of inequality 80/20 to facilitate a more intuitive interpretation, since this way a higher value means less wage dispersion and points in the same direction as the other variables in terms of wage rigidities.

¹⁹ We do this mainly in order not to include too many explanatory variables relative to the number of observations in the regressions – which may lead to imprecise estimates – and to avoid issues of collinearity. Also, the explanatory power of our model does not change significantly if we estimate one single specification which includes all interactions simultaneously.

Table 4.1

Institutional variables used for cluster analysis

Category/variables	Source
Category A: Influences on extensive margin of labour supply – to work or not to work?	
Short-term net replacement rate	OECD
Long-term net replacement rate	OECD
Tax wedge	Eurostat
Unemployment benefit coverage rates (short-term)	EU-SILC, own calculations
Unemployment benefit coverage rates (long-term)	EU-SILC, own calculations
Category B: Adaptability of labour market to structural changes	
ALMP as percentage of GDP	Eurostat
Education spending as percentage of GDP	Eurostat
Category C: Wage setting	
Union density	ICTWSS
Wage setting coordination	ICTWSS
Minimum wage	ICTWSS
Wage dispersion approximated by a measure of inequality 80/20	Eurostat

Source: Own compilation.

The cluster analysis with respect to institutions that influence labour market supply produces six different country clusters. Table 4.2 (Cluster A) presents these. Austria and Belgium form cluster group 1, with very generous benefit systems both in terms of short- and long-term net replacement rates and high benefit coverage rates. The second cluster group (France and Sweden) has slightly lower benefit coverage rates and low long-term net replacement rates. In contrast, cluster group 6 (Estonia, Greece, and Poland) is characterized by low net replacement rates and benefit coverage rates as well as low tax wedges. The remaining cluster groups (3, 4, and 5) line up in between these two extremes; most notably all have very low long-term net replacement rates. Note, however, that this clustering can only provide an approximation. In order to avoid the curse of dimensionality, we include only a few variables to summarize the institutions that influence the quantity of labour supply. We therefore leave aside other potentially important dimensions of the benefit system, such as the duration of unemployment insurance or monitoring.

Table 4.2

Clusters with respect to category A variables
net replacement rates and tax wedge

1	2	3	4	5	6
AT	FR	LU	CZ	LV	EE
BE	SE		ES	PT	GR
			IT		PL
			SI		

Source: OECD, Eurostat, EU-SILC, and own calculations. – Notes: Not included in this cluster analysis are Ireland, Cyprus, Iceland, Germany, Lithuania, Denmark, the Netherlands, Finland, Norway, Hungary, and Slovakia because of missing benefit coverage rates, and Bulgaria and Romania because of missing data on replacement rates.

Results of the cluster analysis with respect to how much the public hand finances education and intervenes in the labour market are presented in Table 4.3. The cluster groups are ordered by average expenditure levels. Denmark (cluster group 1), Belgium, Finland, the Netherlands, and Sweden (cluster group 2) have very high expenditures on active labour market policies and

education, whereas Bulgaria, the Czech Republic, Greece, Italy, Luxembourg, Romania, and Slovakia (cluster group 7) are non-interventionist and have a lower level of education spending. The other groups have different combinations of the two extremes. For instance, cluster group 3 and 6 both have a focus on education, though the former on a higher level. Cluster group 5 is more focused on active labour market policies with average education expenditures. And cluster group 4 reports average values for both expenditure types.

Table 4.3

Clusters with respect to category B variables

ALMP and Education as % of GDP

1	2	3	4	5	6	7
DK	BE	CY	AT	DE	EE	BG
	FI	NO	FR	ES	HU	CZ
	NL		IE		LT	GR
	SE		PL		LV	IT
			PT		SI	LU
					UK	RO
						SK

Source: Eurostat, and own calculations.

Third, we cluster with respect to wage setting variables (Table 4.4 – Cluster C). The cluster groups are presented according to their wage setting flexibility. Cluster group 1 (Denmark, Finland, Norway, and Sweden) have rather rigid wage setting institutions, but no minimum wages and low wage dispersion. In contrast, cluster group 7 (Estonia, Greece, Latvia, Lithuania, Poland, Portugal, and the UK) have a much less coordinated wage setting, sometimes minimum wages, and high wage dispersion. Cluster groups 2, 3, 4, 5, and 6 dispose of different combinations of these wage setting institutions. Cyprus stands out in terms of wage setting institutions and forms a cluster group of its own.

Table 4.4

Clusters with respect to category C variables

Wage setting coordination, union density, and inequality

1	2	3	4	5	6	7
DK	BE	ES	BG	CY	AT	EE
FI	NL	IE	CZ		DE	GR
NO	SI	RO	FR		IT	LT
SE			HU			LV
			LU			PL
			SK			PT
						UK

Source: ICTWSS, Eurostat, and own calculations.

In a last step, we cluster with respect to all institutional variables. Table 4.5 shows the results. Austria, Belgium, and Sweden form a cluster group that is characterized by a generous and inclusive benefit system with high education and active labour market policy expenditures, high union density, low inequality. We therefore name it the cluster of the “highly coordinated, generous and inclusive, and interventionists”. The Czech Republic, Spain, France, Luxembourg, and Slovenia form another cluster group. Their commonalities range from high short-term benefits coupled with average benefit coverage rates, average active labour market policy and education expenditures, low union density, national minimum wages, and average wage dispersion. We summarize this with the terms “Minimum Wages, midrange benefits & coverage,

average interventions”. The cluster group of Estonia, Greece, Italy, Latvia, Poland, and Portugal is set apart by low short-term and long-term unemployment benefits, low benefit coverage rates, and some forms of minimum wages. We therefore coin it “liberal, scarce & exclusive benefit system”.

Table 4.5

Clusters with respect to all categories

highly coordinated, generous and inclusive, and interventionists	Minimum Wages, midrange benefits & coverage, average interventions	Liberal, scarce & exclusive benefit system
1	3	2
AT	CZ	EE
BE	ES	GR
SE	FR	IT
	LU	LV
	SI	PL
		PT

Source: OECD, ICTWSS, Eurostat, EU-SILC, and own calculations. – Notes: Not included in this cluster analysis are Ireland, Cyprus, Iceland, Germany, Lithuania, Denmark, the Netherlands, Finland, Norway, Hungary, and Slovakia because of missing benefit coverage rates, and Bulgaria and Romania because of missing data on replacement rates.

The cluster analysis method does, however, pose some methodological and interpretational challenges. For one thing, the composition of clusters is rather dependent on the number of clusters, which can only to a limited extent be chosen objectively. Furthermore, within many clusters, the aim of the cluster analysis to find as homogeneous country groups as possible, is not completely achieved, i.e. there is still a large within-cluster variation in institutions. Furthermore, the cluster analysis is based on a limited number of institutional indicators and therefore provides a partial institutional perspective only, which can seem counterintuitive to policy makers.

Against this background, the results of our cluster analysis do not lend themselves to conducting a regression analysis at the cluster level, i.e. separately for the different clusters identified. Nevertheless, they can be used to study the role of the institutional features of labour markets that are of particular policy interest given the impact of the Great Recession. We will do so by focusing our analysis in Section 6.5.2 on France, Greece, Italy, Poland, UK, Spain, and Sweden, i.e. countries belonging to a variety of clusters. Despite the methodological challenges, the cluster analysis confirms that these countries provide a broad sample of different institutional settings.

5. Descriptive Analysis

This chapter presents descriptive results on labour markets in Europe, both before and during the financial and economic crisis, which we derive from the micro data sets EU-SILC and EU-LFS. In order to do so, Section 5.1 provides descriptive evidence on the main features of the labour markets before the crisis. In particular, the section describes the prevalence of different labour market states before the crisis, and the labour market participation of different demographic groups. Section 5.2 contains descriptive evidence on labour market transitions, both before and during the crisis. In both sections, we begin by examining the labour market transitions at an aggregate level, i.e. considering all countries and socio-economic groups together, before turning to a disaggregated level that differentiates between age, gender, skill-groups, and selected countries. The hypotheses we derived in Chapter 2 will guide our analysis.

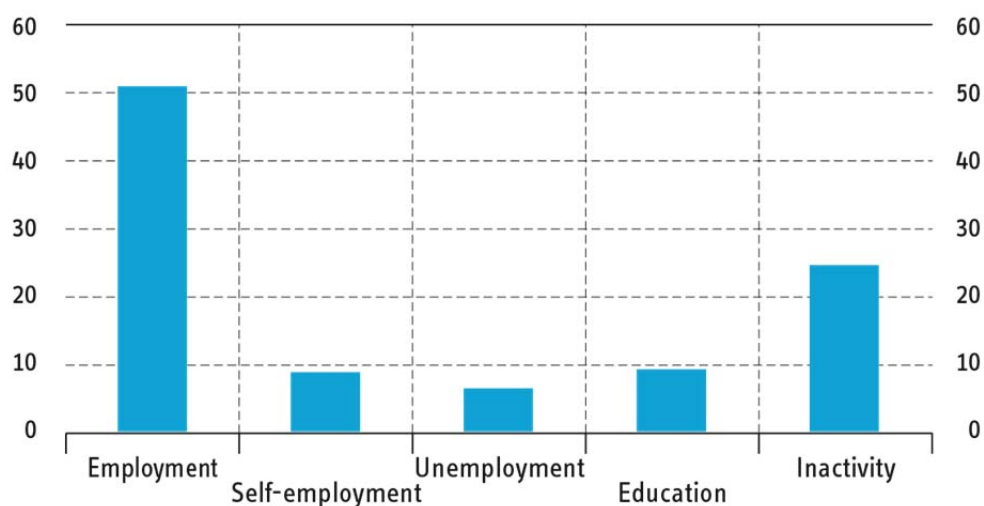
The description in Section 5.1 marks the starting point for our empirical analysis of labour market transitions in Section 5.2 since the character of the pre-crisis labour markets plays an important role in determining the dynamic response of the labour market during the crisis. For instance, if there were many employees on temporary contracts in a country, then the flows from this labour market state are likely to be high in absolute terms, which will have a strong effect on overall worker flows out of employment.

5.1 The European labour markets before the crisis

We start with a description of the labour market situation during the time period 2005-2007, i.e. just before the crisis, for all countries in our sample. Of the entire working-age population (age 15-65), 51 per cent are in employment, about 9 per cent in self-employment, and 6.4 per cent in unemployment – the remainder (24.6%) is inactive (Figure 5.1).²⁰

Figure 5.1

Pre-crisis labour market status for all countries



Source: EU-SILC and EU-LFS, own calculations.

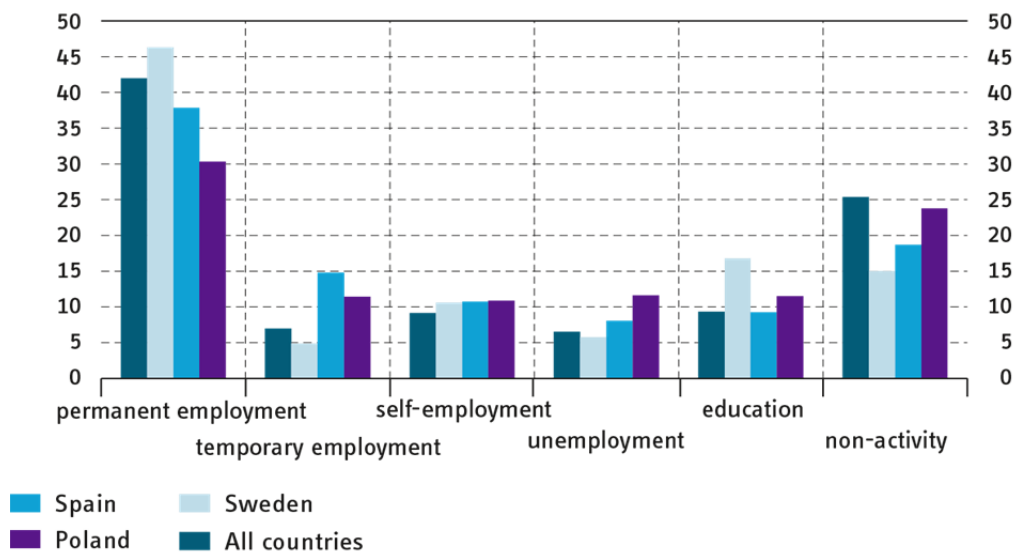
Figure 5.2 distinguishes between permanent and temporary employment and also sheds some light on how much variation there is in our country sample. For all countries in the sample (except for the UK and Denmark)²¹, 42 per cent of the working-age population is employed on a permanent contract. In Sweden this share amounts to about 47 per cent, in Poland to 31 per cent, and in Spain to 38 per cent. The share of temporary contract holders among the working-age population varies across countries, too. While the country sample average is 7 per cent, in Spain nearly 15 per cent and in Poland nearly 12 per cent of the working-age population have a temporary contract. In Sweden only about 5 per cent work on a temporary contract.

²⁰ Note that here we compute shares in reference to the working-age population. This is not the same base used to calculate regular unemployment or employment rates in official statistics, hence these numbers may appear smaller than what is reported elsewhere.

²¹ Information on contract type is not available for these two countries, see Section 3.1.1).

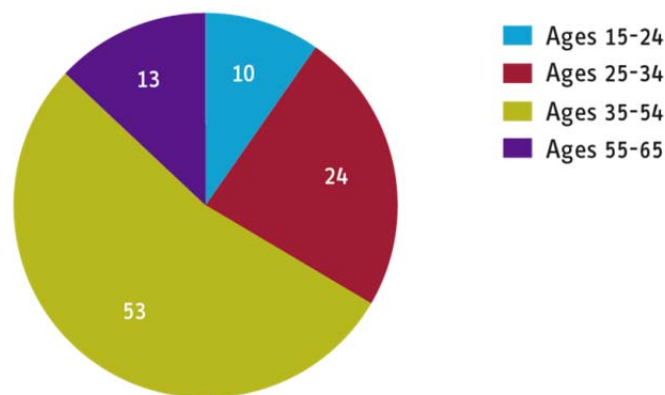
Self-employment is rather evenly distributed across our country sample, with an overall average of 10.8 per cent. The share of unemployment in the total working-age population is particularly high in Poland (nearly 12%), elevated in Spain (about 8%) and particularly low in Sweden (about 6%). Sweden also stands out in terms of the working-age population share that is in education, since with 17 per cent it is clearly above the country sample average of about 10 per cent. These three countries are below the country sample average share of inactive working-age population (26%). Poland, with a share of 24 per cent of the working-age population being inactive, comes closest to this figure, followed by Spain with 19 per cent and Sweden with 15 per cent.

Figure 5.2
Pre-crisis labour market status for selected countries



Source: EU-SILC and EU-LFS, own calculations. – Notes: The country sample average refers all countries except the UK and Denmark. These two countries do not differentiate between temporary and permanent contracts.

Figure 5.3
Labour force participation by age group

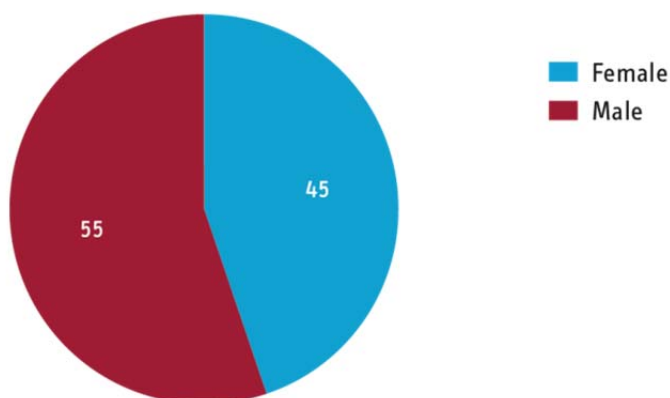


Source: EU-SILC and EU-LFS, own calculations.

In the following, we will look into the labour market status of different socio-economic groups, focusing on age, gender and skills. As one can see in Figure 5.3, those aged between 35 and 54 make up the largest share of the labour force²² (53%) and the youngest, those aged between 15 and 24 the smallest share (10%). Men participate more in the labour force than women since their labour force share is at 55 per cent and that of women at 45 per cent (Figure 5.4). Medium-skilled workers represent the largest share of the labour force (51%), low-skilled and high-skilled workers account for 25 per cent and 24 per cent respectively (Figure 5.5).

Figure 5.4

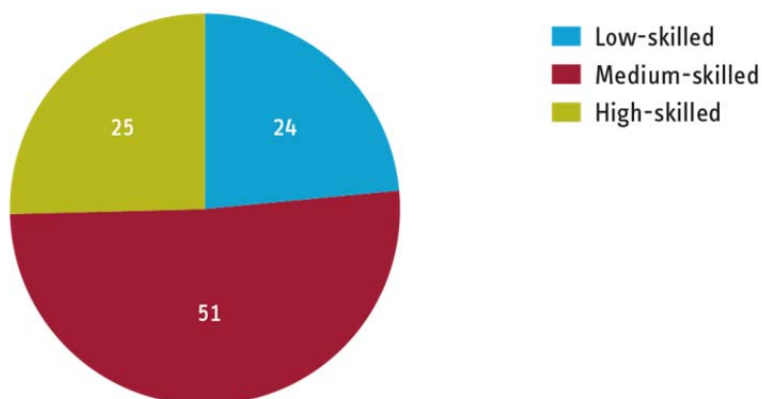
Labour force participation by gender



Source: EU-SILC and EU-LFS, own calculations.

Figure 5.5

Labour force participation by skill group



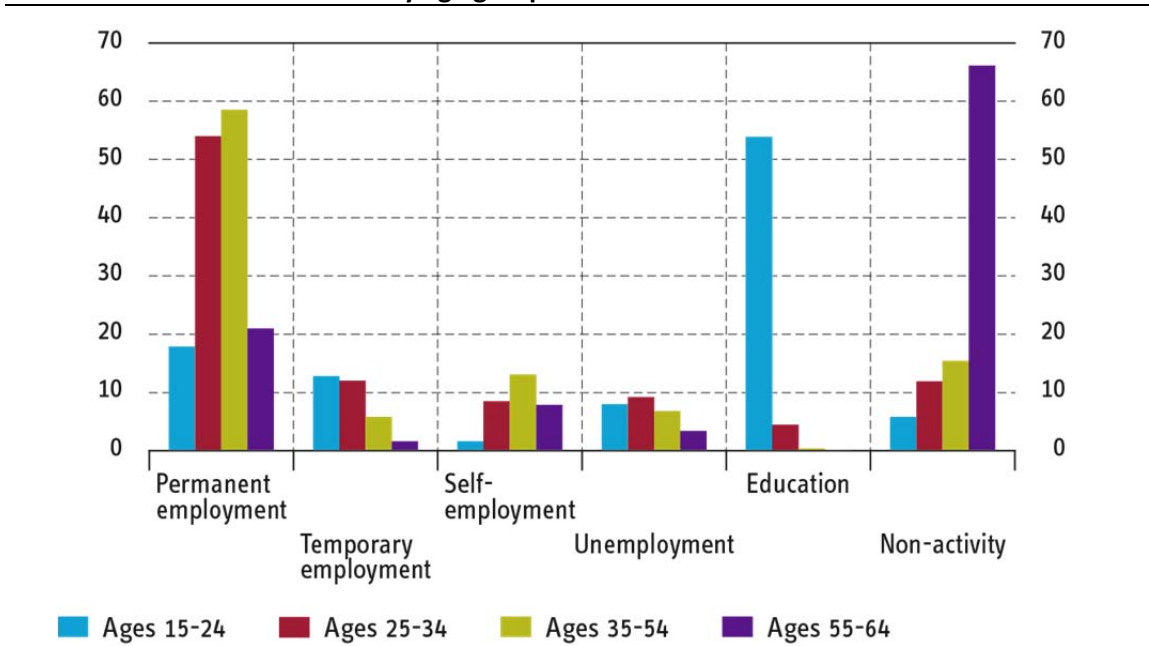
Source: EU-SILC and EU-LFS, own calculations.

The different socio-demographic groups have a very diverse distribution across the different labour market states. Figure 5.6 shows this for the different age groups. It becomes apparent that only about 18 per cent of those aged 15-24 are permanently employed, compared to

²² Labour force is defined as all those in employment, self-employment, and unemployment. Note that this is a different group than the working-age population, which also includes persons who are inactive or in education.

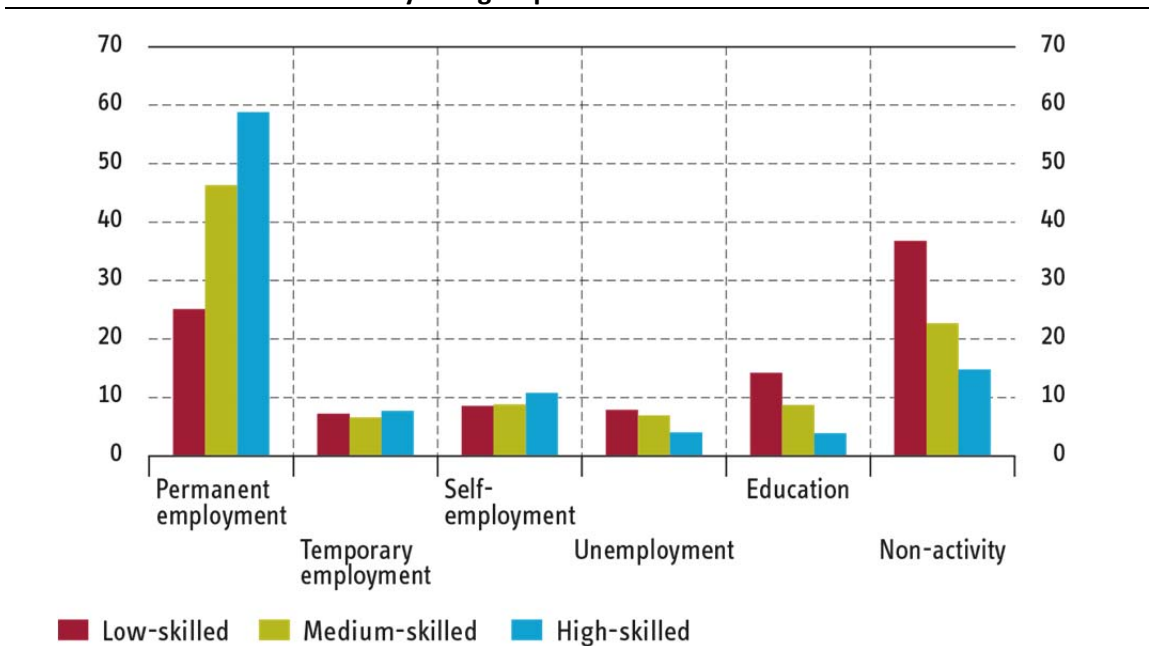
54 per cent and 59 per cent of those aged 25-34 and 35-54, respectively. In contrast, the youngest age group displays the highest share of temporary workers (13%), since the incidence of temporary contracts decreases over the life-cycle. This low participation in the labour market of those between ages 15 and 24 is most likely due to the fact that most of them (55%) are still in education. Similarly, 66 per cent of those aged between 54 and 65 are inactive, i.e. in retirement, which explains their low labour market participation.

Figure 5.6
Pre-crisis labour market status by age group



Source: EU-SILC and EU-LFS, own calculations.

Figure 5.7
Pre-crisis labour market status by skill group



Source: EU-SILC and EU-LFS, own calculations.

The shares of labour market status also vary by skill groups, as Figure 5.7 shows. Nearly 60 per cent of the high-skilled working-age population have a permanent job, whereas only 25 per cent and 46 per cent of the low-skilled and medium-skilled working-age people are in permanent employment. Among the low-skilled, the incidence of being in education is highest with 14.2 per cent; these could be people that are still in their initial education phase. Likewise the incidence of non-activity is also highest (with 37%) for the low-skilled working-age population. Hence, the labour market attachment is lowest for the low-skilled and highest for the high-skilled.

5.2 Labour market dynamics before and during the crisis

5.2.1 Labour market transitions on an aggregate level

As discussed in Chapter 2, the labour market transitions considered are likely to react very differently to the economic crisis. An obvious hypothesis that emerged is that flows from employment to unemployment increase during a recession. Table 5.1, depicting the Markov transition matrix (see Box 3.1), and Figure 5.8, showing the transitions out of employment, provide empirical support for this hypothesis. Before the crisis, from all workers who were employed (first line of Markov transition matrix) in the previous year, 91.9 per cent are still employed in the current; however, this transition rate drops to 90.8 per cent during the crisis. Hence, while most transitions from employment to other labour market states during the crisis are comparable to their pre-crisis level, the employment-to-unemployment transition rate increases by 1 percentage point. When looking at the development over time (Figure 5.9), we notice that up to 2007 the employment to unemployment transition rates were declining, indicating that just before the crisis, jobs were getting more stable.

Table 5.1

Yearly Markov transition matrix for all countries

Before and during the crisis²³

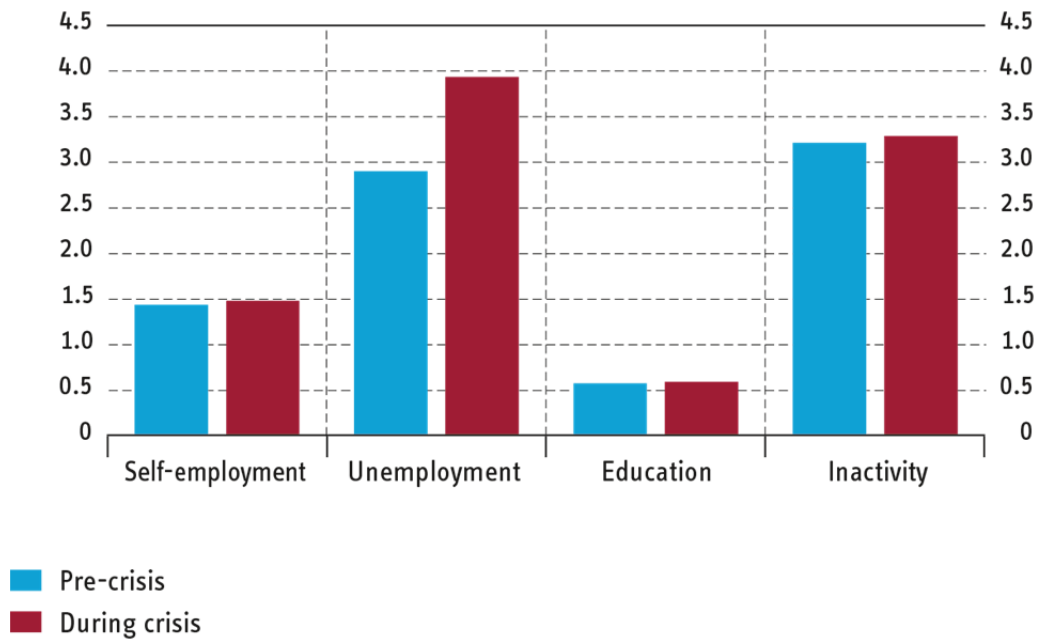
ORIGIN	DESTINATION									
	Employment	Self-employment	Unemployment	Education	Inactivity	Employment	Self-employment	Unemployment	Education	Inactivity
	Pre-crisis					During the crisis				
Employment	91.9	1.4	2.9	0.6	3.2	90.8	1.5	3.9	0.6	3.3
Self-employment	6.6	87.4	1.6	0.2	4.2	5.8	87.5	2.1	0.3	4.3
Unemployment	27.6	3.4	51.5	1.9	15.5	24.9	3.3	52.6	2.8	16.3
Education	15.3	0.8	3.8	77.0	3.0	13.5	0.9	5.5	77.4	2.8
Inactivity	5.0	1.4	2.3	0.6	90.7	4.5	1.4	2.7	0.7	90.6
Total	51.4	8.9	5.9	7.7	26.2	51.4	9.3	6.5	7.6	25.1

Source: EU-SILC and EU-LFS, own calculations.

As elaborated in the literature review, we expect that during the crisis, the transition probabilities from temporary employment to unemployment increase more than that of permanent employment to unemployment, because workers on temporary contracts are easier to dismiss.

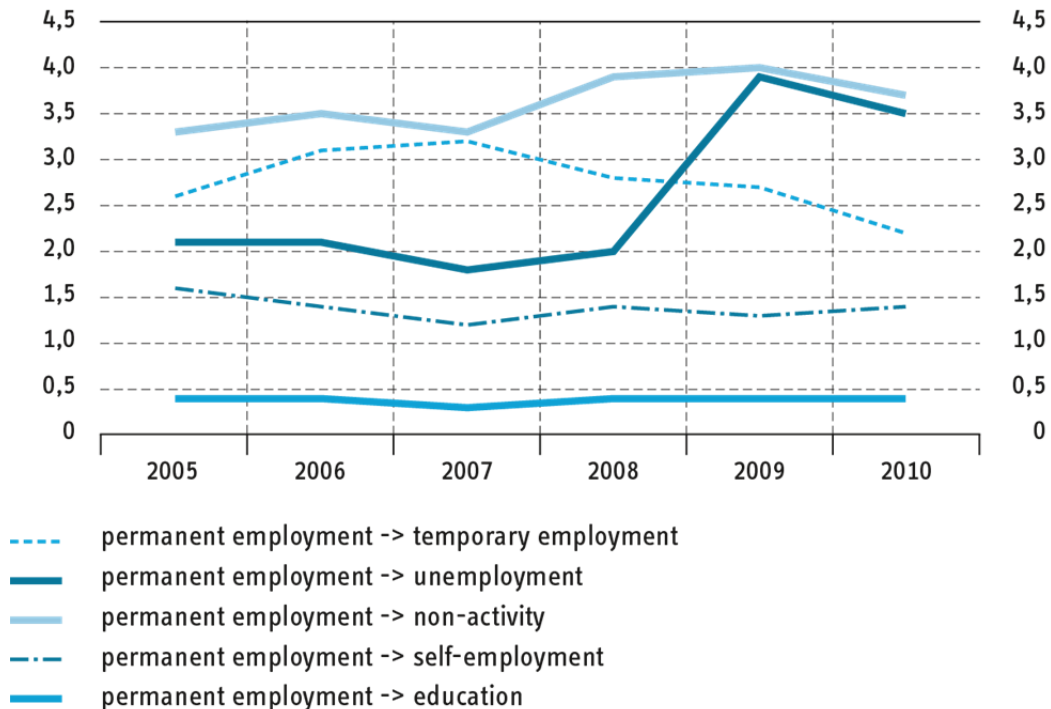
²³ "Pre-crisis" approximately stands for the time period 2005-2007 and "during the crisis" for 2008 to 2010. These are approximated time periods because the pre-crisis and in-crisis periods differ for each country.

Figure 5.8
Transitions from employment to...



Source: EU-SILC and EU-LFS, own calculations.

Figure 5.9
Transitions from permanent employment over time



Source: EU-SILC, own calculations.

Both Table 5.2 and Figure 5.10 confirm this hypothesis. Figure 5.10 provides an insight into how much more temporary workers were affected by lay-offs during the crisis than this was the case for workers on permanent contracts. For one thing, compared to the pre-crisis period, the probability of becoming unemployed increases by 4.1 percentage points for temporary and by 1.3 percentage points for permanent workers during the crisis. For another, during the crisis the transition from temporary employment to permanent employment declines strongly, i.e. temporary employment is much less of a stepping stone to permanent employment than the pre-crisis period.

Table 5.2

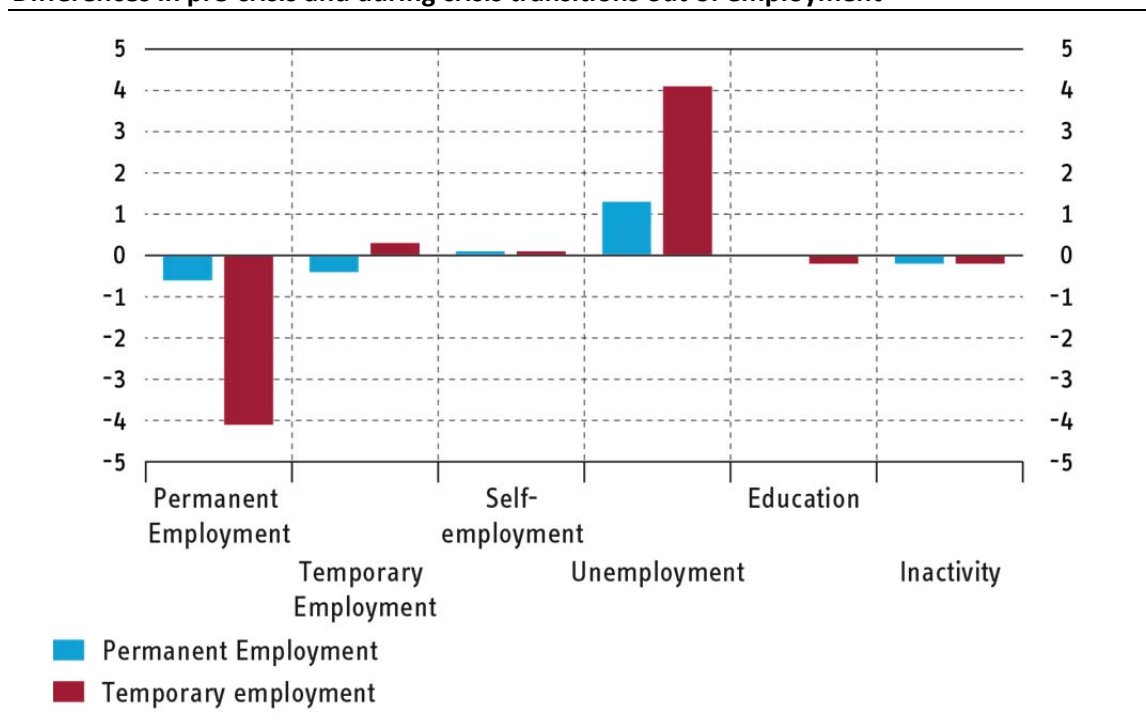
Yearly Markov transition matrix for all countries, detailed employment states
Before and during the crisis

ORIGIN	DESTINATION											
	Perm Employment	Temp Employment	Self-employment	Un-employment	Educational	Inactivity	Perm Employment	Temp Employment	Self-employment	Un-employment	Educational	Inactivity
	Pre-crisis						During the crisis					
Perm Employment	90.3	3.0	1.2	2.0	0.3	3.2	89.7	2.6	1.3	3.3	0.3	3.0
Temp employment	27.2	54.8	2.1	9.8	2.0	4.1	23.1	55.1	2.2	13.9	1.8	3.9
Self-employment	4.8	1.7	87	1.8	0.2	4.5	3.7	1.6	87.7	2.4	0.3	4.4
Unemployment	11.8	16	3.7	51.9	2.2	14.5	9.1	14.5	3.6	56.7	3.0	13.1
Education	6.2	7.2	0.9	4.9	77.7	3.2	3.9	5.6	1.0	6.8	79.7	3.0
Inactivity	3.3	1.9	1.5	2.8	0.7	89.7	2.6	1.7	1.7	3.5	0.8	89.7
Total	43.7	8.0	10.1	6.6	8.0	23.6	41.6	7.7	11.1	8.3	8.6	22.8

Source: EU-SILC, own calculations. – Notes: No data available for Denmark and the United Kingdom.

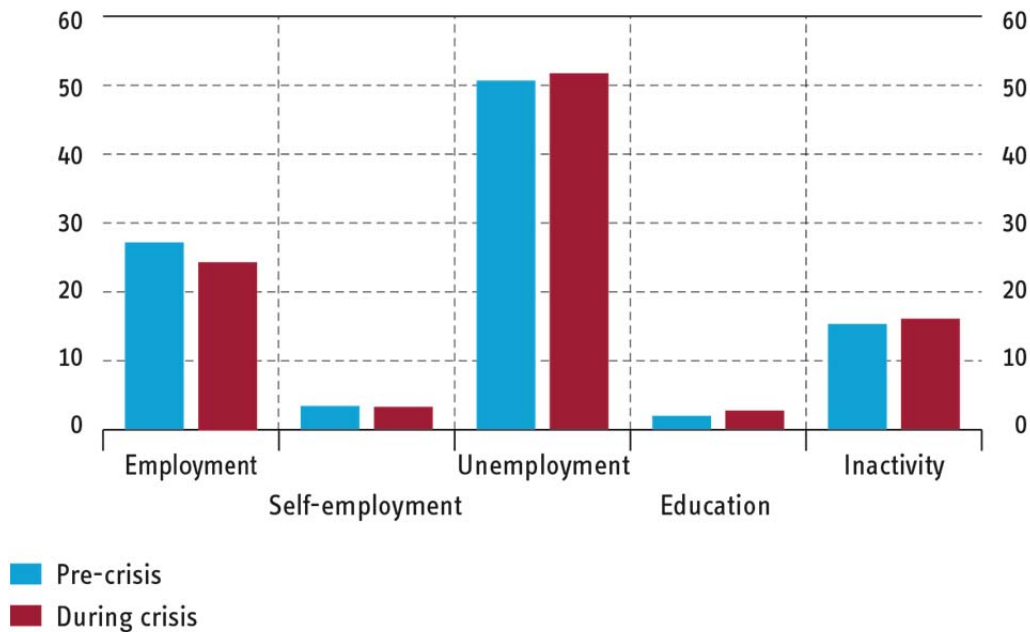
Figure 5.10

Differences in pre-crisis and during crisis transitions out of employment



Source: EU-SILC, own calculations.

Figure 5.11
Transitions from unemployment to...



Source: EU-SILC, own calculations.

Furthermore, another hypothesis from Chapter 2 is that unemployment-to-employment transitions become less frequent in times of an economic crisis because firms post fewer vacancies. Table 5.1 is in line with this hypothesis. The probability of changing out of unemployment into employment decreases by nearly 3 percentage points. Instead, the probabilities of staying in unemployment, taking up education, or withdrawing from the labour market all increase by about 1 percentage point. Figure 5.11 illustrates these findings graphically. These findings suggest that once unemployed, looking for a new job takes longer during the crisis than beforehand. For certain demographic groups, searching for a new job is too costly, and therefore, they leave the labour market altogether. Others may find that the opportunity costs for education, e.g. in terms of wages or career prospects, fall during a crisis and use this period to go back to education to enhance their skills and knowledge base.

5.2.2 Labour market transitions for different socio-economic groups

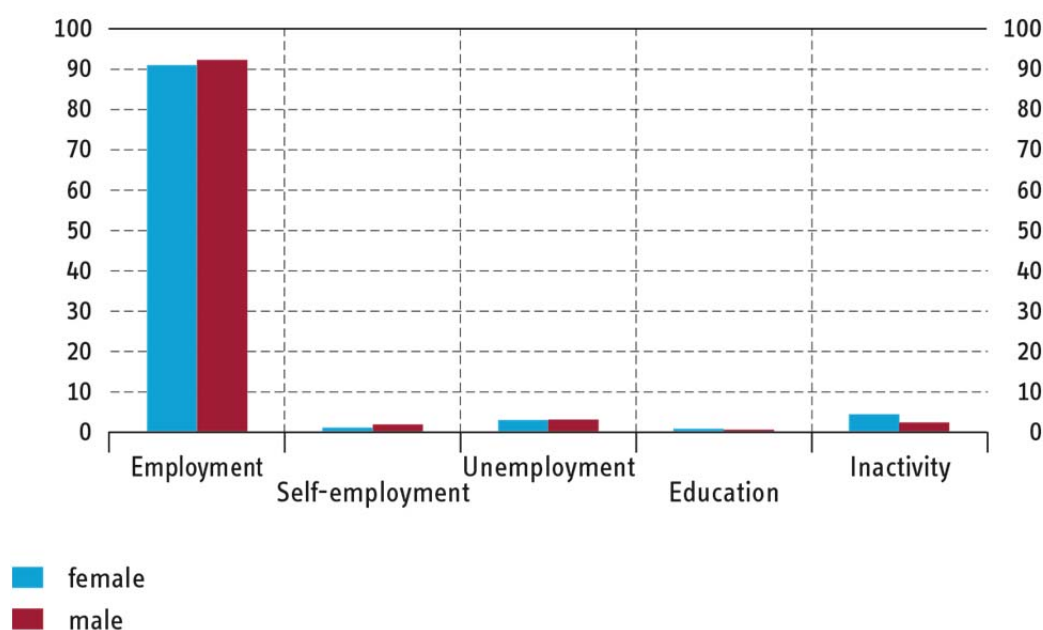
The descriptive statistics in Table 5.3 and Figures 5.12 and 5.13 present the transition rates disaggregated by gender. During the crisis, women have a slightly lower probability of remaining in employment from one year to the next (about 1 percentage point less than men) but a higher probability of moving out of the labour market into inactivity (by 2 percentage points). Likewise, the transition rates out of unemployment into other labour market states are slightly lower for women except for transitions into inactivity which are higher by 6 percentage points. This confirms the theoretical predictions presented in Chapter 2, the main argument being that women leave the labour force more often to take care of family duties and this may be a flow that is reinforced during times of crisis.

Table 5.3
Yearly Markov transition matrix for all countries, by gender
 Before and during the crisis

ORIGIN	DESTINATION									
	Employment	Self-employment	Unemployment	Education	Inactivity	Employment	Self-employment	Unemployment	Education	Inactivity
	Pre-crisis					During crisis				
Female										
Employment	91.3	1.0	2.8	0.7	4.3	90.7	1.1	3.3	0.6	4.3
Self-employment	7.6	83.5	1.9	0.2	6.9	7.2	83.9	2.0	0.3	6.7
Unemployment	26.3	2.4	50.3	2.1	18.8	24.1	2.4	49.0	3.0	21.6
Education	15.2	0.7	3.8	77.2	3.2	13.4	0.6	4.9	77.7	3.3
Inactivity	5.5	1.2	2.4	0.5	90.4	5.0	1.3	2.7	0.6	90.3
Total	47.4	5.5	5.7	7.8	33.6	48.2	5.9	5.6	7.7	32.6
Male										
Employment	92.5	1.8	2.9	0.5	2.3	90.8	1.8	4.5	0.5	2.4
Self-employment	6.2	89.2	1.5	0.2	2.9	5.2	89.1	2.2	0.2	3.3
Unemployment	28.7	4.3	52.7	1.7	12.5	25.6	4.1	55.5	2.6	12.3
Education	15.4	0.9	3.9	76.9	2.9	13.5	1.1	6.0	77.0	2.4
Inactivity	4.1	1.8	2.1	0.8	91.3	3.6	1.7	2.6	0.9	91.1
Total	55.4	12.2	6.1	7.6	18.6	54.5	12.6	7.4	7.5	17.9

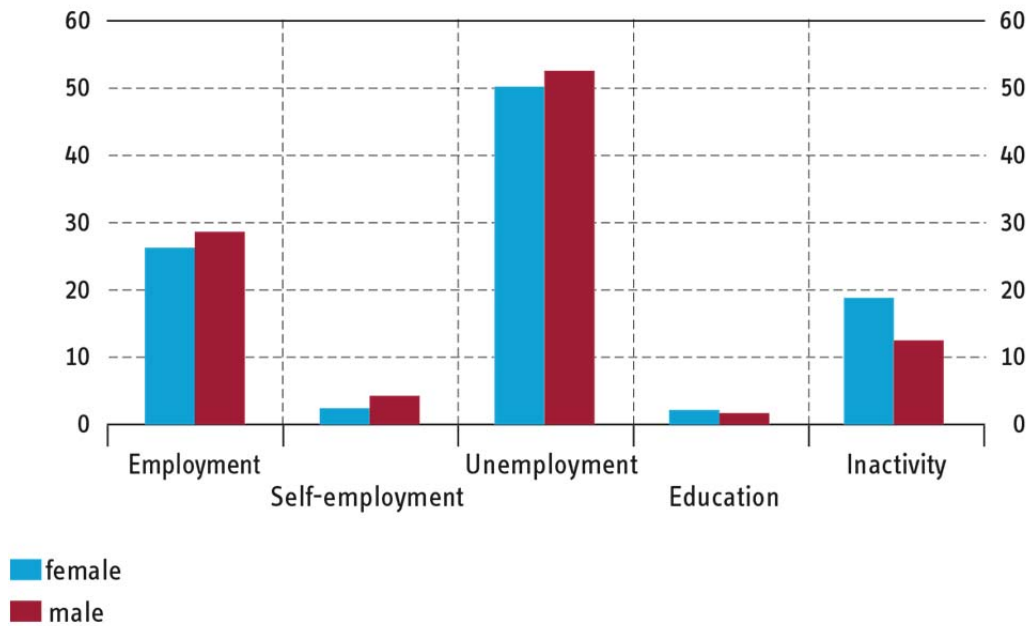
Source: EU-SILC and EU-LFS, own calculations.

Figure 5.12
Transitions from employment by gender



Source: EU-SILC and EU-LFS, own calculations.

Figure 5.13
Transitions from unemployment by gender



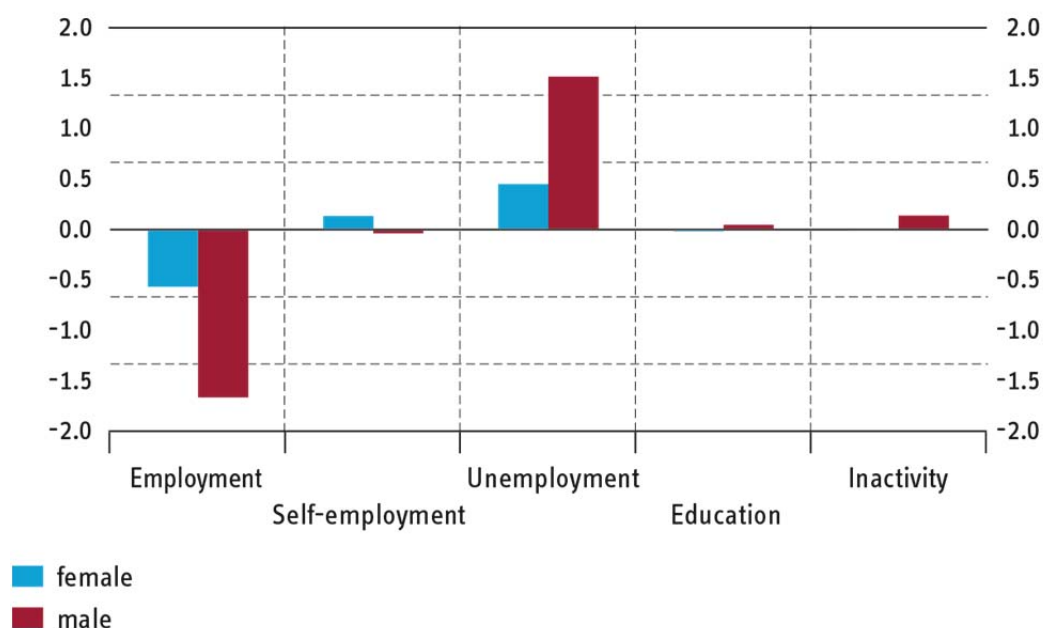
Source: EU-SILC and EU-LFS, own calculations.

There is no clear theoretical prediction for how an economic crisis affects the labour market transitions for men and women differently. Using our country sample, Figure 5.14 shows that the crisis affected the transitions of men to a much larger extent than that of women. For example, the probability of remaining in employment from one year to the next decreased by 1.7 percentage points for men and only by 0.6 percentage points for women when comparing the time period before the crisis with the crisis itself; the transitions from employment to unemployment mirror this trend, increasing from 2.8 per cent to 3.3 per cent for women and from 2.9 per cent to 4.5 per cent for men.

Furthermore, Figure 5.15 reveals that the unemployment-to-employment transition rates were reduced more for men (by 3.2 percentage points) than for women (by 2.2 percentage points). While the probability to remain unemployed from one year to the next increased by 2.8 percentage points for men, this probability decreased by 1.3 percentage points for women. This can be explained by the fact that during the crisis, unemployed women withdrew from the labour market and became inactive (2.7 percentage point change) even more than before the crisis; whereas men stayed in the labour market. Both men and women display slightly increasing unemployment-to-education transition rates during the crisis.

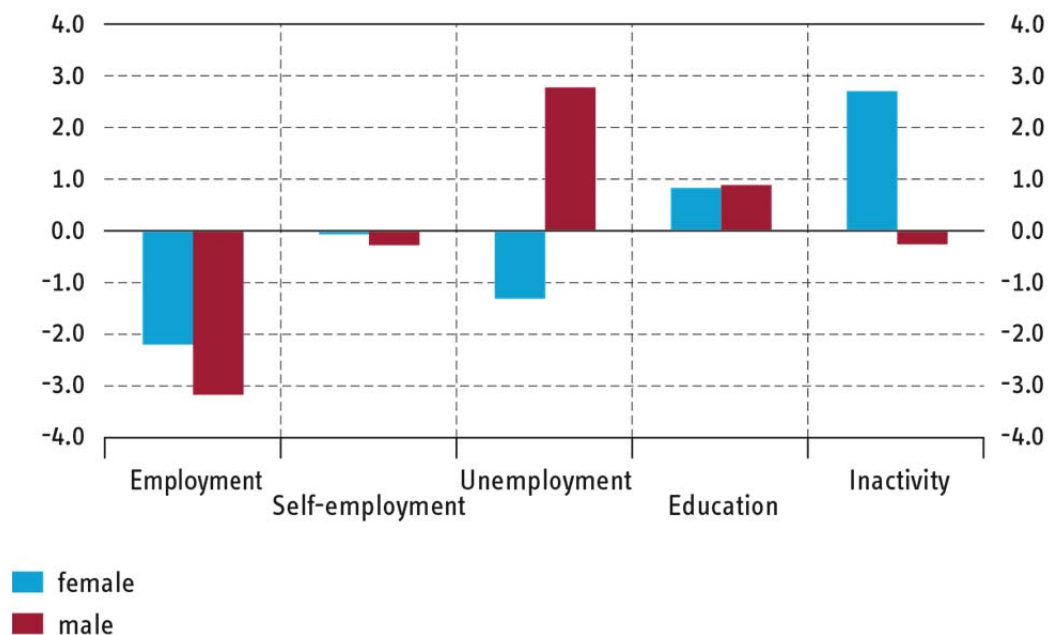
The theoretical and empirical predictions for the age profile of transition rates are clear, as we outlined in Chapter 2. Jobs are more stable for the middle-aged workforce compared to the youngest and oldest age groups. While young cohorts that leave employment are likely to get new jobs rather quickly, this is not the case for the older age groups, i.e. they will find it harder to be re-employed.

Figure 5.14
Differences in transition rates from employment by gender



Source: EU-SILC and EU-LFS, own calculations.

Figure 5.15
Differences in transition rates from unemployment by gender



Source: EU-SILC and EU-LFS, own calculations.

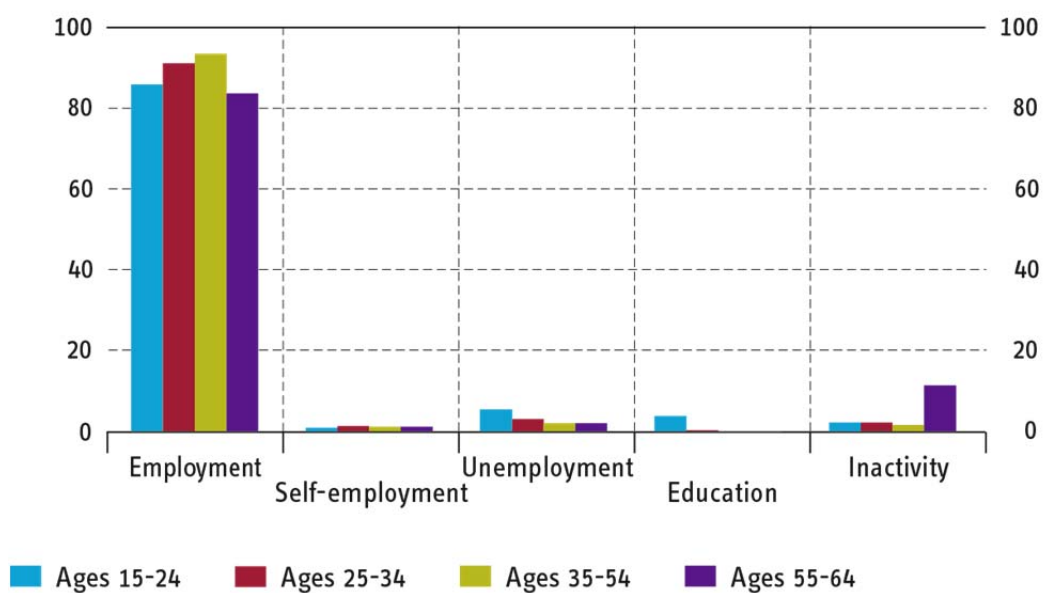
Table 5.4 and Figure 5.16 illustrate this clearly for the pre-crisis period. The probability of staying in employment from one year to the next amounts to about 87 per cent for the youngest age group (15-24) and 85 per cent for the oldest age group (55-65) and hence much lower than the that for the mid-range age groups which have rates of 92 per cent for those aged 25 to 34 and 94 per cent for those aged 35-54.

Table 5.4
Yearly Markov transition matrix for all countries, by age group
 Before and during the crisis

ORIGIN	DESTINATION									
	Employment	Self-employment	Unemployment	Education	Inactivity	During crisis				
						Employment	Self-employment	Unemployment	Education	Inactivity
Pre-crisis										
Ages 15-24										
Employment	86.7	1.1	5.6	4.1	2.4	83.6	1.2	8.3	4.5	2.3
Self-employment	18.4	70.1	5.7	2.6	3.3	14.3	72.8	6.2	3.1	3.7
Unemployment	34.0	2.3	47.6	6.7	9.3	29.6	2.0	50.1	8.9	9.4
Education	13.1	0.5	3.4	80.5	2.5	11.7	0.6	4.8	80.8	2.2
Inactivity	20.1	1.9	11.1	12.5	54.5	18.4	1.6	13.5	15.4	51.0
Total	37.8	2.0	7.9	46.5	5.7	35.1	2.1	9.8	47.8	5.2
Ages 25-34										
Employment	92.0	1.6	3.4	0.5	2.5	90.6	1.6	4.7	0.6	2.5
Self-employment	10.0	84.3	2.7	0.4	2.5	8.7	84.6	3.3	0.8	2.6
Unemployment	34.1	4.2	48.0	2.0	11.8	29.9	3.8	50.9	3.3	12.1
Education	32.4	2.9	6.9	52.9	5.0	26.5	2.8	10.5	54.4	5.8
Inactivity	15.9	2.4	6.7	1.7	73.3	16.4	3.0	8.9	2.0	69.7
Total	69.1	8.6	7.8	3.3	11.2	67.9	8.8	9.2	3.7	10.4
Ages 35-54										
Employment	94.4	1.4	2.3	0.1	1.8	93.5	1.4	3.1	0.1	1.8
Self-employment	6.1	90.1	1.5	0.1	2.2	5.5	90.2	1.9	0.1	2.3
Unemployment	26.5	3.8	54.3	0.6	14.8	24.5	4.2	54.7	0.7	16.0
Education	34.6	6.2	8.6	36.0	14.5	33.9	4.4	14.6	34.7	12.5
Inactivity	8.8	2.3	4.6	0.3	84.0	7.8	2.4	5.3	0.3	84.1
Total	66.3	12.6	6.1	0.3	14.7	66.4	13.1	6.4	0.3	13.8
Ages 55-64										
Employment	84.5	1.5	2.3	0.0	11.7	84.3	1.6	2.8	0.0	11.2
Self-employment	3.7	84.4	0.7	0.0	11.2	3.5	83.7	1.2	0.0	11.5
Unemployment	10.8	2.0	54.5	0.1	32.6	10.5	1.6	52.9	0.1	34.9
Education	14.3	6.4	3.9	7.4	67.9	14.5	4.8	7.1	10.1	63.5
Inactivity	1.5	0.9	0.4	0.0	97.1	1.4	0.9	0.5	0.0	97.1
Total	21.4	7.1	2.8	0.0	68.6	24.0	7.4	2.9	0.0	65.7

Source: EU-SILC and EU-LFS, own calculations.

Figure 5.16
Pre-crisis transition rates from employment by age group



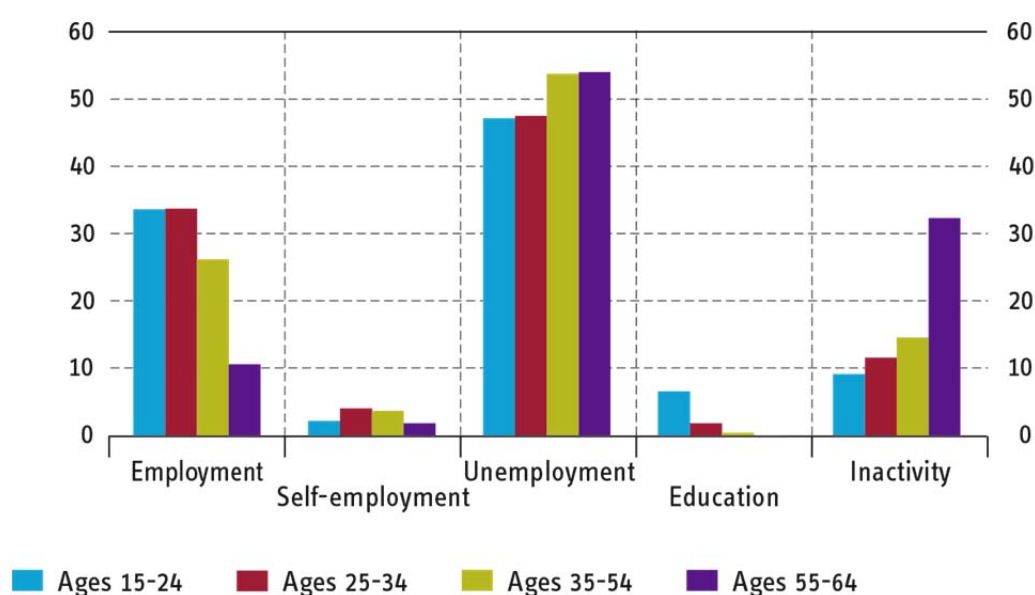
Source: EU-SILC and EU-LFS, own calculations.

The destination states underlying these employment stability patterns differ for the young and older cohorts. The youngest cohort leaves employment to unemployment or to education to a larger degree (about 6% and 4% respectively) than the other age groups. In contrast, those of the oldest cohort that do not stay in employment leave the labour market into inactivity (11%).

Figure 5.17 paints a similar picture. The probability of moving from unemployment into employment is highest for the two youngest cohorts (both 34%), and the probability to remain unemployed from one year to the next is lower. Furthermore, the youngest cohort of the unemployed takes up education more often (about 7%) than all other age groups. Furthermore, 33 per cent of the oldest unemployed leave the labour market and become inactive.

Figure 5.17

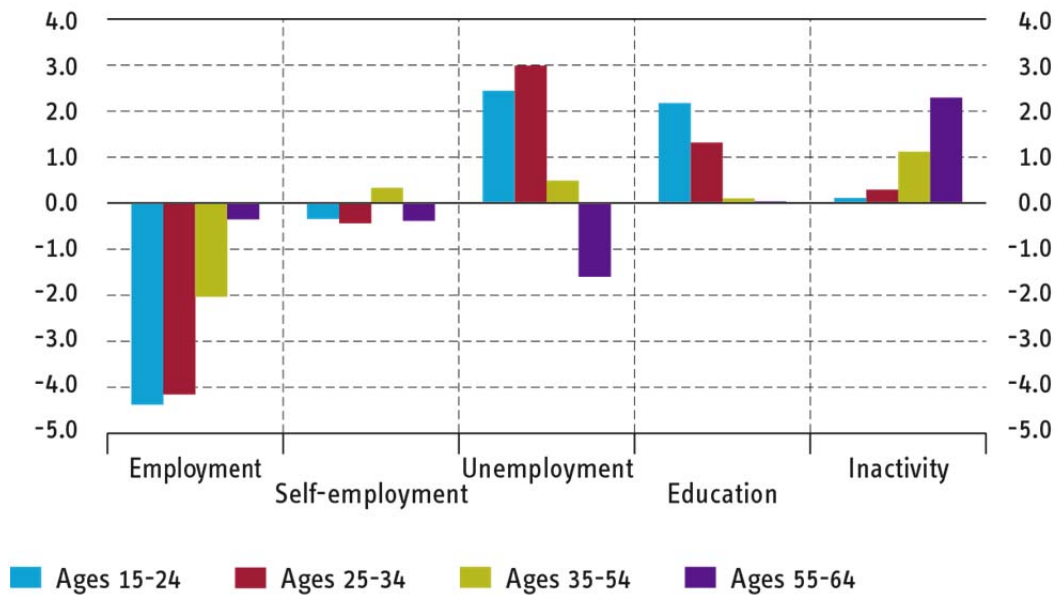
Pre-crisis transition rates from unemployment to by age group



Source: EU-SILC and EU-LFS, own calculations.

In Chapter 2, we hypothesized that the economic crisis should reinforce the differences between demographic groups. This we can generally confirm. As Table 5.4 and Figure 5.18 depict, the probability to stay employed declined most for the youngest age group (by 3.1 percentage points). This tendency was accompanied by a stark increase in flows from employment to unemployment (by 2.7 percentage points). In addition, the probability to change from unemployment to employment decreased by 4.4 and 4.2 percentage points for the two youngest cohorts. This means that unemployment spells became more extended during the crisis for these age groups. During the crisis, the probability of transferring out of unemployment into education increased by 2.2 and 1.3 percentage points for the two youngest age groups. Interestingly, for the oldest cohort the probability of staying employed remained largely constant; the same holds for other transitions out of employment and the unemployment-to-employment transitions. However, just as theory predicts, the crisis amplifies the flows into inactivity for the oldest age group by 2.3 percentage points. This increase in flows into inactivity could also explain why for the oldest cohort the probability of remaining unemployed decreases by 1.6 percentage points: the crisis pushes these people out of the labour market.

Figure 5.18
Change in transition rates from unemployment during crisis by age group



Source: EU-SILC and EU-LFS, own calculations. – Notes: A change in transition rate refers to the difference in transition rates comparing pre-crisis transition rates with during-the-crisis transition rates.

Table 5.5
Yearly Markov transition matrix for all countries, by skill group
 Before and during the crisis

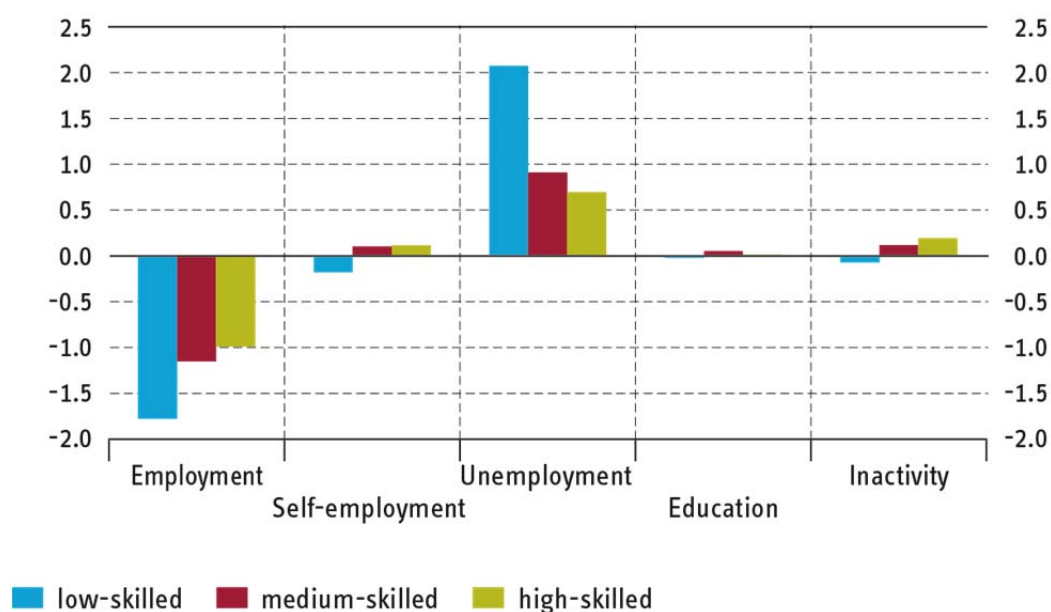
ORIGIN	DESTINATION									
	Employment	Self-employment	Unemployment	Education	Inactivity	Employment	Self-employment	Unemployment	Education	Inactivity
	Pre-crisis					During crisis				
Lowskill										
Employment	88.5	1.6	4.8	0.5	4.6	86.7	1.4	6.9	0.5	4.6
Self-employment	5.7	85.7	2.0	0.1	6.6	4.8	85.5	2.9	0.2	6.7
Unemployment	22.1	2.9	55.3	1.5	18.2	20.5	2.4	58.0	1.9	17.2
Education	9.9	0.3	3.2	84.0	2.6	9.0	0.3	4.7	83.5	2.5
Inactivity	3.3	1.4	2.2	0.4	92.5	3.0	1.3	2.8	0.5	92.4
Total	34.5	8.4	7.5	12.1	37.5	34.5	8.7	9.0	12.0	35.9
Mediumskill										
Employment	92.3	1.3	2.8	0.7	3.0	91.1	1.4	3.7	0.7	3.1
Self-employment	7.0	87.7	1.7	0.3	3.3	5.9	88.2	2.1	0.3	3.5
Unemployment	29.6	3.3	50.8	2.1	14.2	26.7	3.5	49.6	3.2	17.0
Education	17.5	1.0	4.1	74.3	3.1	14.7	1.1	5.4	75.7	3.0
Inactivity	5.9	1.3	2.3	0.8	89.7	5.2	1.4	2.7	0.9	89.9
Total	55.4	8.6	5.9	7.0	23.2	54.7	8.9	6.1	7.3	23.0
Highskill										
Employment	94.0	1.5	1.6	0.4	2.5	93.0	1.6	2.2	0.4	2.7
Self-employment	7.1	88.9	1.1	0.1	2.8	6.9	88.5	1.3	0.3	3.1
Unemployment	37.0	5.7	42.2	2.7	12.4	32.3	5.5	46.7	4.2	11.4
Education	35.1	2.8	6.1	51.4	4.6	31.0	2.0	9.9	53.1	4.0
Inactivity	8.0	1.8	2.1	0.8	87.3	7.4	2.3	2.4	0.8	87.2
Total	68.4	10.5	3.4	2.5	15.3	67.3	11.1	4.0	2.5	15.1

Source: EU-SILC and EU-LFS, own calculations.

We now turn to differences between skill groups. Table 5.5 presents the transition probabilities disaggregated by three different skill groups, before and during the crisis. Before the crisis, the transition probability out of employment into unemployment is largest for low-skilled workers and lowest for high-skilled workers. This discrepancy is amplified by the crisis, as Figure 5.19 reveals. The probability of becoming unemployed increases by about 2 percentage points for low-skilled workers compared to less than 1 percentage point for medium to high-skilled workers.

Figure 5.19

Change in transition rates from employment during crisis by skill group

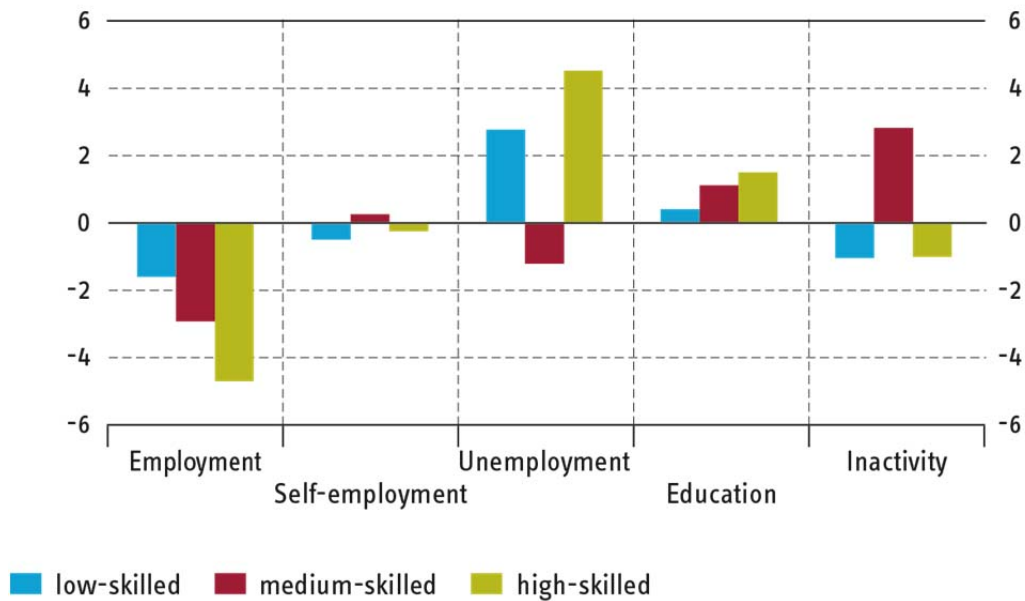


Source: EU-SILC and EU-LFS, own calculations. – Notes: A change in transition rate refers to the difference in transition rates comparing pre-crisis transition rates with during-the-crisis transition rates.

In Chapter 2 we hypothesized that high-skilled workers who become unemployed due to a decline in economic activity, would exit the unemployment pool more quickly, which would increase the transition probability from unemployment to employment for this skill group. Table 5.5 confirms that a higher skill level is associated with a higher transition rate from unemployment to employment in the time period before the crisis. However, the crisis seems to have dampened this relationship since compared to pre-crisis flows, high-skilled workers experienced a stronger decrease in unemployment-to-employment transitions than the other skill groups Figure 5.20.

Figure 5.20 also suggests that the increase in flows from unemployment to inactivity can be attributed to medium-skilled workers. Instead of remaining unemployed this group withdraws from the labour market to a larger extent than the other skill groups. One reason for this may be that this skill group has very specific skills for which it may be difficult to find a job, whereas the high-skilled workers are more flexible because they dispose of a wider spectrum of skills and the low-skilled workers are employed in jobs where very few skills are required and may therefore also have more job opportunities available to them. This could also be a sign of the particular vulnerability of this skill group, as has been observed for a number of industrialized countries such as the U.S. (cf., e.g., Goos et al. 2009, for evidence on Europe and Autor et al., 2006, 2008, for evidence on the US) – an issue which certainly deserves further investigation.

Figure 5.20
Change in transition rates during crisis from unemployment by skill group



Source: EU-SILC and EU-LFS, own calculations. – Notes: A change in transition rate refers to the difference in transition rates comparing pre-crisis transition rates with during-the-crisis transition rates.

5.2.3 Labour market transitions for selected countries

As became apparent in Section 5.1, the European labour markets were characterised by a relatively strong heterogeneity before the crisis, with respect to both the labour market participation of different demographic groups and the prevalence of forms of participation, such as contract types. Table 5.6 presents transition rates for Spain, Greece, Italy, Poland, Sweden, and France with a focus on permanent and temporary employment, for the time periods before and during the crisis.²⁴ In addition, Figure 5.21 shows transitions from temporary-to-permanent employment as well as the probability of remaining in temporary employment from one year to the next. For Sweden temporary employment appears to be a relatively important stepping stone into permanent employment since in pre-crisis years, the temporary-to-permanent-employment transition rate amounted to over 50 per cent. For Spain, Greece, Italy, and Poland, about a quarter of those in temporary employment manage to transfer into a permanent job during the pre-crisis years. France stands out by having a very low temporary-to-permanent-employment transition rate. Hence, the majority (52-56%) of temporary workers in most of these seven countries, with the exception of Sweden, remain temporarily employed year after year.

We now examine more closely the other transitions connected to permanent and temporary employment and will refer to Figures 5.22, 5.23, and 5.24. Spain records high transition rates from permanent employment to temporary employment (6%). The country sample average is at 3 per cent. Italy has a high pre-crisis transition rate from permanent employment to self-employment (2.3%), and Greece has a high transition rate from temporary employment to self-employment (4.9%), closely followed by Italy with (4.5%).

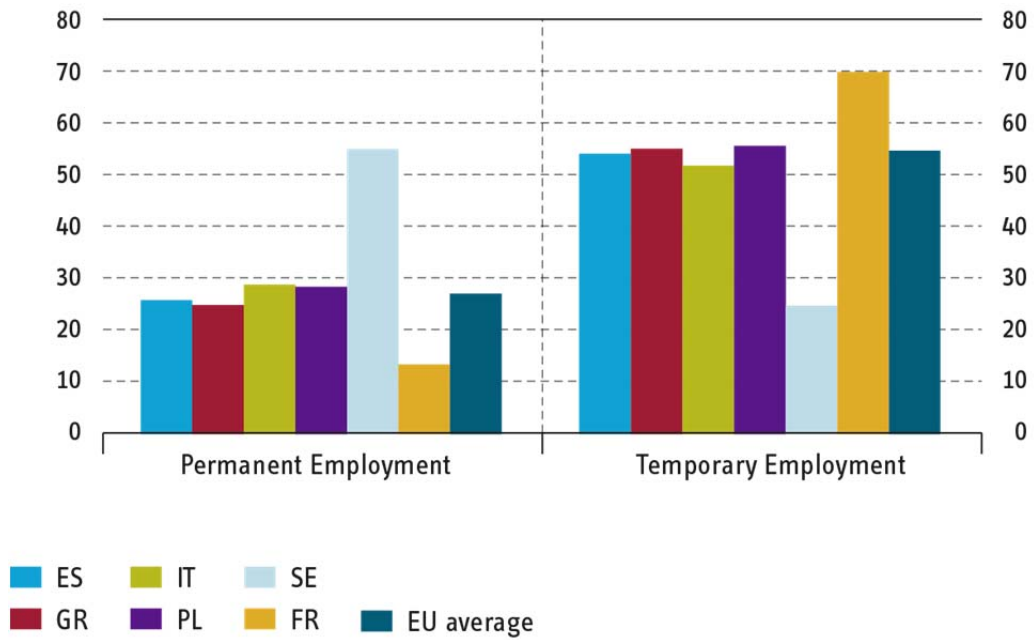
²⁴ See Tables Tab A.6.85 and Tab A.6.86 for the respective tables for all the countries within our sample.

Table 5.6
Yearly Markov transition matrix for selected countries, detailed employment states
 Before and during the crisis

ORIGIN	DESTINATION											
	Perma- Employ- ment	Tempo- rary- Employ- ment	Self- employ- ment	Un- employ- ment	Educa- tion	Inactivi- ty	Perma- Employ- ment	Tempo- rary- Employ- ment	Self- employ- ment	Un- employ- ment	Educa- tion	Inactivi- ty
	Pre-crisis						During the crisis					
ES												
Permanent Employment	86.3	5.9	2.0	3.0	0.2	2.6	88.7	2.3	1.1	5.7	0.2	2.0
Temporary employment	25.9	54.2	1.9	12.8	1.7	3.4	17.1	51.8	1.6	25.2	2.1	2.2
Self-employment	6.2	2.6	84.3	2.4	0.1	4.4	3.1	1.8	86.5	4.6	0.1	3.9
Unemployment	8.5	25.5	4.1	41.8	2.7	17.4	6.2	18.1	3.0	60.9	2.4	9.5
Education	3.8	12.4	1.1	5.2	73.2	4.3	1.8	8.8	0.7	8.8	78.1	2.0
Inactivity	2.6	4.1	1.9	5.9	1.7	83.9	1.6	1.8	1.4	7.4	2.3	85.4
Total	39.6	14.4	11.3	8.2	7.5	19.0	41.0	10.7	11.7	14.5	7.7	14.6
GR												
Permanent Employment	87.3	5.3	1.7	2.5	0.2	2.9	87.6	4.5	1.3	4.1	0.1	2.5
Temporary employment	25.0	55.2	4.9	9.0	1.5	4.3	18.9	60.8	3.3	12.7	0.9	3.3
Self-employment	2.9	1.7	89.3	1.2	0.1	4.8	1.3	1.2	91.5	2.1	0.1	3.8
Unemployment	12.2	16.4	5.9	50.6	2.9	11.9	8.0	11.8	6.0	60.1	2.7	11.5
Education	3.8	5.2	1.7	5.3	78.2	5.7	1.9	3.3	1.6	6.9	81.2	5.2
Inactivity	1.7	1.9	3.3	2.5	0.7	90.0	1.0	1.6	2.3	3.1	1.1	90.9
Total	29.8	9.0	22.0	6.3	8.0	24.9	29.7	8.8	21.4	8.2	8.3	23.6
IT												
Permanent Employment	89.2	3.1	2.3	1.6	0.3	3.6	89.8	2.5	1.9	1.9	0.3	3.6
Temporary employment	28.9	51.9	4.5	7.8	1.3	5.6	26.6	51.3	4.0	10.4	1.6	6.1
Self-employment	4.6	1.5	86.5	2.3	0.3	4.9	3.4	1.6	87.0	2.4	0.5	5.1
Unemployment	9.2	8.7	4.7	57.0	3.0	17.4	7.5	11.2	5.0	54.3	4.8	17.2
Education	2.3	4.0	1.6	7.6	81.2	3.3	2.5	3.1	1.6	9.3	79.6	3.8
Inactivity	2.9	1.4	2.3	3.4	0.5	89.5	2.9	1.4	2.4	4.8	0.7	87.7
Total	36.3	5.6	14.8	7.0	7.4	28.9	37.0	5.7	14.6	7.6	8.3	26.7
PL												
Permanent Employment	88.9	4.8	1.1	1.7	0.1	3.5	88.5	5.0	1.1	2.5	0.1	2.8
Temporary employment	28.5	55.7	1.8	8.6	1.0	4.4	25.8	57.9	2.1	8.9	0.7	4.6
Self-employment	2.3	2.7	88.1	2.0	0.3	4.7	2.1	1.8	91.3	1.2	0.1	3.5
Unemployment	6.0	21.6	3.8	51.8	1.7	15.1	6.1	20.0	5.2	47.7	0.4	20.7
Education	2.4	10.0	1.1	5.6	78.0	2.9	2.2	8.1	1.7	5.4	79.9	2.7
Inactivity	1.6	3.0	1.9	3.7	0.6	89.2	2.0	3.3	2.3	2.6	0.4	89.3
Total	32.1	12.4	11.2	9.0	9.3	26.0	35.2	11.7	13.2	6.0	8.3	25.5
SE												
Permanent Employment	89.7	3.1	1.3	1.7	1.1	3.1	90.8	2.9	1.0	1.7	1.2	2.4
Temporary employment	55.1	24.8	2.1	6.3	7.2	4.6	41.8	37.0	1.3	9.8	6.1	4.0
Self-employment	5.6	1.1	87.5	1.3	0.5	3.9	5.4	1.0	87.5	1.8	0.6	3.8
Unemployment	16.7	11.9	4.5	39.2	10.1	17.6	9.8	15.1	2.7	47.8	14.0	10.5
Education	8.7	6.1	0.8	8.7	71.8	3.9	6.3	7.2	0.9	11.5	71.7	2.5
Inactivity	4.2	2.0	1.8	3.4	2.7	85.9	2.8	1.7	1.5	3.1	2.6	88.3
Total	50.0	4.7	10.2	5.2	13.6	16.4	51.0	5.8	9.6	6.2	13.1	14.3
FR												
Permanent Employment	93.3	1.4	0.3	2.1	0.1	2.8	92.8	1.1	0.5	2.6	0.1	2.9
Temporary employment	13.5	70.0	0.6	11.7	1.9	2.3	12.4	69.5	0.9	13.4	1.6	2.2
Self-employment	2.3	0.9	91.9	1.3	0.0	3.7	2.2	1.4	92.2	1.1	0.0	3.1
Unemployment	11.4	16.7	2.7	60.2	1.4	7.5	10.2	16.8	2.1	60.8	1.8	8.2
Education	6.7	8.0	0.2	3.6	80.3	1.2	5.5	7.0	0.2	3.3	83.0	1.0
Inactivity	1.9	1.1	0.2	0.8	0.3	95.7	1.8	1.4	0.3	0.9	0.3	95.2
Total	47.1	8.8	6.1	7.0	8.0	23.0	48.7	8.4	5.3	7.0	8.6	22.0

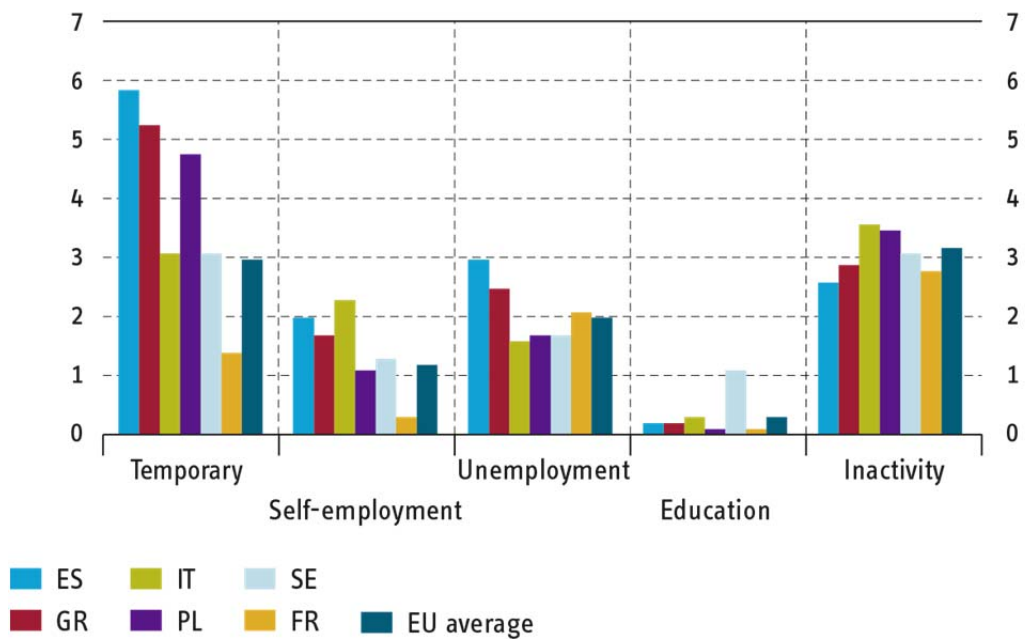
Source: EU-SILC, own calculations.

Figure 5.21
Pre-crisis transitions from temporary employment to...



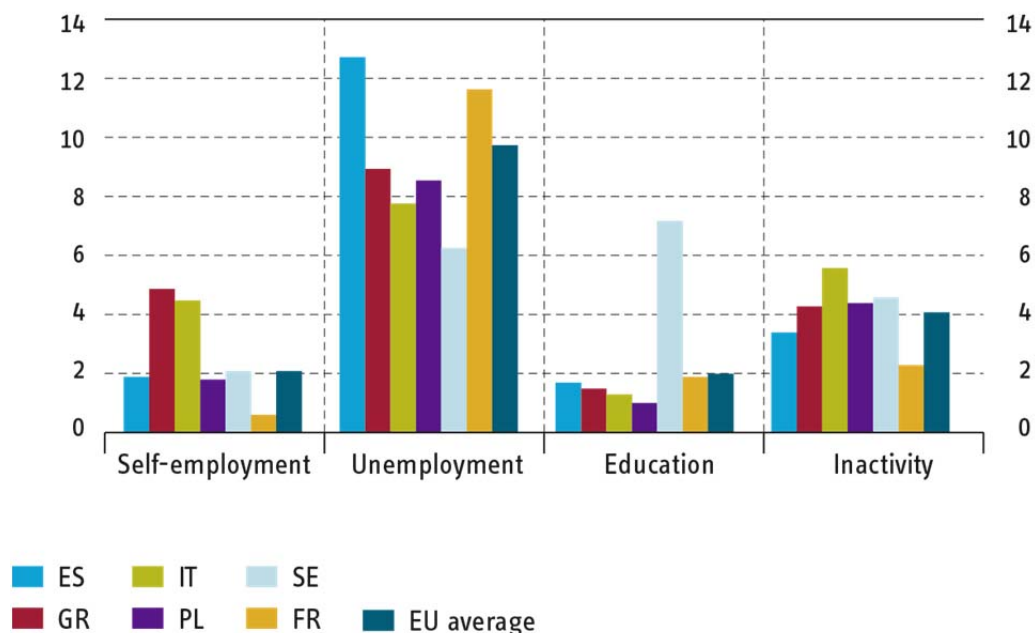
Source: EU-SILC, own calculations.

Figure 5.22
Pre-crisis transitions from permanent employment to...



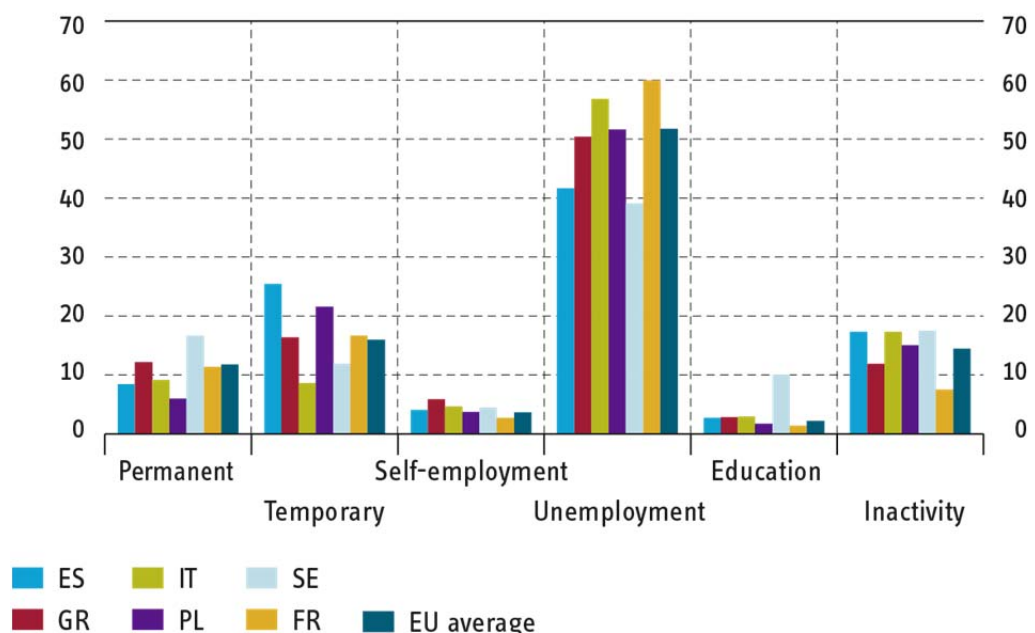
Source: EU-SILC, own calculations.

Figure 5.23
Pre-crisis transitions from temporary employment to...



Source: EU-SILC, own calculations.

Figure 5.24
Pre-crisis: Transitions from unemployment to...



Source: EU-SILC and EU-LFS, own calculations.

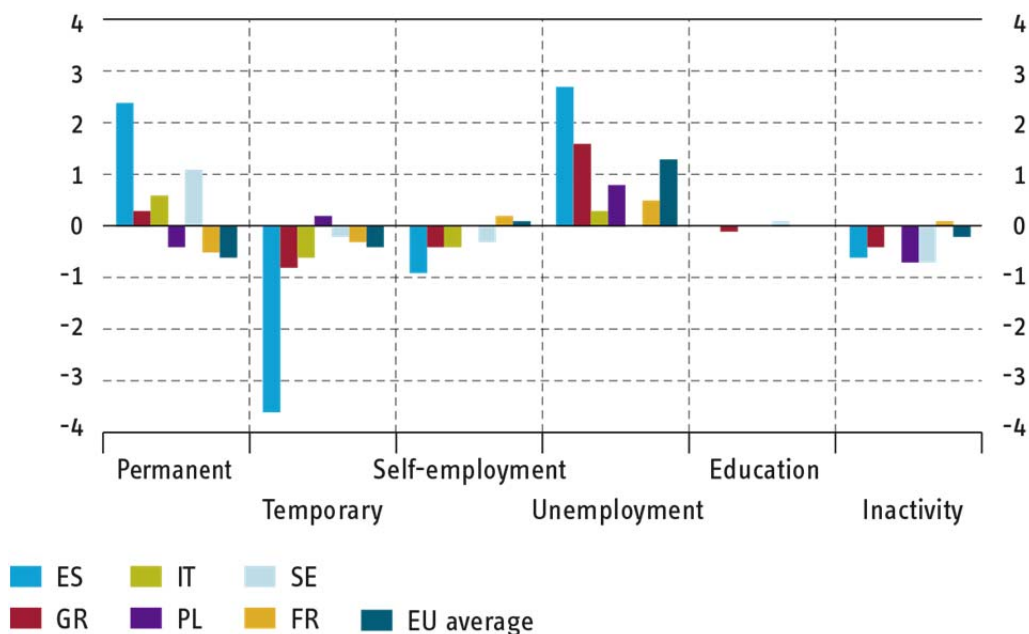
Pre-crisis transitions from permanent employment into unemployment are relatively high in Spain (3%) and Greece (2.5%) in relation to the other countries. However, pre-crisis flows from temporary employment to unemployment reach much higher levels. In Spain nearly 13 per cent of those in temporary employment in the previous year move into unemployment

in the next year. Only in France (with about 12%) does this transition rate reach similar levels, the country-sample average is at about 10 per cent. These flows to unemployment appear remarkably high for Spain. However, this does not come as a surprise in light of the upsurge in Spanish unemployment rates we saw in the introduction (see Figure 1.1); one other hand, flows out of unemployment into temporary employment are also high with about 26 per cent. This suggests that there is a lot of movement in and out of these two labour market states, which will be investigated more closely in Chapter 6.

We now turn to cross-country differences in the impact of the crisis on labour market transitions. Figure 5.25 reveals that there is lot of variation in how labour market transitions react during the crisis. Permanent jobs seem to be more stable in Spain and Sweden during the crisis, since the probability to remain permanently employed increases in these two countries. The contrary holds for temporary jobs, where the probability of remaining temporarily employed decreased by on average 0.4 percentage points. In Spain temporary jobs appear especially unstable; here the probability of remaining temporarily employed decreased by 3.6 percentage points. Taking into account that Spain has a high share of temporary workers (Figure 5.2) this decline affects many workers.

Figure 5.25

Changes in transitions from permanent employment to...



Source: EU-SILC, own calculations. – Notes: A change in transition rate refers to the difference in transition rates comparing pre-crisis transition rates with during-the-crisis transition rates.

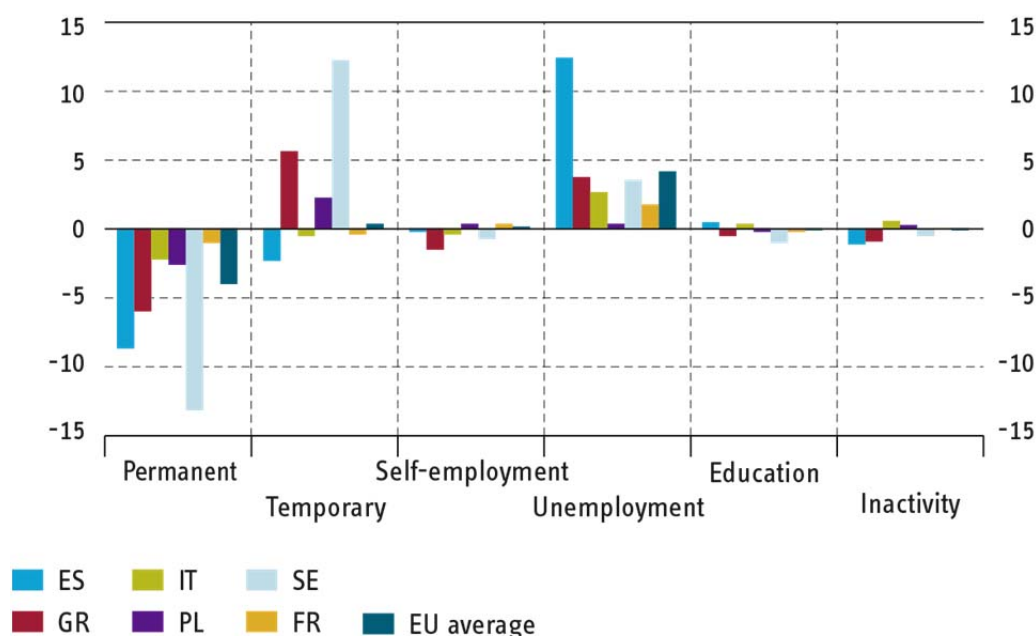
During the crisis, less people change from a permanent job into self-employment, a finding that holds especially for Spain where this transition rate declines by nearly 1 percentage point. Flows from permanent employment to unemployment increases in all countries, but particularly in Spain (by 2.7 percentage points) and Greece (by 1.6 percentage points). By contrast, there is no strong increase in transitions from a permanent job to inactivity in any of the countries considered.

Figure 5.26 displays the changes in transitions out of temporary employment, comparing pre-crisis levels to levels during the crisis. During the crisis, temporary employment clearly loses its

attraction as a stepping stone into permanent employment for Spain, Greece, and Sweden since in these countries the temporary-to-permanent transition rates decrease by 8.8, 6.1, and 13.3 percentage points, respectively. For the temporary workers in Spain this goes together with a stark increase in transitions into unemployment (by 12.4 percentage points), and a decline in the probability of remaining in a temporary position. In contrast, temporary workers in Greece and Sweden increasingly remain in temporary contracts, with the probability to remain in a temporary job from one year to the next increasing by 5.5 and 12.2 percentage points. The transition rates from temporary employment to unemployment in these two countries increase by about the same magnitude as the average of the entire country sample.

Figure 5.26

Changes in transitions from temporary employment to...

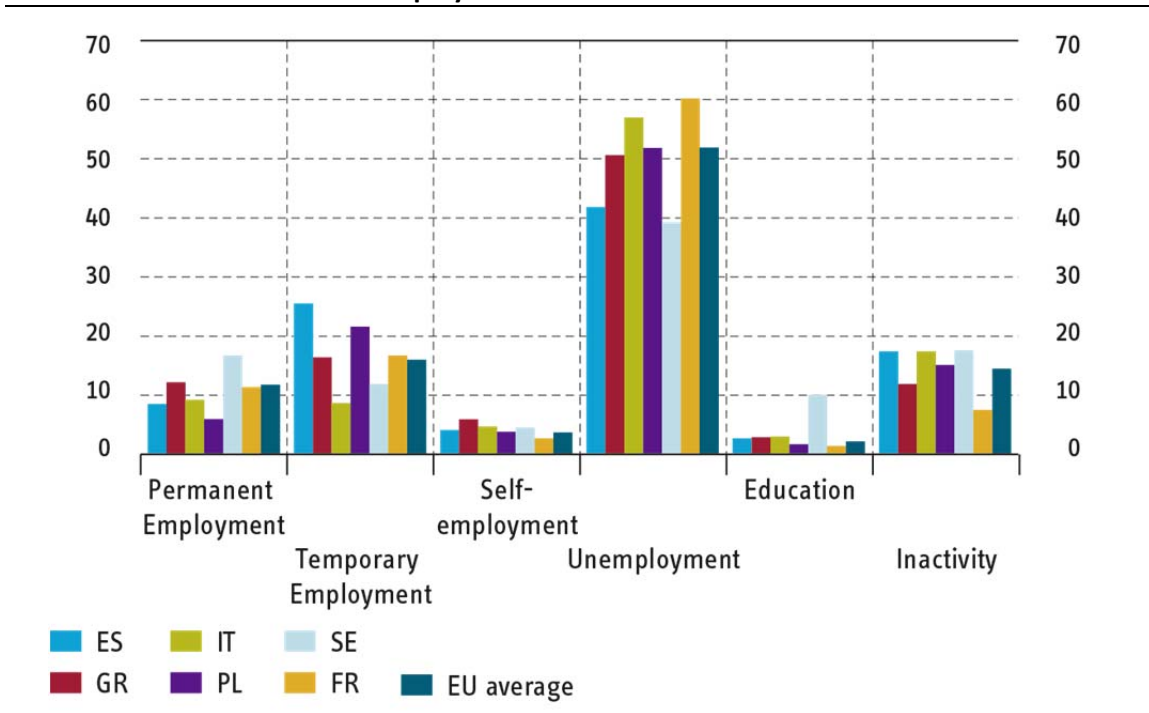


Source: EU-SILC, own calculations. – Notes: A change in transition rate refers to the difference in transition rates comparing pre-crisis transition rates with during-the-crisis transition rates.

We now examine the pre-crisis transitions out of unemployment more closely for these selected countries. In all countries, the majority of unemployed individuals remains in unemployment from one year to the next; however, there is some variation as Figure 5.27 reveals. France, with 60 per cent, records the highest probability of remaining unemployed. It is followed by Italy with 57 per cent. In Sweden the probability of remaining in unemployment is the lowest with 39 per cent; it is closely followed by Spain with 42 per cent.

A large proportion of those unemployed change into temporary employment in the next year. Our entire country sample average for this transition probability was at 16 per cent before the crisis; but this rate varied widely across countries. For Spain, transition rate from unemploy-

Figure 5.27
Pre-crisis transitions out of unemployment to...



Source: EU-SILC, own calculations.

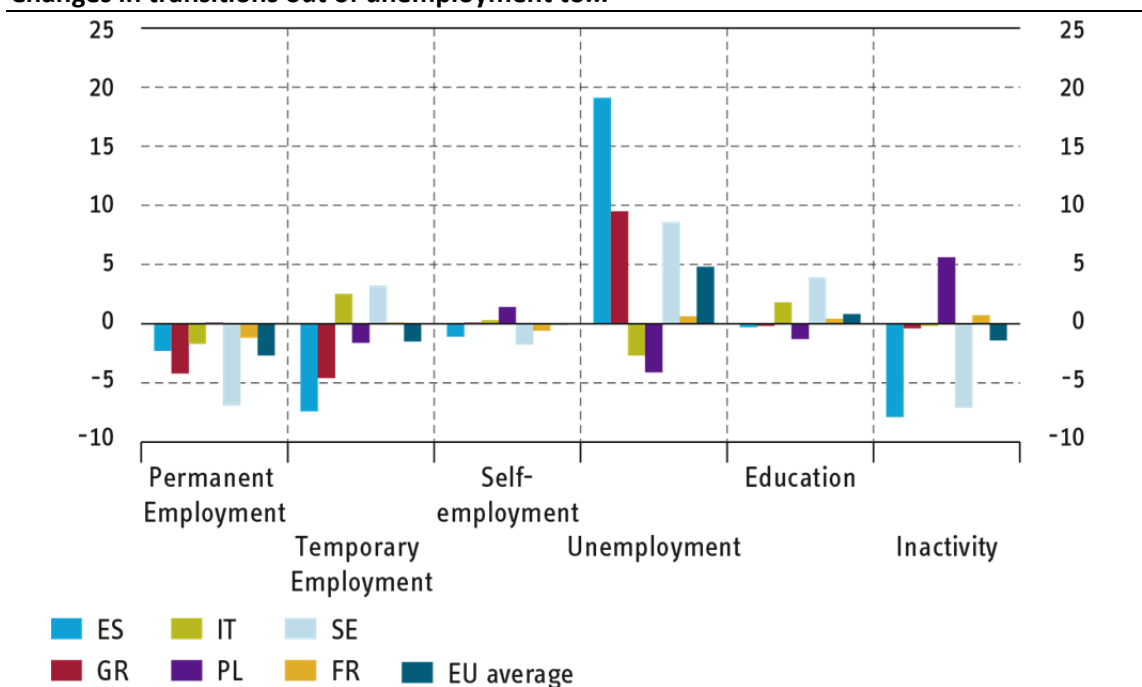
ment to temporary employment was much higher, amounting to nearly 26 per cent. This transition rate was also high in Poland (22%), but particularly low in Italy (8%) and Sweden (12%). Hence, in the former countries temporary contracts may be ways to reintegrate unemployed persons into the labour market, while this may not be the case for the latter countries that have below-average transition rates.

Furthermore, the average for the transition rate from unemployment to inactivity was at about 15 per cent; yet there was also some difference across countries: Sweden (17.6%), Italy and Spain (both 17.4%) recorded rather high probabilities for unemployment-to-inactivity transitions; while France (7.5%) and Greece (12%) displayed lower transition probabilities.

According to the country sample average, about 12 per cent of those unemployed in a specific year find a permanent job in the next year. Sweden stands out positively in this respect, since there chance of transferring into permanent employment from unemployment ranged at nearly 17 per cent before the crisis; while Poland recorded a very low transition probability of 6 per cent.

Given these pre-crisis flows out of unemployment, we are now interested in how the crisis affected these flows across countries; Figure 5.28 illustrates this. The crisis primarily affects the probability of remaining unemployed, which increases by about 5 percentage points for the entire country sample. This average, however, masks a very heterogeneous impact across countries. In Spain, the probability of remaining in unemployment from one year to the next increases by 19 percentage points. Hence the crisis has a sizable impact on prolonging unemployment spells in Spain, which holds true even though Spain had a rather low probability of remaining in unemployment prior to the crisis. For both Greece (increase by 9.5 percentage

Figure 5.28

Changes in transitions out of unemployment to...

Source: EU-SILC, own calculations. – Notes: A change in transition rate refers to the difference in transition rates comparing pre-crisis transition rates with during-the-crisis transition rates.

points) and Sweden (increase by 8.6 percentage points) the probability of remaining in unemployment also increases more than the country sample average. For Italy and Poland, we see some declines in the chances of staying in unemployment; but both were countries with relatively high probabilities prior to the crisis.

We also observe substantial country variation in how the crisis impacts flows from unemployment into inactivity. While the country sample average lies at -1.4 percentage points, meaning that the probability of changing from unemployment into inactivity decreases, it increases for Poland by 5.6 percentage points and decreases for Spain by about 8 percentage points and for Sweden by about 7 percentage points. Therefore, Poland seems to be affected very differently compared to the other countries in this respect. One possible explanation is that in Spain and Sweden, at least during the years 2008-2010 of the crisis, which we investigate, workers did not withdraw from the labour market because they expected to find a job again soon.

Finally, for most countries the transition probabilities from unemployment to temporary employment decreases. For instance, for Spain this transition rate decreases by 7.4 per cent. Knowing that Spain had a high unemployment-to-temporary employment transition rate, this strong reaction to the crisis is not very surprising. However, in Poland this transition rate increases which again hints at the fact that the crisis affected Poland very differently compared to most countries in our sample – which is not all that surprising given that unemployment in Poland actually followed a long-run decline since the mid-2000s.

All in all, the changes in transitions out of unemployment during the crisis are in line with our hypotheses for most countries. However, there is a considerable variation as to how much these transition rates differ from their pre-crisis values.

5.3 Comparison of yearly and monthly Markov transition matrices

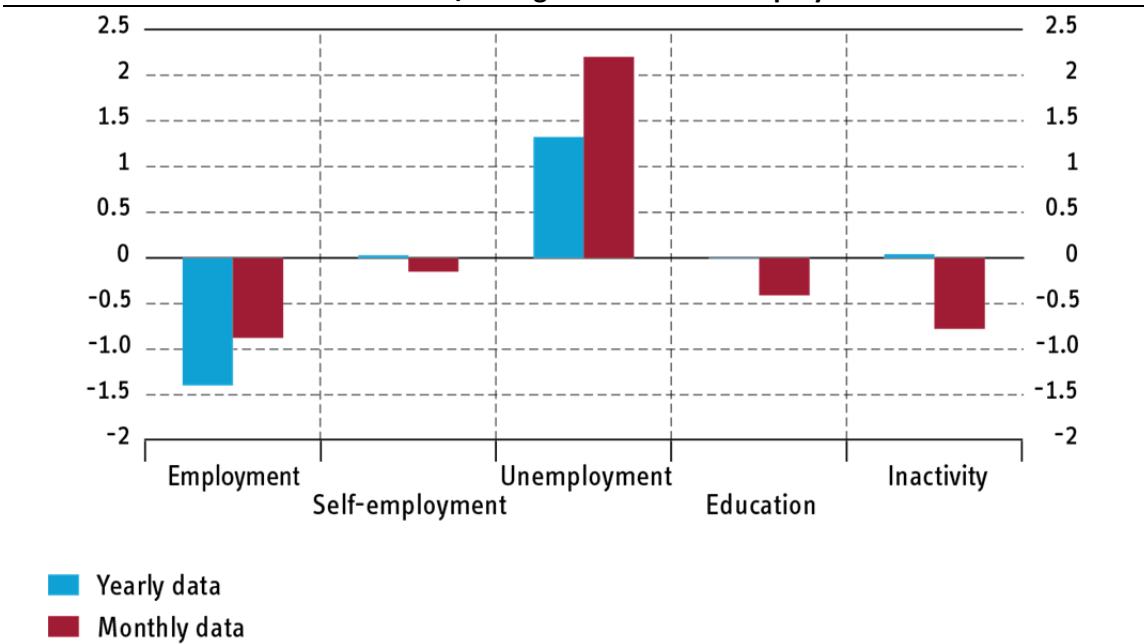
Up until now we have analyzed transitions based on yearly data. However, comparing yearly and monthly data can add some more insights to the analysis. First, within our econometric analysis (Chapter 6) both – yearly and monthly data – will be used. It is therefore of importance to have a closer look on how descriptive statistics differ between both sources of data. Second, one would expect that within more disaggregated data, labour market transitions can be captured more precisely than in data which is more aggregate over time (Shimer 2005). In detail, yearly data solely allow to investigate whether a person interviewed at certain point in time has changed his or her labour market status compared to the labour market status at the time of the preceding interview. Therefore, labour market changes which have taken place within the year may go unnoticed. In contrast, monthly data allow observing a person's labour market status at a higher frequency, and may thus reveal potential changes also within the year.

To take an example, imagine a person who is employed at the time of the first interview, but becomes unemployed in the following month. If she finds a job again, which she keeps until the next interview, an analysis at a yearly frequency will observe her being employed at the time of both interviews, i.e. no labour market transition will be recorded. By contrast, with monthly data, one observes a transition from employment to unemployment, and another transition from unemployment back to employment. The difference between no recorded transition at a yearly frequency (i.e. employment in both years) and the two transitions recorded at a monthly frequency, is an example of the time aggregation bias.

To compare labour market changes at different levels of time aggregation, we identify the flows analysed above and compute Markov transition matrices for the time period before and during the crisis at a yearly and at a monthly frequency. Further, we calculate the differences between the two types of transition probabilities computed at different frequencies, e.g. we subtract the probability of staying in employment during the economic crisis from the probability of staying in employment before the economic crisis both at a yearly and at a monthly frequency. Figure 5.29 shows the differences in transition rates from employment to all other states and Figure 5.30 displays the flows from unemployment to all other labour market states.

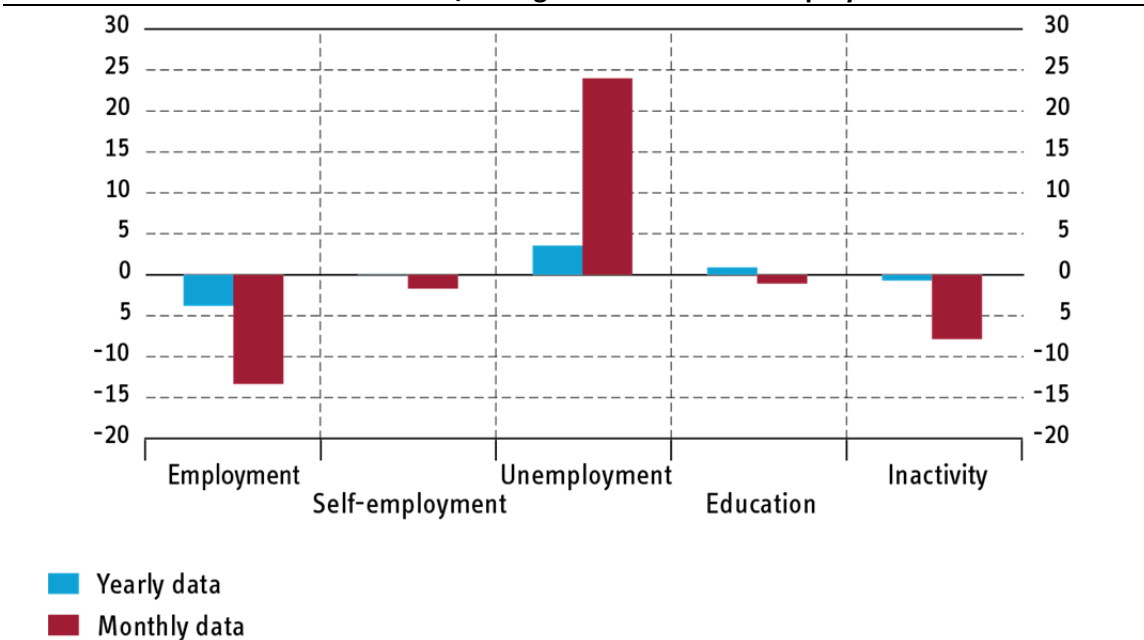
In both graphs, the blue bars display the differences in transition probabilities computed on the basis of the yearly data and the red bars the differences using the monthly data. For most of the transitions, the differences generated with the yearly data are much lower than the ones using the monthly data. This is especially the case for transitions from employment to unemployment and vice versa as well as for staying (un-) employed. These results are intuitive and reveal that transitions become better observable if more disaggregated data are used. Furthermore, even though unemployment became more persistent during the crisis, both monthly and yearly transition rates increased considerably. Therefore, we will include the monthly data for a part of our empirical analysis.

Figure 5.29
Differences in transition rates before/during the crisis from employment to ...



Source: EU-SILC, own calculations. – Notes: Differences in transition rates refer to the difference in transition rates comparing pre-crisis transition rates with during-the-crisis transition rates. Bars display either differences computed on the basis of the yearly or monthly data.

Figure 5.30
Differences in transition rates before/during the crisis from unemployment to ...



Source: EU-SILC, own calculations. – Notes: Differences in transition rates refer to the difference in transition rates comparing pre-crisis transition rates with during-the-crisis transition rates. Bars display either differences computed on the basis of the yearly or monthly data.

6. Econometric Analysis

The previous section presented descriptive results on transition probabilities between the different labour market states employment – sometimes distinguishing between permanent and temporary employment – self-employment, education, unemployment, and inactivity. We now turn to an econometric investigation of these transitions. On the one hand, this will allow us to more explicitly take into account observable person and household characteristics. On the other, we will also be able to consider unobservable factors that are related to labour market transitions across countries (using country fixed effects), and over time (using year dummies). We first estimate a baseline specification of a multinomial logit model. This baseline specification is estimated separately for the four different states of origin employment, self-employment, unemployment, and education. The destination states are employment, or permanent and temporary employment, self-employment, education, unemployment and inactivity.

6.1 Transitions from employment

6.1.1 Regression results for transitions from employment

Our first regression table (Table A.6.1 in the appendix) presents the results for the multinomial logit regression (see Box 3.4) for transitions from employment (comprising both full-time and part-time employment) for the time period 2005-2010. In the table, the different columns indicate the correlation between the different covariates and the probability to remain employed (column E), to make a transition to self-employment (column S), to unemployment (U), to education (Ed) or to inactivity (I).

All individual covariates for which we control have intuitive signs and are significant in most cases.²⁵ For instance, the coefficient on male is 0.0109 (Table A.6.1 column E). This suggests that men are 1.1 percentage point more likely to remain employed than women. By the same token, men are 1.5 percentage points less likely to withdraw from the labour market, i.e. become inactive, from one year to the next (Table A.6.1 column I). The latter result is confirmed by the regression results based on the EU-LFS data for Germany and Romania (Table A.6.2 EU-LFS E-Flows column I).²⁶

The chances of remaining in employment are highest for those aged 35-54 and lowest for those aged 55-65 (Table A.6.1 column E, and Table A.6.2 column E). The probability of making a transition from employment to unemployment is higher for the youngest cohort than for those aged 35-54 (Table A.6.1 column U). Married individuals as well as those who live with an employed partner are more likely to remain in employment (Table A.6.1 column E, and Table A.6.2 column E) and less likely to make a transition into unemployment or inactivity (Table A.6.1 and A.6.2 columns U and I). This can be interpreted as “positive assortative mating”, meaning that people with similar traits, also in terms of labour market characteristics, will pair up to maximize the household’s production (Brien, Sheran 2003: 45).

The regression confirms that high-skilled workers find it easier to remain in employment. The number of dependent household members, both the number of children and elderly persons in the household, is negatively correlated with the probability of staying in employment. Fur-

²⁵ Note that we focus on the interpretation of significant coefficients. As explained in Box 3.4, the R-squared measure reported is of the usual magnitude and should not be overinterpreted.

²⁶ In contrast to the estimations based on the EU-SILC data, the estimation results using the EU-LFS data yield a coefficient on the male dummy that has a negative sign, but is very small. If anything this small coefficient indicates that men and women have similar probabilities of remaining in employment.

thermore, high-skilled persons have lower probabilities of becoming unemployed or inactive following an employment spell than their medium –skilled and low-skilled counterparts. Part-time employees display lower job stability than full-time employed employees and are also more likely to become unemployed or inactive than full-time employees.

Building upon this baseline specification, we now include a crisis indicator variable that takes on the value of one if the country of the workplace of the individual was in crisis²⁷ at the time of the interview. By itself, this indicator variable captures the change in the respective transition probabilities comparing the pre-crisis period (2005-2007) with the time period of the crisis (2008-2010). Table A.6.3 shows that during the crisis, employment stability decreased significantly and sizably – by 1.1 percentage points – and that flows from employment to unemployment increased significantly by 1.3 percentage points using the EU-SILC country sample. For Germany and Romania, the signs in Table A.6.4 point in the same direction. However, the coefficients are not statistically significant. Overall, we see that the general tendencies we already observed in the descriptive analysis of Section 5.2 and our hypotheses with respect to employment-to-unemployment flows from Chapter 2 are confirmed.

In the descriptive analysis, we showed that the crisis lead to an increase in flows out of the labour market. Therefore, one of the aims of the following analyses is to identify the characteristics of the persons who were pushed out of the labour market, for example in terms of skill type, contract type and gender. In order to examine this, we interact the crisis indicator variable with indicator variables for different demographic groups. The coefficient on the interaction term for a specific demographic group can be interpreted as the impact of the crisis on this demographic group, compared to the reference group.²⁸ For example, the employment-to-unemployment transition rate increases by 0.5 percentage points more for those aged 15-24 than the transition rate of the reference group of those aged 35 to 54 (Table A.6.5). This finding is statistically significant and holds true for EU-LFS, albeit at a lower level (Table A.6.6). Therefore, young workers seem to be hit particularly hard by the recession. For the oldest age group (55-65), none of the interactions are significant using the EU-SILC data set, i.e. they are not different from the reference group in a statistical sense. For Germany and Romania, the picture for the oldest workers and the crisis impact is often statistically significant but the effects are rather small (Table A.6.6). For Germany and Romania the sign of the coefficients indicates that the probability of remaining in employment increases for the youngest age-groups and the employment-to-unemployment flows decrease; however, the coefficients are very small and therefore negligible. The probability of staying in employment during the crisis is slightly higher for the oldest workers compared to those aged 35-54, *ceteris paribus*. Yet, during the crisis, flows from employment to unemployment increase for the old cohort by 0.16 percentage points more than for those between ages 35 and 54 and flows to inactivity decrease by 0.4 percentage points more than for the reference group. However, the impact of the crisis on different age groups does not reach quantitatively relevant levels in Germany and Romania. Therefore these findings support our hypothesis that the business cycle amplifies these flows mostly for the youngest age groups and to a smaller extent for the near-retirement age-group.

Employment stability of men was affected more by the crisis than that of women. As Table A.6.7 shows for the EU-SILC data, men were nearly 1 percentage point less likely to stay in employment during the crisis than women. In a similar vein, employment-to-unemployment

²⁷ See Section 3.2.1 for a precise definition of the crisis indicator.

²⁸ However, one should be careful in giving these results a strictly causal interpretation.

flows increased for men by nearly 1 percentage point more than for women during the crisis. The directions of how the crisis affected these transitions are also true for Germany and Romania using the EU-LFS data, though the point estimates are smaller (Table A.6.8). For our EU-SILC data set, the estimation results on flows from employment to inactivity do not provide any statistically significant evidence, while the EU-LFS data do produce a statistically significant effect that indicates higher flows into inactivity for women.

All in all, our regression results confirm the descriptive evidence presented in Section 5.2 on gender-related effects of the crisis. From the descriptive analysis, it was not clear, however, whether the differences between men and women were mainly due to factors correlating with gender, for example the fact that men tend to work in specific occupations which were particularly strongly affected by the crisis. The multivariate analysis above shows that even when controlling for occupations and other factors, large differences remain.

Turning to skill groups, the probability of remaining in employment is reduced by 1 percentage point during the crisis for medium-skilled workers, the reference group for skills. Our regression results for the EU-SILC sample do not suggest that this probability differs statistically significantly by skill groups, i.e. the reduction of employment stability is equally pronounced (Table A.6.9). Also, for Romania and Germany, we do not see that the effect of the crisis varies statistically significantly by skill group (Table A.6.10). A similar picture evolves for flows out of employment into unemployment: the crisis increases this flow but we do not observe any statistically significant differences by skill level, for both our EU-SILC and our EU-LFS sample. In a similar vein, flows from employment to inactivity are not impacted by the crisis in a significant manner and we also do not observe any statistically significant heterogeneities between skill groups for most of the countries we study. For Germany and Romania, we detect a small difference in flows from employment to unemployment during the crisis for high-skilled workers compared to medium-skilled workers.

Summing up the regression findings on heterogeneous effects by different socio-demographic groups, we find that men are more negatively affected than women by the crisis with respect to job stability and employment-to-unemployment flows. Employment-to-unemployment transitions increase significantly more for young workers. This is all the more worrying as these negative effects on young workers focus on those workers who were employed, i.e. young workers who did not manage to find a job at labour market entry because of the recession are not included in the analysis. Taking into account labour market entrants may therefore yield an even worse picture for young workers. Finally, we find no significant impact of the crisis differentiated by skill levels.

Our next regression for the flows out of employment additionally introduces log GDP growth. We find that the probability of remaining in employment is positively associated with GDP growth, both in estimations based on EU-SILC (Table A.6.11) and on EU-LFS (Table A.6.12). Employment-to-unemployment flows are negatively associated with GDP growth. This correlation, however, is only significant for the EU-LFS sample (i.e. Germany and Romania). Furthermore, we see that flows from employment into education follow a counter cyclical path, they increase when GDP growth declines, which is significant in the estimation using the EU-SILC dataset.

In the final set of regressions, we also include GDP growth into our estimation and run different regressions for before and during the economic crisis. What becomes clear from Tables A.6.13 and A.6.15 is that GDP growth influences the labour market more directly in times of crisis, since our regressions pick up statistically significant effects only during the crisis – before the crisis, the correlations between GDP growth and transitions are insignificant. During

the crisis, a one percent decrease in GDP growth increases the probability of employment-to-unemployment transitions by 0.5 percentage points, i.e. relatively strongly. For Germany and Romania, using EU-LFS data, the influence of GDP growth points in the same direction as for the country sample using EU-SILC data and these effects reach higher significance levels (Tables A.6.14 and A.6.16). However, the size of the coefficients on log GDP are smaller for these two countries during the crisis which hints at a less pronounced influence of GDP growth on the labour market transitions during the crisis. The coefficient on GDP growth even becomes positive in the employment-to-education transition. Both is contrary to our findings in EU-SILC which may, however, also be driven by the fact that the sample of Romania and Germany includes two very different countries and hence the coefficients we now observe are average effects that could mask different underlying processes in Germany and Romania.

Controlling for GDP growth and estimating the regressions separately for the two time periods considered reinforces our finding that the crisis impacted the employment-to-unemployment transitions for young workers the most, since the coefficient on those aged between 25 and 34 is twice as high as in the specification before the crisis. Table A.6.15 also suggests that flows from employment into education increase during the crisis, although the coefficient points only to a small effect.

6.1.2 Regression results for transitions from permanent employment

Turning to transitions from permanent employment, Table A.6.17 provides the baseline regression results. Each column represents a different destination state ordered in the following way: flows to permanent employment, to temporary employment, to self-employment, to unemployment, to education, and to inactivity. All covariates we include in this regression have an intuitive sign and many reach conventional statistical significance levels. For example, men are 1 percentage point more likely to remain in permanent employment and 1.2 percentage points less likely to make a transition into inactivity than women. The young workers and workers near the retirement age are less likely than mid-aged (35-54) workers to stay in permanent employment and more likely to become unemployed or inactive.

Low-skilled workers have an about 2 percentage points lower probability of staying in permanent employment than medium-skilled workers. Similarly, low-skilled workers have a 0.7 percentage points higher chance of becoming unemployed and a 0.6 percentage points higher chance of becoming inactive than medium-skilled workers. In contrast, high-skilled workers are more likely to remain in permanent employment by 0.6 percentage points, and have only slightly lower risks of becoming unemployed or inactive from one year to the next out of permanent employment. These numbers point out that the labour market of low-skilled workers is much more volatile than is the case for medium-skilled and high-skilled workers.

Furthermore, these transition probabilities confirm what we already saw in previous regression results, that those with employed partners are more likely to remain in permanent employment and are less likely to become unemployed than individuals with inactive or unemployed partners. This hints at positive assortative mating.

In a next step, we analyse how the crisis impacted the transition rates from permanent employment; results for this are presented in Table A.6.18. Most prominently, these regression results detect that permanent workers are 1 percentage point more likely to become unemployed in times of crisis than before. During the crisis, we also observe a small decline in the probability of transferring from permanent employment to temporary employment by 0.6 percentage points. In addition, the sign of the coefficient suggest that during the crisis it is less likely to become inactive, although with 0.2 percentage points this is a small effect. This

suggests – not surprisingly – that during the recession, outflows from employment which take place mainly for economic reasons (transitions to unemployment) become relatively more important than transitions where economic reasons are generally not predominant (transitions to inactivity).

While we find gender differences in how the crisis affected labour market transitions, these effects are quantitatively not very large as Table A.6.19 reveals. For instance, men are 0.5 percentage points less likely to remain in permanent employment than women during the crisis for which the crisis has no significant impact. Furthermore, the crisis increases flows from permanent employment to unemployment especially for men since their probability of becoming unemployed out of permanent employment increases by 0.6 percentage points more than for women.

Moreover, we observe only few statistically different impacts of the crisis by age as Table A.6.20 shows. On the one hand, the crisis decreases the probability of remaining in permanent employment for the youngest age group by 1 percentage point, signalling a substantial reduction in permanent job stability. On the other hand, the oldest age group is marginally less likely (by 0.3 percentage points) to become unemployed during the crisis out of permanent employment than the mid-aged group.

The regression results in Table A.6.21 suggest that there are nuances in how the crisis impacted workers belonging to different skill groups. The crisis does not negatively affect the probability of remaining in permanent employment for the low skilled, but does so for the medium-skilled workers.²⁹ We also see heterogeneity of the impact of the crisis on flows out of permanent employment into inactivity: while the coefficient on the crisis indicator hints at flows into inactivity decreasing slightly for medium-skilled workers in permanent jobs (by 0.3 percentage points), it does not suggest decreased flows for low-skilled or high-skilled workers. While statistically significant, these effects appear very small in size.

Our next specification spans over the entire period 2005-2010 but additionally includes log GDP growth (see Table A.6.22). GDP growth only significantly influences flows from permanent employment to unemployment and to education. While the latter effect is negligibly small (0.0098 percentage points), the former is sizable: A one per cent decrease in GDP growth is associated with a 1.1 percentage points increase in permanent employment-to-unemployment flows.

The final regressions split up the sample into pre-crisis observations and during the crisis observations and additionally control for log GDP growth (Tables A.6.23 and A.6.24). Before the crisis, GDP growth only positively influences transitions from permanent to temporary employment significantly. During the crisis the coefficients on log GDP growth additionally show a significant influence on flows from permanent employment to unemployment and to education. Yet, the economic significance is only given for the flows into unemployment. Here a one per cent decrease in GDP growth increases flows to unemployment by 0.4 percentage points. One could conclude that in times of crisis, there is an influence of the business cycle on flows from permanent employment to unemployment; albeit it is rather small.

²⁹ As pointed out in Section 5.2.2, this could hint at an increasing polarization of the labour market (Goos et al. 2009). However, the result is not consistent across the different labour market transitions which we analyse.

6.1.3 Regression results for transitions from temporary employment

This section interprets the regression results for the probability of remaining in that labour market state, and for transitions from temporary employment to five other labour market states: to permanent employment, to self-employment, to unemployment, to education, and to inactivity. The columns of the results tables of this section are ordered accordingly.

The baseline specification of transition rates from temporary employment for the entire time period considered is provided in Table A.6.25. Most coefficients display intuitive tendencies, but some are not statistically significant. This could be due to a lack of statistical power since these regressions are restricted to those individuals that transfer from temporary employment and this is a smaller group than those permanently employed (see Section 5.2). The results indicate that men are nearly 3 percentage points more likely to change from temporary to permanent employment, and also 0.9 and 2 percentage points less likely than women to become unemployed or inactive. This finding is in accordance with our previous results for the male dummy variable.

The young and older age cohorts are less likely to remain in temporary employment than the middle-aged group by 2 and 5 percentage points respectively. The youngest age group is also more likely to change into education than the reference group (by around 3 percentage points), while the oldest workers are much more likely to become inactive (by 10 percentage points) compared to the middle-aged group. Both tendencies are in line with our age-related hypotheses (Chapter 2).

Low-skilled workers are 4 percentage points less likely to change from a temporary-contract to a permanent-contract job from one year to the next. At the same time, they are also 3.6 percentage points more likely to become unemployed than medium-skilled workers. The picture is quite different for high-skilled workers in temporary employment: They are significantly more likely to remain on temporary contracts but also less likely to transfer into unemployment and inactivity from a temporary contract than medium-skilled workers. These effects are all substantially larger, especially compared to the coefficient on the covariates included in the regressions on transitions from permanent employment. This indicates that temporary jobs have very different functions for these different socio-demographic groups. Hence, these findings suggest that the crisis may have heterogeneous effects across skill groups.

In the following regression, we include a crisis indicator and interact it with socio-demographic dummy variables to examine the heterogeneous impact of the crisis. Table A.6.26 suggests that the crisis only significantly influenced transition probabilities from temporary employment to permanent employment. During the crisis, temporary employment is much less of a stepping stone into permanent employment since the probability of transferring to permanent employment decreases by 4.4 percentage points during the crisis. The transition probability from temporary employment to unemployment increases by 4.2 percentage points more for men than for women (see Table A.6.27). This means that the crisis affected men much more in this respect. Furthermore, Table A.6.28 reveals that the crisis increased the temporary-employment-to-unemployment transition rate for 15-24 year-olds by nearly 3 percentage points more than the 35-54 year-olds. Hence, the crisis impacted the youngest most – something one could expect given that they have higher shares in temporary employment than other age groups (see Section 5.1) and that the theoretical literature suggests that the youngest are dismissed faster than older, more experienced workers.

Turning to the disaggregated impacts of the crisis by skill group, the results in Table A.6.29 indicate that contrary to our expectations it is the transition probabilities of the high-skilled

workers that were affected most by the crisis. The transition rates from temporary to permanent employment decrease by 1.7 percentage points more for high-skilled workers than for medium-skilled workers. And flows to unemployment from temporary employment appear to increase by up to 2.8 percentage points more for high-skilled than for medium skilled workers. Both effects are substantial and are in line with what we found in the descriptive analysis of Section 5.2. One, however, needs to bear in mind that the high-skilled workers are also the ones that had the most beneficial labour market transition probabilities prior to the crisis.

Now we include log GDP growth into our regression to control for business cycle effects on labour market transitions. As Table A.6.30 suggests, GDP growth has a statistically significant influence on temporary-employment-to-self-employment transitions; one per cent GDP growth is associated with 0.5 percentage points higher flows into self-employment. Furthermore, GDP growth is positively correlated with flows from temporary employment into education.

For our final regression results, we split the sample into one for the pre-crisis period (Table A.6.31) and one for during the crisis (Table A.6.32). Before the economic crisis, GDP growth is not statistically significantly associated with any of the labour market transition rates; during the crisis, we observe statistically significant correlations of GDP growth with labour market transitions. First, a one per cent decrease in GDP growth is associated with a 5 percentage point decrease in the probability of remaining temporarily employed. This is a strong correlation. Second, a one per cent decrease in GDP growth is associated with a 2 percentage point increase in flows to unemployment. This is also a considerably strong relationship. Furthermore, GDP growth is negatively correlated with flows to inactivity: the lower GDP growth, the higher the likelihood of changing into inactivity.

These correlations of the business cycle with labour market states are much stronger for transitions from temporary employment than the transitions from permanent employment which we discussed in the previous section (6.2). Hence, the crisis affected transitions from temporary employment much more than that from permanent employment – a tendency we already discovered in the descriptive analysis (Section 5.2) and can now reconfirm when controlling for country and year fixed effects as well as the different labour market compositions.

6.2 Regression results for transitions from self-employment

This section presents multinomial regression results from self-employment to the destination states self-employment (S), employment (E), unemployment (U), education (Ed) and inactivity (I). As before, all interpretations are done in relation to our base-category S, staying in self-employment.

Table A.6.33 shows the estimation results for our baseline-specification including basic socio-demographic covariates using the EU-SILC data set for the entire time period considered. Concerning gender, we find that men have a higher probability to remain self-employed and/or make a transition to inactivity compared to women. Further, from the results of different age groups, one can see that older persons are more likely to stay in self-employment: While persons who are 15 to 24 years old are less likely to remain in self-employment (11.1 percentage points) compared to our reference category (age 35 to 54), the effect is the smallest for the group aged 25 to 35 (3.9 percentage points below the reference category). Even persons who are of the age of 55 to 65 have a statistically significant negative probability of remaining in self-employment compared to the reference group, but their effect is only half the size of the effect of the youngest group (5.1 percentage points less than the reference group).

Married persons display more persistence in terms of their labor market status: They have a higher probability to remain self-employed between two time periods, and they are less likely to become unemployed than singles. Concerning differences between skill groups, we find statistically significant results. However, they are small in terms of economic significance. For example, low-skilled persons have a 0.45 percentage point lower change to get employed compared to medium-skilled persons (reference group). With respect to the household-age composition, we cannot find evidence that either the number of young or old persons in the household is significantly correlated with the labor market transitions out of self-employment. If they are significant (for example, for transitions from self-employment to employment) they are only so at the 10 percent level and they are again small in size. Similarly, the labor market situation of the partner (full-time employed, part-time employed or non-employed) who is living in the same household, as well as the variable indicating whether a person lives together with a partner do not display a significant correlation.

Table A.6.34 presents the results for the same specification but using EU-LFS data (i.e. considering Germany and Romania only). Concerning gender differences and in contrast to the former results (Table A.6.33), there is evidence that self-employed men have a lower probability (3.3 percentage points lower) to get a dependent-status job than self-employed women. For the age groups, the results are in line with the results on the basis of EU-SILC: The youngest group has the lowest probability to remain in self-employment. However, there is no statistically significant difference compared to the oldest age group. In this vein, the oldest age group has the lowest probability of all age groups to enter employment dependent-status employment (E) from self-employment. For instance, if a person belongs to the group of age 25 to 34, the probability to enter dependent-status employment is 3.5 percentage points higher than the probability of the reference group.

Using the LFS data, we see that married persons are more likely to make a transition to employment, which is in contrast to the results from the EU-SILC data. Therefore, Germany and Romania seem to differ in this respect from the other countries considered. However, this effect is only statistically significant at the 10 percent level. In terms of skills, the results indicate that high-skilled persons in self-employment seem to be more stable with respect to their status than medium- and low-skilled persons: Their probability to remain self-employed is 2.8 percentage points higher, and their probability to get dependent employed 1.8 percentage points lower. Again, concerning the household-age composition, the results are not strong in terms of either statistical or economic significance (which is also the case for the variable “no partner in household”).

We now turn to our main results, which focus on the effects of the recession. Tables A.6.35 (EU-SILC) and A.6.36 (EU-LFS) show the results for the specification where we add the crisis indicator to our baseline regression. In line with EC (2010), we do not find strong effects of the economic crisis on the transitions out of self-employment. The only notable effects can be seen in Table A.6.35. During the economic crisis, transitions from self-employment to dependent-status employment get less likely (by 0.8 percentage points) and transitions to unemployment (by 0.45 percentage points) get more likely. These effects are economically small in size. However, one has to bear in mind that we estimate an average effect for all countries within our sample. This may not do justice to the considerable variation of self-employment (share of self-employed in a country, sectors of self-employed and business support policies) within European labor markets.

Furthermore, the small average effects found may mask important differences between socio-demographic groups. In order to investigate this, we include an interaction term between the

crisis dummy and dummy variables for the different groups. As described in detail in Section 6.1.1, the interaction term for a specific demographic group can be interpreted as the impact of the crisis on this demographic group, compared to the reference group.

The interaction term of the crisis and male dummies (Tables A.6.37 and A.6.38 for the EU-SILC and the EU-LFS data, respectively) is statistically significantly negative for the transition from self-employment to dependent-status employment, but economically small in size. This implies that for men, as compared to women, the transition rate from self-employment to dependent-status employment fell during the crisis. Tables A.6.39 and A.6.40 present the interactions with the different age group dummies in order to find out whether different age groups were affected differently by the crisis. Again, we do not find heterogeneous effects of the crisis concerning this socio-demographic characteristic. The same result has to be noted for the skill-group interactions on the basis of EU-SILC data (Table A.6.41). However, Table A.6.42 presents regression results on the basis of EU-LFS data, i.e. Germany and Romania. Here, we find a positive significant effect for highly-skilled persons during the crisis on making a transition to employment. This means that, compared to the reference category of medium-skilled workers, the likelihood of making a transition from self-employment to dependent-status employment rose during the crisis for highly-skilled workers in Germany and Romania. At an aggregate European level, however, the crisis period does not seem to have different effects on the considered groups (according to gender, age, skills) with respect to transitions out of self-employment.

As before in Section 6.1, we have a further set of specifications where we add log GDP growth to our baseline specification. This accounts for the actual evolution of GDP and hence also for differences in the length and depth of the recession across countries. Table A.6.43 shows the results for the entire time period using EU-SILC data. A one percent increase in GDP growth increases the probability to make a transition from self-employment to dependent-status employment by 1.2 percentage points and lowers the probability to make a transition to unemployment by 0.49 percentage points. Thus, a positive business cycle development may lead to more self-employed persons taking up a dependent-status employment. This does not seem to be the case in Germany and Romania, as the results on the basis of EU-LFS data show that a one percent increase GDP growth leads to a higher probability of staying in self-employment of about 0.69 percentage points (Table A.6.44). Intuitively, both directions are possible and confirm our expectations. However, the effect on transitions to employment is higher than to stay in self-employment, which may be interpreted in the way that better business cycle conditions attract persons into the labour market and that firms hire them.

If we focus our analysis on the period before the economic crisis, the results on the basis of the EU-SILC data (Table A.6.45) indicate a negative relationship between GDP growth and remaining in self-employment (almost 3 percentage points). Results based on the EU-LFS data, Table A.6.46, indicate a positive relationship (1.6 percentage points). During the economic crisis, it seems that GDP growth is positively associated with staying in self-employment (Table A.6.47) for EU-SILC data. Results of the EU-LFS data show no significant effects.

These results confirm our theoretical expectation that flows into and out of self-employment are driven by two conflicting factors. On the one hand, bad business-cycle conditions may lead persons to leave self-employment, because of a lack of good business opportunities in self-employment. Conversely, a boom would attract people to self-employment because of the availability of good business opportunities. On the other hand, more people may enter self-employment in bad times, because there are only very few other jobs (i.e. dependent-status employment) available; they may therefore enter self-employment for a lack of other possibilities. Similarly, in a boom, people may leave self-employment in order to find a better (in partic-

ular: more stable) job in dependent-status employment. Our results indicate that, generally, before the crisis, the second factor – people leaving self-employment in times of an upswing to find a better job – prevailed. During the crisis, however, the first factor – people leaving self-employment because of a lack of business opportunities – seems to have taken over.

To sum up, our analysis confirms our expectations on the basic covariates. The effect of the economic crisis on labor market transitions out of self-employment is either not statistically significant or economically very small. Lastly, for the effect of GDP we get results that are not consistent across data sets, which indicates that Germany and Romania differ from the other EU countries in this respect. So, whether a rise in GDP leads to a more stable situation in self-employment or a diverting effect to employment is not clear a priori, and differs across countries and time periods.

6.3 Transitions from unemployment

6.3.1 Regression results for transitions from unemployment

In this section, we present the regression results of multinomial regression estimates for transitions from unemployment. We thereby run the same specifications as presented in the former sections, without including occupational dummies in our analysis. However, we control for country as well as year specific effects.

Table A.6.49 presents the results of our baseline specification including personal and household characteristics on the basis of the EU– SILC data. All the included covariates have the expected sign and are statistically as well as economically significant in most cases. First of all, men have a higher probability of remaining in unemployment (column U). However, the probability that a man leaves unemployment and gets employed again (column E) is also higher than for women (by almost 5 percentage point). For women, in turn, the probability of leaving the labour market to education (column Ed) or inactivity (column I) is higher than for men.

Next, age plays a prominent role. While young persons (aged 15-24) are the most likely to make a transition from unemployment to employment, older persons have the lowest chance to make this transition. Further, the coefficient on being married compared to single is not statistically significant in most of the transitions we are investigating. However, married persons have a lower probability to enter education after they suffered from unemployment in the last year. This can be explained by the fact that married persons are often more advance in their labour market careers than singles and thus their potential returns to education decrease and/or their willingness to invest in education is lower.

In addition, our basic specification reveals that skills matter: Highly skilled persons in unemployment have the highest chance to get employed as well as to become self-employed. Family composition plays a further important role. In particular, the number of children under the age of 4 is negatively correlated with the probability to make a transition into employment. In addition, living together with a person older than 65 who could potentially be in need of care, is associated with a lower unemployment-exit probability. From the coefficients of the employment status of the partner, we can see that part-time employment of the partner is connected with a higher probability to get employed or self-employed. This can potentially be explained by the goal to increase household income. Lastly, persons who do not live together with a partner in the same household are more likely to remain unemployed. This could be due to lower access to job search networks.

Estimation results on the basis of the EU–LFS data, i.e. for Germany and Romania, are given in Table A.6.50. In general, the results we get and the conclusions we draw are in line with the

previous results using EU-SILC, despite some minor differences. Concerning age, the EU-LFS results indicate that older persons of the age between 55 and 65 have a lower probability to stay in unemployment than the reference group (age 35 to 54). However, their chance to get employed remains the lowest of all age groups and is highly economically significant as well as statistically significant. Concurrently, the size of the coefficient for this age group for making a transition to inactivity is higher than in the SILC-data. Regrettably, EU-LFS data do not include detailed information on the employment status of the partner. Hence, we have to rely solely on the information whether the partner is employed or not. The results reveal that for persons with a partner that is employed, the chance to leave unemployment is higher than for persons that are non-employed too. Again, this can be caused by the goal to increase household income or due to selection effects or access to job networks.

In a next step, we include a dummy indicator in our regression of whether the transition was made before or during the economic crisis. Table A.6.51 shows the results. As argued in Section 2.3, we expect that unemployment duration increases during the crisis and transitions to employment become more unlikely. Following the EC (2009), the effects of the crisis on making a transition to self-employment can be ambivalent. On the one hand one may argue that transitions become more unlikely as the expectations about the future economic development get more pessimistic. On the other hand, self-employment may be a possibility to exit unemployment in a period when new jobs are scarce. The results on the transition from unemployment to employment support these expectations: During the economic crisis, the probability of making the named transition decreases by about 4 percentage points, which is statistically significant at the 5% level. Results based on the EU-LFS data (Table A.6.52) do not confirm but also do not reject this fact.

Against our expectations, the econometric analysis does not indicate statistically significant effects in the sense that the economic crisis led to a higher persistence of unemployment. Respectively, the coefficient of the crisis indicator is not statistically significant for staying unemployed (column U). This applies also for the other destination states. Therefore, the main factor behind increasing unemployment rates during the crisis are increased inflows rates into unemployment, in particular, increased flows from employment to unemployment, not reduced outflow rates from unemployment.³⁰ It is likely that this is a feature of the (relatively) early phase of the recession that we investigate (2008-2010), and that unemployment displays much higher persistence in later years.

Table A.6.53 (EU-SILC) and Table A.6.54 follow the former specification while adding an interaction term of gender and crisis. In line with Section 2.5, we expect that men have been hit more severely by the economic crisis than women, which is also due to the fact that they are more likely to work in sectors such as manufacturing and construction (see Chapter 1) that have been affected the most by the recession. The results of both tables confirm that men, compared to women, have a higher probability of remaining in unemployment and are less likely to make a transition to employment during the recession. For instance in Table A.6.53, women's probability of making a transition from unemployment to employment falls by almost 2 percentage points during the recession compared to the pre-crisis period. However, men's probability decreases by almost 5 percentage points.

³⁰ *It should however be pointed out that this issue is the subject of a general debate in the literature (e.g. Elsby et al. 2012), and that a complete answer to this requires a detailed decomposition analysis.*

Turning to heterogeneous effects with respect to age, we present interactions of the crisis dummy and the different age groups. Table A.6.55 presents the results, where the interaction between the crisis dummy and the dummy variable of a specific age group indicate whether this age group was particularly affected by the crisis. Overall, our expectation that the young and old have been hit by the crisis more compared to the mid-range age-group finds no empirical support in case of flows from unemployment to employment or for the probability to stay unemployed. This picture is supported by the results on the basis of the EU-LFS data, given in Table A.6.56.

The last specification on interaction terms of personal characteristics – now with respect to skills – and the crisis indicator is presented in Table A.6.57 for EU-SILC data. Here, we cannot confirm our expectations on the effect of the crisis on specific skill groups. The only statistically significant effect can be found for the highly skilled. In contrast, results using the EU-LFS data are more intuitive (Table A.6.58). Here, even though highly skilled workers are likely to stay unemployed in a phase of economic contraction, their probability to transit back to employment is positive and statistically significant. Further, the size of this coefficient (column E) is three times higher than the size of the coefficient of remaining unemployed (column U). In addition and for both data sets, the interaction of the crisis indicator and the low-skilled is statistically insignificant, which implies that low-skilled workers did not suffer differently from the crisis than workers of other skill groups.

In a last step, we add the logarithm of GDP growth to our baseline specification. Table A.6.59 presents the results for the entire period under investigation. The coefficients for staying unemployed (negative effect of GDP growth) and getting employed (positive effect of GDP growth) are as expected and statistically significant. This is also the case for transitions into self-employment and inactivity (both positive). Lastly, an increase of GDP growth of one percent decreases the probability to transit to education by 0.2 percentage points, which is economically small in size. The estimated coefficients using the EU-LFS data, see Table A.6.60, are in the most cases insignificant. However, in case of transitions to education they confirm the former results (also in terms of the size of the estimates). In contrast, an increase in GDP growth is related with a decreased probability to move to inactivity. This could be because unemployed persons expect to find a job soon when the economy starts growing faster, and therefore remain in the pool of the unemployed searching for a job instead of leaving the labour market.

Table A.6.61 presents the results with the EU-SILC data for the period before the economic crisis occurred. The results show that GDP plays a prominent role: A 1 percentage point increase in GDP growth decreases the probability of staying in unemployment by around 28 percentage points. This effect – and the results to be presented in the following – seems to be very large, especially as we included country dummies. However, one has to bear in mind that we did not include year dummies in this specification as well as interaction terms of country dummies and year dummies. Therefore, it may be the case that the GDP variable captures the unspecified effects as for example country trend effects (interaction of country and year dummies). The results further confirm a positive impact on leaving unemployment to employment (15 percentage points). For all other destinations the effect is statistically insignificant besides inactivity, where an increase of GDP growth has a strong positive effect, which seems like a counter-intuitive result. Despite the difference in the coefficient of GDP for transitions into inactivity again, results using the EU-LFS, presented in Table A.6.62, do either confirm these results or are not significant.

Table A.6.63 presents the results of the same specification, but this time for the period of the economic crisis. The coefficients of GDP on the probability to remain unemployed or transit

into inactivity remain statistically significant and have the same sign compared to the period before the economic crisis, but they are reduced in size. Further, GDP has no longer a significant effect on getting employed after a phase of unemployment. Thus, GDP growth has a lower impact on labour market transitions compared to the period before the economic crisis. What seems to be counterintuitive at first can be explained by the deep economic recession that took place, respectively that business climate perspectives dropped sharply. Extreme changes in GDP were only to a small extent matched by an increase in labour market transitions. Therefore, both the size and the significance of the estimated coefficients are reduced in the recession.

Further and on the contrary to the pre-crisis period, GDP has now a positive impact on getting self-employed. Hence, it may be the case that unemployed persons are diverted to self-employment instead of dependent-status employment. Overall, the EU-LFS results confirm these findings (Table A.6.64). However, here the positive impact of GDP on making the transition from unemployment to employment remains. This may be explained by the fact that this data set covers Germany, where the crisis had a smaller impact than in other European labour markets.

6.3.2 Regression results for transitions from unemployment, detailed labour market states

In this chapter, we present further multinomial regression estimates for transitions from unemployment. Thereby, we have a more detailed look at the destination states splitting up employment up into temporary and permanent employment. Therefore, the interpretation of the results concentrates on those two destination states. Furthermore, we do not include occupational dummies in our analysis like before (Section 6.3.1). However, we control for country as well as year-specific effects.

Table A.6.65 gives the results for our basic covariates. Here, and in line with Table A.6.49 (baseline regression for transitions out of employment using EU-SILC), males have a higher probability to leave unemployment and get employed again compared to women. The probability to leave unemployment is almost equally distributed among the employment destinations: Men have a 2.7 (permanent employment) and 2.2 (temporary) percentage points higher probability to make the named transitions compared to the reference category.

Having a detailed look at the contract type is especially relevant concerning the defined age groups. Compared to the reference group, persons belonging to the age-group of 15 to 24 as well as 25 to 34 have a significantly higher probability to get employed. However, the probability to enter employment with a temporary contract is almost 2 times higher compared to permanent employment. For instance, the probability to get employed for the youngest age group compared to the reference group is 6.4 percentage points (temporary) versus 2.6 percentage points (permanent) higher. In contrast, belonging to the oldest age group (55 to 65 years old) is negatively associated with getting employed, and this effect is even larger for temporary employment. This can be explained by the high and significant probability to make a transition into inactivity for this age group.

Concerning marital status, our expectations are partially confirmed by the data: married persons are less likely to take up temporary employment (probability 1.5 percentage points lower), but the correlation with taking a permanent employment is statistically not significant compared to singles. With regard to skill groups, low-skilled persons have in general a lower probability to get employed than medium-skilled persons. Furthermore, the probability to get a permanent employment compared to a temporary contract is 0.7 percentage points lower. As expected, highly skilled persons have a positive chance to make a transition to employment,

whereby the size of the coefficients for both destination states (columns PermE and TempE) is almost identical.

Next, we do not find strong support that the age-composition of the household plays a crucial role for either entering the labor market via permanent or temporary employment. In detail, the results show that the number of children under the age of 4 is negatively associated with taking a job on a temporary basis. However, the effect is economically not very strong (0.9 percentage points) and statistically significant on a 5 % level. The coefficient of elderly persons is a little bit larger in size (2 percentage points) but only significant at the 10 % level. As already discussed in Section 6.1, the results of the employment status of the partner can be interpreted in the view of “positive assortative mating” (Brien, Sheran 2003: 45).

In Table A.6.66, we present the regression results for our baseline regression, where we have added the crisis indicator. The results show that during the economic crisis, the transition from unemployment to permanent employment becomes less likely (2.2 percentage points). In Table A.6.67, we further add an interaction term of the crisis indicator and the male dummy. This interaction term is strongly statistically significant and negative. Thus, unemployed men have a lower probability to find a job during the economic crisis compared to women.

We also find that transitions to permanent employment get more unlikely during the crisis (Table A.6.68). However, we do not find significant effects for the respective age groups as well as partially for the defined interactions of skill groups and the crisis dummy (Table A.6.69). In the context of permanent employment, there is some evidence that highly skilled persons have been hit by the economic crisis in particular (compared to the medium-skilled group). However, this result is only valid for permanent employment and on the 10 % significance level.

The final results concerning the origin state of unemployment are regressions where we control for GDP growth, in addition to the other variables of our baseline specification. Table A.6.70 presents the results for the entire period we are investigating. A one percent increase in GDP growth has a strong impact on the transition out of unemployment. In terms of permanent employment, it leads to an increase of 3.3 percentage points and in case of temporary employment to an increase of 5.4 percentage points.

If we focus on the period before the economic crisis (Table A.6.71), we only see a positive and statistically significant effect of GDP growth on permanent employment (3.3 percentage points). Lastly and in Table A.6.72, the results give a strong indication that transitions from unemployment into temporary employment compared to permanent rose during the economic crisis. A one percent increase in GDP growth leads to a higher probability to make the transition into temporary employment of 3.7 percentage points, while the coefficient of GDP for the transition from unemployment to permanent employment is not statistically significant.

6.4 Regression results for transitions from education

In this section, we discuss transitions out of education. Contrary to all other sections we will not analyse heterogeneities for socio-demographic groups using interaction effects since there are not enough observations in the data. For instance, there are only 85 individuals of the EU-SILC sample aged 35-54 that change from education to unemployment during the crisis. Hence, any regression results would rely on a very selective group and provide spurious correlations. For the same reason, we will not interpret any transitions from education to self-employment

because there are only few individuals that make this transition and they are likely to be very different from all other individuals of our sample, causing misleading correlations.³¹

Our baseline specification in Table A.6.73 presents the covariates we include in all regressions. They all have an intuitive interpretation and correspond to other empirical findings. For instance, the probability of remaining in education is 31 percentage points higher for those aged between 15 and 24 and 5 percentage points higher for those aged 25 to 34 compared to the reference group of 35-54 year-olds. By the same token, the young age group has a lower probability of changing from education to employment than the 35-54 year-olds but a higher probability of becoming unemployed or inactive after a period of education. For Germany and Romania, using the EU-LFS data, these findings hold true as well, only that the percentage point changes are all lower (Table A.6.74).

Furthermore, men are 2 percentage points less likely to remain in education from one year to the next than women, but are around 1 percentage point more likely to transfer into employment or unemployment than women. Again the signs of these covariates are the same for Germany and Romania; however, the effect sizes are smaller (Table A.6.74). Low-skilled workers are more likely to remain in education and less likely to transfer into employment than medium-skilled workers. This finding can be partly driven by the youngest age-group which could also be the group that has the highest proportion of individuals that are not old enough to have higher qualifications. In contrast, high-skilled workers have a lower probability of remaining in education and a higher probability of becoming employed out of education than medium-skilled workers. The same holds true for our EU-LFS sample for Germany and Romania, where these effects are even more pronounced.

The crisis has affected the transitions out of education significantly; this is what Table A.6.75 reveals for our country sample based on EU-SILC. The probability to remain in education increased by 1 percentage point during the crisis, which could be due to opportunity costs considerations that favour prolonging education periods: During the crisis, it is difficult to find a good job, therefore education is a good alternative. Furthermore, education-to-employment transition rates appear to decline by up to 2.5 percentage points while education-to-unemployment transition rates increase by up to 1.5 percentage points. All these are remarkable effects. Using EU-LFS data for Germany and Romania, the crisis seems to only significantly influence education-to-inactivity flows, which record a small decline (Table A.6.76). This suggests that the crisis impacted Germany and Romania quite differently than the countries included in our EU-SILC sample with respect to transitions from education.

Now we investigate how the business cycle as measured by GDP growth influences transitions from education over the entire period under investigation (2005-2010). According to the results presented in Table A.6.77, the education-to-employment transitions and the education-to-unemployment transitions are significantly affected by the business cycle. A one per cent decrease in GDP growth is associated with a 2.4 percentage point decrease of the probability of becoming employed out of education. And GDP growth is negatively correlated with education-to-unemployment transitions, meaning that in a recession, flows from education to unemployment are likely to increase. Both effects are as expected.

For Germany and Romania, the coefficient on log GDP growth is only significantly positively correlated with education-to-inactivity flows (Table A.6.78). This means that in times of booms,

³¹ *Technically, however, it is important to include this transition into our multinomial logit regression in order to fulfil the assumption of independence of irrelevant alternatives (Kennedy, 2008).*

individuals are more likely to change from education into inactivity. One possible explanation could be that these are individuals taking gap years or other temporary time off; something they could not afford doing during a recession.

We now examine the impact of the business cycle in separate samples for before the crisis and during the crisis. In pre-crisis years, GDP growth has no significant influence on flows from education to other labour market states (Table A.6.79). During the crisis, only flows from education to employment are significantly and negatively correlated with GDP growth (Table A.6.81). This means that a decline in GDP growth is associated with an increase in flows from education to employment. This correlation appears surprising since economic theory suggests that during a crisis, the opportunity costs of education decline and hence we would expect the probability of entering employment out of education to also decline. This would be contrary to our finding. However, this regression includes all age and skill groups not for all of which the opportunity cost considerations may apply. Furthermore, there is a stark contrast between the regression for the entire period (positive correlation between GDP growth flows from education to employment) and the regression for the crisis period (negative correlation). This could be explained by the fact that the variation in GDP growth is much more pronounced when looking at the entire period. When examining the recessionary period only, one only uses the variation of GDP growth during this period – but if GDP growth is low already, small changes in GDP growth may not yield the expected results, as shown by our analysis.

Interpreting the coefficients on the covariates for the pre-crisis and during the regressions provides insights on how differently the crisis affected certain groups of workers. For our EU-SILC country sample, one can detect a pattern in individual covariates for the pre-crisis and during the crisis periods. The signs on the control variable coefficients are the same in both periods. However, the point estimates are often larger in absolute terms during the crisis. For instance, we find that the 15-24 year-olds have a 28 percentage point higher probability of remaining in education than mid-aged workers before the crisis; during the crisis this probability increases to 36 percentage points. Likewise, the transition probability from education to employment is generally lower for 15-24 year-olds compared to 35-54 year-olds, however during the crisis the rates are even lower for the youngest workers compared to the mid-aged workers. This suggests that forces already driving the transitions from education before the crisis are amplified during times of crisis. We observe the same pattern for transition rates from education to unemployment: gender and age impact this transition in the same fashion as before the crisis only with more intensity and higher statistical significance levels. For example, men are significantly more (by 1.3 percentage points) likely to become unemployed out of education than women. Before the crisis we did not observe a statistically significant correlation.

The education-to-inactivity flows follow the opposite development; the coefficients on the control variables are smaller in absolute terms during the crisis. The socio-demographic characteristics play a less important role during the crisis than before, which may suggest that education-to-inactivity transitions during the crisis are more driven by a slowing economy than by individual characteristics. However, given that GDP growth is insignificant in both cases, the evidence on this is not conclusive.

For Germany and Romania, using the EU-LFS data, GDP growth is negatively correlated with remaining in education and positively correlated with changing into employment or inactivity before the crisis (Table A.6.80). During the crisis, only education-to-inactivity transitions are significantly positively associated with GDP growth (Table A.6.82).

Furthermore, for Romania and Germany we observe a similar pattern of driving forces for pre-crisis and during the crisis labour market transitions as with the EU-SILC country sample; however, the picture is more nuanced. Young age groups seem to prolong their education periods during the crisis since then the probability of remaining in education is higher than before the crisis, compared to the mid-aged group. Furthermore, while the youngest workers have lower education-to-employment and education-to-unemployment transition rates compared to the mid-aged workers, this trend is augmented during the crisis. In addition, the regression results suggest that low-skilled workers have a higher probability of becoming employed out of education compared to medium-skilled workers prior to the crisis and even more so during the crisis. And, the probability of becoming inactive out of education still remains higher for low-skilled workers than for medium-skilled workers, however, on a lower level during the crisis.

All in all, transitions out of education during the crisis largely follow the developments hypothesized in Chapter 2. In particular, remaining in education becomes more likely for the younger age groups, while at the same time entering the labour market becomes less likely. For all workers, we find that the probability of becoming inactive out of education decreases during the crisis.

6.5 Labour market institutions

6.5.1 Cross-country differences and specific labour market institutions

Up until now we have not specifically interpreted the country fixed effects which are included in all regression results presented in the previous sections. Country fixed effects are country-specific effects that explain the level in labour market transition rates in addition to the individual-specific characteristics (age, skill, gender, household member, and occupation) that we also control for. Furthermore, these country fixed effects stem from the regressions where we included log GDP growth, hence a large deal of business cycle variation and depth of crisis impact is already controlled for.³² To put it differently, country fixed effects measure the differences between countries in terms of specific transition rates, adjusting these differences for the composition of individuals and households in each country.³³ Therefore, these country-specific effects to a large extent pick up the different institutional setting in each country, e.g. whether the country has a minimum wage, high trade union density, high employment protection, or active labour market policies. In essence the country fixed effects include all kinds of labour market institutions. However, the country fixed effects cannot disentangle what institutions are most important for which transition, i.e. in the regressions they only pick up the overall effect

³² This entire section will only include countries in our EU-SILC country sample into the discussion since it is not possible to run regressions combining both EU-SILC and EU-LFS data sets.

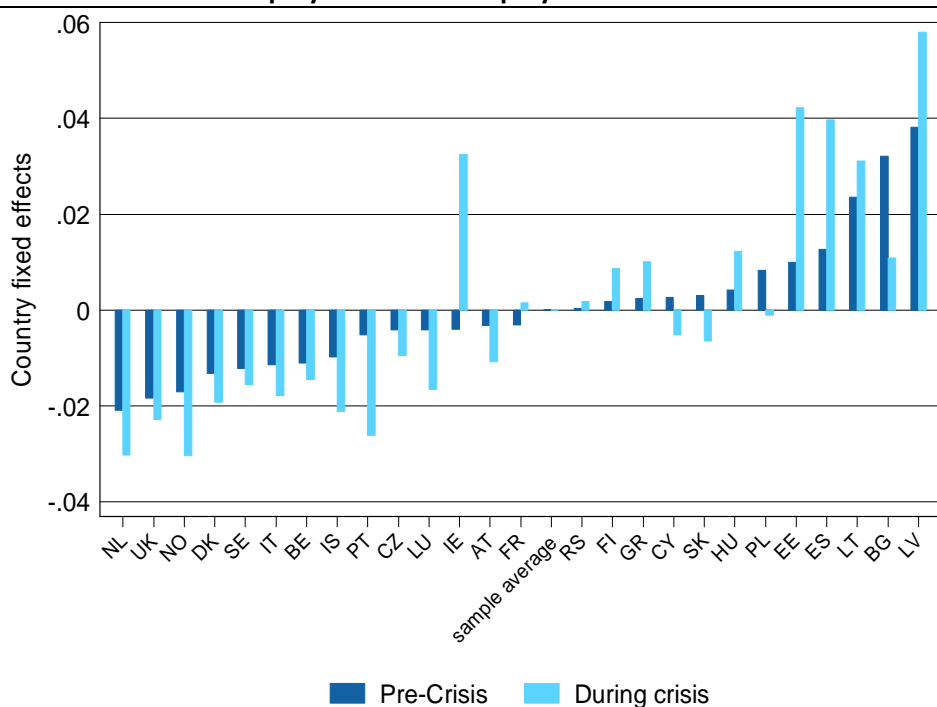
³³ This is in stark contrast to the raw transition probabilities presented in chapter 5 which do not control for composition effects or the length and depth of the crisis. Figures A.6.1 and A.6.2 in the appendix show the correlation between the difference in country fixed effects and unadjusted cross-country level differences in transitions for employment-to-unemployment and unemployment-to-employment flows. While the correlation coefficient for country fixed effects and transition probabilities amounts to 90.38 for employment-to-unemployment flows, it is much lower (65.65) for the unemployment-to-employment flows. This means that differences in the composition of the workforce and depth of the crisis affect the level of transitions significantly. Therefore, correlating the unadjusted transition probabilities with our institutional indicators is an endeavor that would in all likelihood produce misleading results.

of institutions. The latter contains every factor that affects level differences between countries except for the individual, household characteristics and GDP growth in every country.³⁴

Country fixed effects stemming from the regressions for employment to unemployment transitions are shown in Figure 6.1 compared to the country sample average. The dark blue bars show pre-crisis and the light blue bars during the crisis country fixed effects. Countries that lie more to the left of the graph have on average lower pre-crisis employment-to-unemployment transitions compared to the country sample average. For instance, this would refer to the Netherlands, the UK, Norway, and Denmark. Countries that lie close to the right-hand-side of the graph record higher probabilities of changing from employment to unemployment before the crisis. These are most notably Latvia, Bulgaria, and Lithuania. Often the countries that had higher pre-crisis employment-to-unemployment flows than the country sample average also have higher employment-to-unemployment flows during the crisis. This is, for instance, true for Latvia, Lithuania, Estonia, and Spain. But there are also countries such as Ireland, Cyprus, or Slovakia where the employment-to-unemployment flows change completely during the crisis. In Ireland the flows were at approximately the same level as for the entire sample prior to the crisis, but they increase by up to 3 percentage point during the crisis.

Figure 6.1

Country fixed effects from employment-to-unemployment transitions

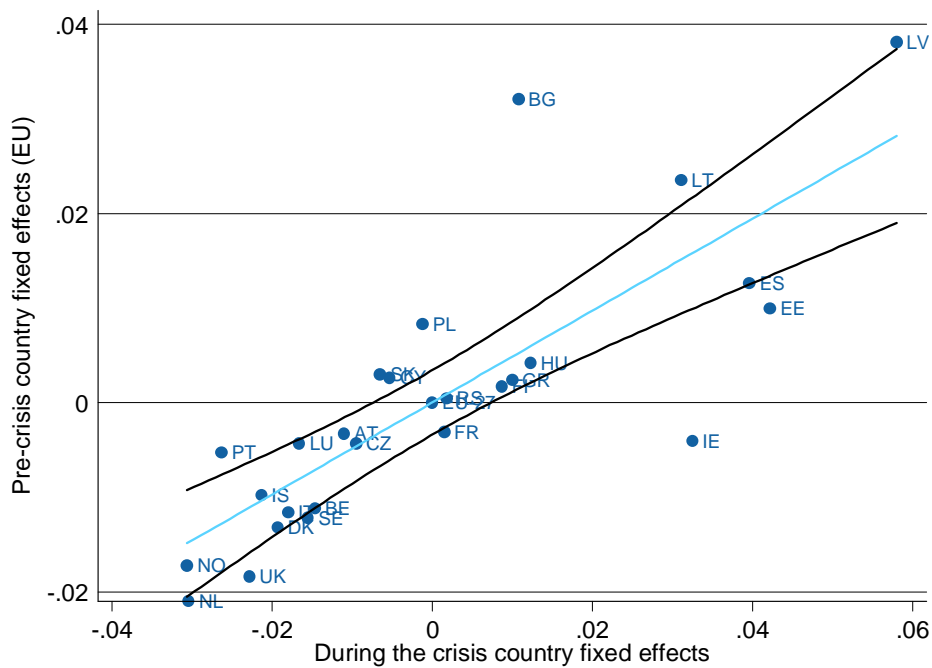


Source: EU-SILC, own calculations.

³⁴ Therefore, the following analyses should not be interpreted in a causal way, but merely as an indication of the potential existence of a causal relationship.

Viewed for all countries in the sample, one obtains a pattern of where countries are ordered similar according to their pre-crisis and during the crisis transition levels (Figure 6.2). This suggests that the crisis may have increased existing differences among EU countries, i.e. the crisis may have led to a divergence of European labour markets in terms of labour market transitions. Figure 6.2 indeed shows that there is a strong positive correlation between country fixed effects before the pre-crisis and those during the crisis. The correlation coefficient for the two time periods of 0.8051 for the employment-to-unemployment transitions confirms the impression that existing differences were reinforced during the crisis. While this suggests that the crisis may have led to at least a momentarily larger divergence among European countries, Figure 6.2 should be regarded as partial evidence for this hypothesis since it only displays a single transition.³⁵ The picture may be quite different when conducting a more comprehensive analysis. This is a promising alley for future research that is, however, beyond the scope of this report.

Figure 6.2
Correlation between pre-crisis and during the crisis country fixed effects from employment-to-unemployment transitions



Source: EU-SILC and own calculations. – Notes: Fitted values and 95 per cent confidence intervals shown.

What drives these country fixed effects is therefore a very relevant policy question. Hence it is important to reveal the institutions that make up the country fixed effects. We do so by showing the correlation of the country fixed effects with certain institutions. More specifically, we take the difference of the country fixed effects from the regression for the recessionary time period (2008-2010) on the one hand, and the country fixed effects from the regression for the pre-crisis country period on the other hand. This provides us with a composition-adjusted estimate for the change in labour market flows which occurred in every country. Taking this differ-

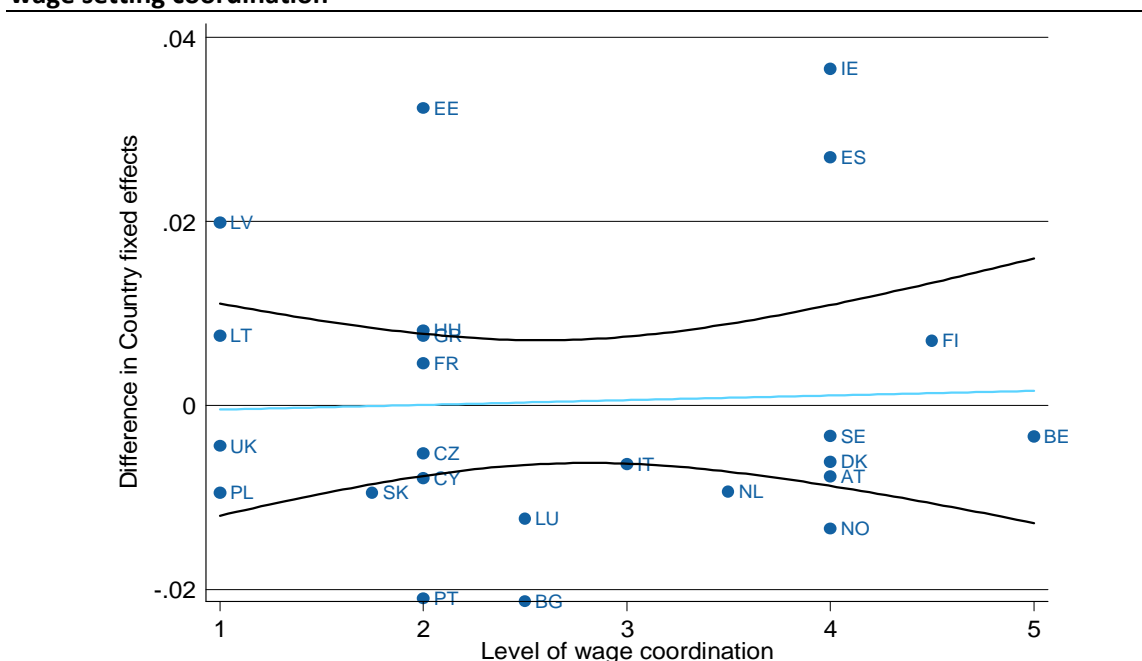
³⁵ See also the evidence on this with respect to unemployment-to-employment flows below.

ence has the advantage of being able to focus on changes that occurred during the recession, and to abstract from pre-crisis transition levels in the different countries. This difference in country fixed effects we correlate to pre-crisis averages of a number of institutional variables, predominately those already used in the cluster analysis of Chapter 4. This method aids us in providing some insights to whether these institutions help explain differences in the reaction of a country's labour markets to the recession.

First, we investigate the correlation of the level of wage setting coordination to the difference in country fixed effects. Figure 6.3 suggest that there is no such correlation. Hence, contrary to what theory postulates (see Section 2.4), we cannot empirically detect any relevance of the level of wage coordination for the size of the employment-to-unemployment flows.

Figure 6.3

Correlation between employment-to-unemployment transition country fixed effects and wage setting coordination

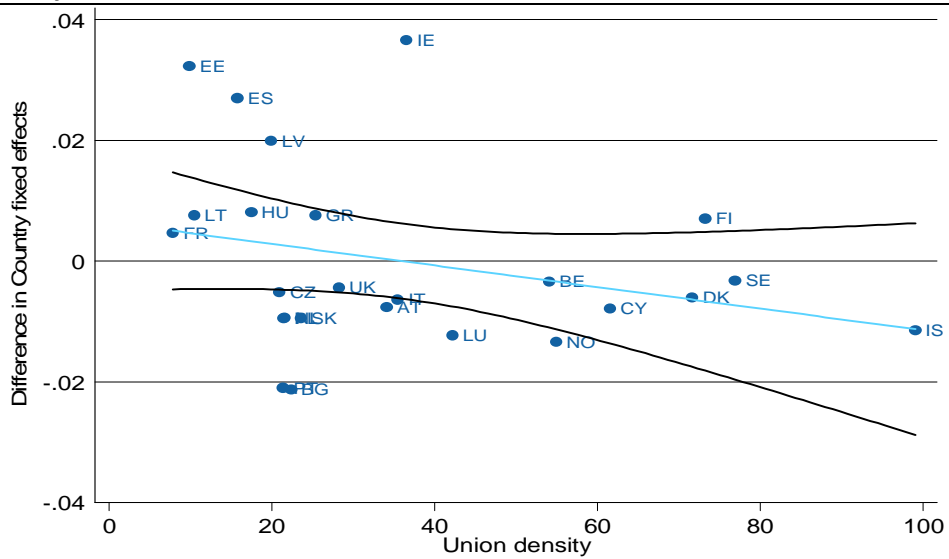


Source: EU-SILC and ICTWSS, own calculations. – Notes: Fitted values and 95 per cent confidence intervals shown.

Second, Figure 6.4 depicts a negative correlation between the country fixed effects and union density. This means that a higher union density is associated with lower flows from employment to unemployment. Theoretically the effect of unions on labour market transitions is ambiguous. This negative correlation hints at the explanation that trade unions may find effective ways to deal with negative effects of a crisis. Different levels of union density could partly explain the different levels of employment-to-unemployment flows across countries.

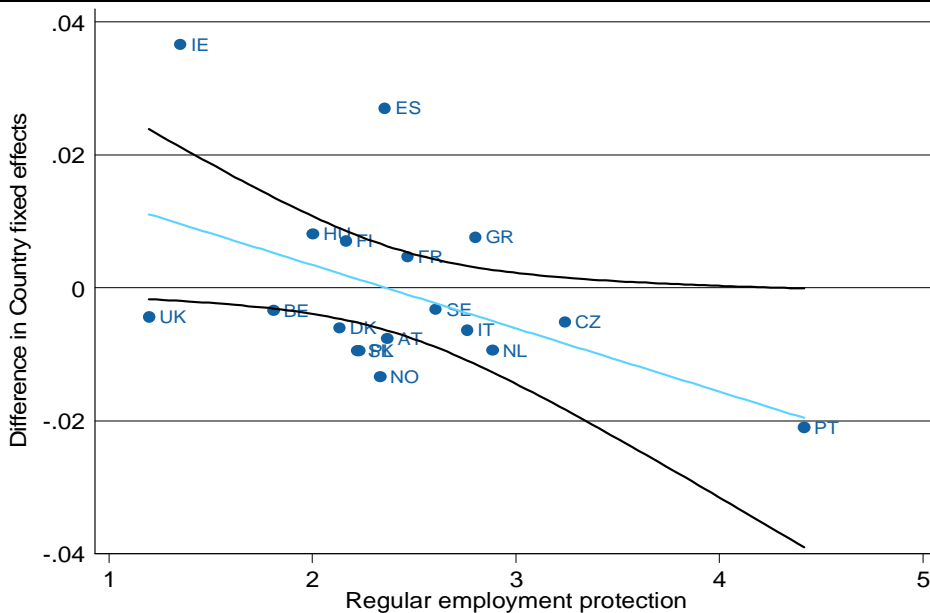
Third, we detect a negative correlation between the employment-to-unemployment flows and the degree of regular employment protection (Figure 6.5). This suggests that lower degrees of employment protection of regular workers are associated with a higher employment-to-unemployment transition rate. This negative correlation is rather strong. Therefore different degrees of employment protection may be a relevant explanation for cross-country differences in levels of flows from employment to unemployment. Temporary work regulations may also influence the employment-to-unemployment flows; however, in our analysis we did not detect such a correlation.

Figure 6.4
Correlation between employment-to-unemployment transition country fixed effects and union density



Source: EU-SILC and ICTWSS, own calculations. – Notes: Fitted values and 95 per cent confidence intervals shown.

Figure 6.5
Correlation between employment-to-unemployment transition country fixed effects and employment protection

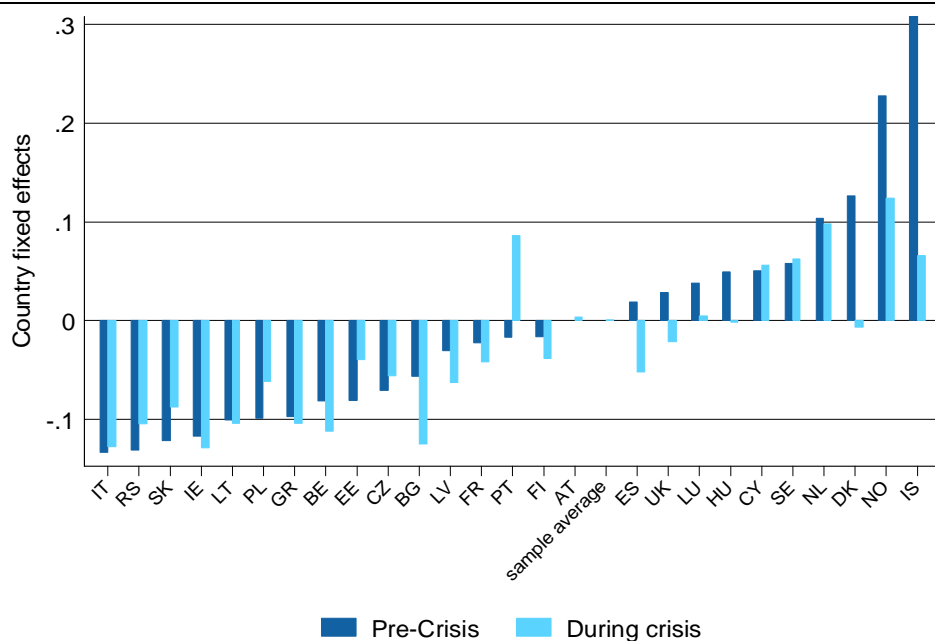


Source: EU-SILC and OECD, own calculations. – Notes: Fitted values and 95 per cent confidence intervals shown.

In order to investigate the difference in the country-specific reasons for different levels of unemployment-to-employment transitions, we proceed in the same fashion. Figure 6.6 presents the pre-crisis and during the crisis country fixed effects. Left-hand-side countries exhibit pre-crisis unemployment-to-employment flows below the country sample average. In these countries, one would assume that there are greater obstacles that prevent unemployed people from exiting unemployment to employment. This concerns, for example, Italy, Serbia, Slovakia, and Ireland. In contrast, right-hand-side countries such as Norway and Iceland have high pre-crisis unemployment-to-employment transition rates. The country fixed effects computed for the recessionary period mostly follow a similar pattern, often only lower in magnitude. For instance, in Iceland and Norway the country fixed effect lies still above average but is much lower during the crisis than before the crisis. Only for a few countries the fixed effects change compared to the country sample average. This is, for example, the case for Denmark where unemployment-to-employment flows drop from over 1 percentage point above average prior to the crisis to a bit below the country sample average during the crisis. Portugal, on the other hand, follows the opposite trend; here, unemployment-to-employment flows are slightly below average before the crisis and nearly 1 percentage point above the country sample average during the crisis.

Figure 6.6

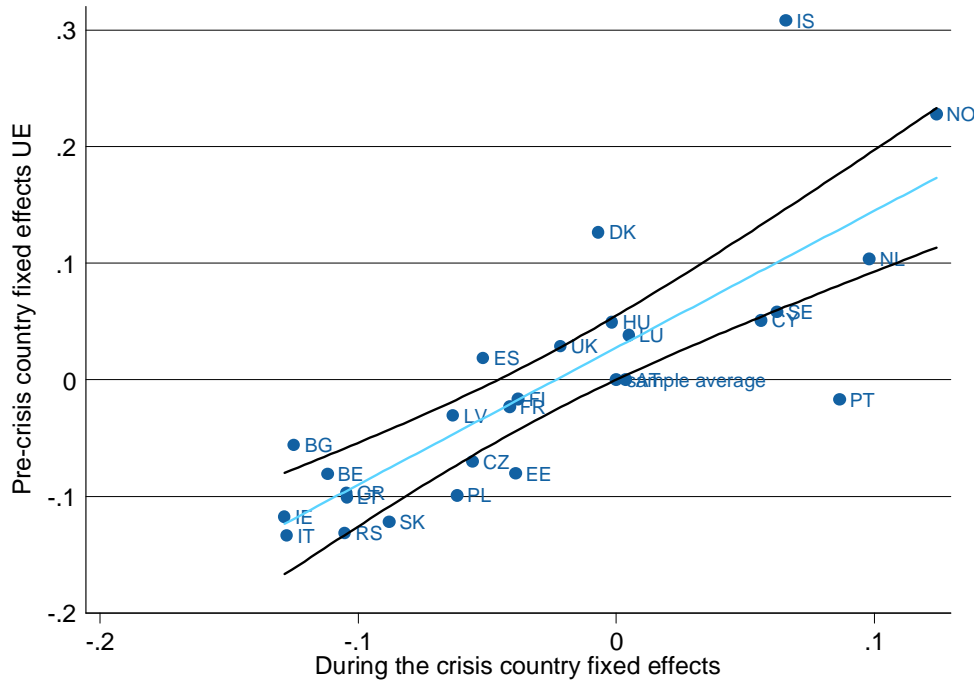
Country fixed effects from unemployment-to-employment transitions



Source: EU-SILC, own calculations.

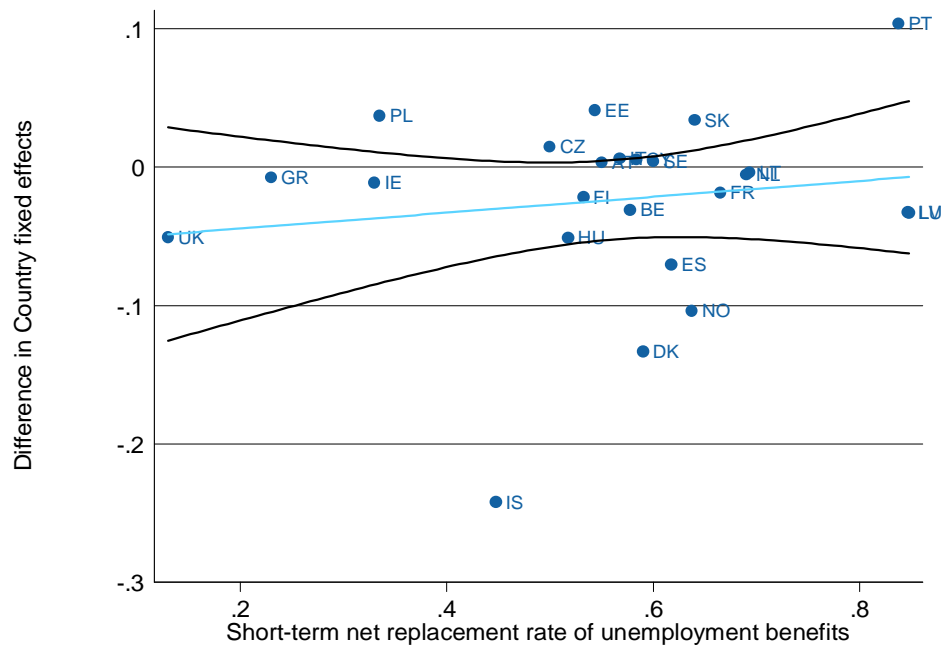
Similarly to the employment-to-unemployment transitions, Figure 6.6 hints at intensified cross-country differences during the crisis. In Figure 6.7, we therefore further explore this divergence hypothesis; it reveals that there is a strong positive correlation (the correlation coefficient is 0.8079) between the pre-crisis and the during the crisis country fixed effects. This provides some evidence for a larger divergence among European countries, although this brief analysis of a single labour market transition only provides partial evidence and leaves room for future research.

Figure 6.7
Correlation between pre-crisis and during the crisis country fixed effects for unemployment-to-employment transitions



Source: EU-SILC and own calculations. – Notes: Fitted values and 95 per cent confidence intervals shown.

Figure 6.8
Correlation between unemployment-to-employment transition country fixed effects and short-term unemployment benefits



Source: EU-SILC and OECD, own calculations. – Notes: Fitted values and 95 per cent confidence intervals shown.

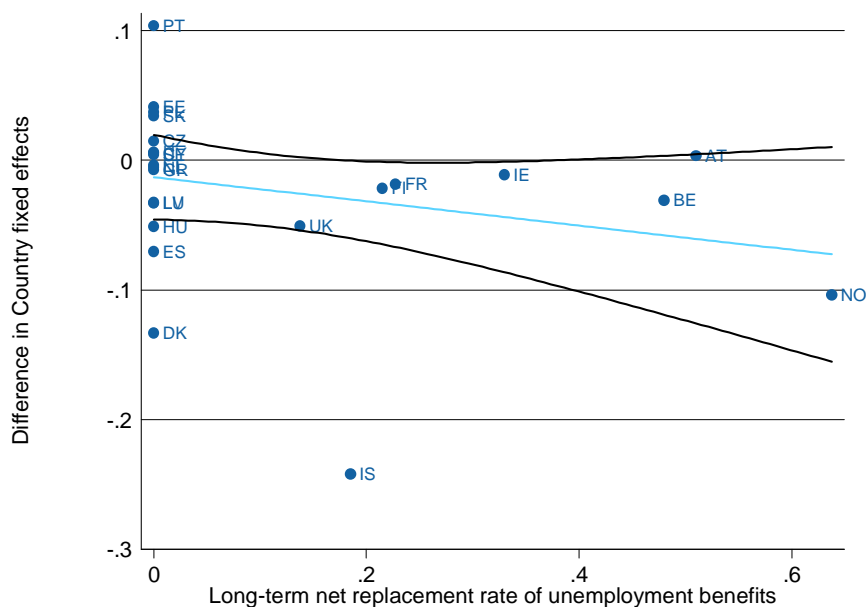
We begin with the correlation between short-term net replacement rates of unemployment benefits and the difference in pre-crisis and during the crisis country fixed effects. The aim of this exercise is to shed some light on what institutional factors could explain the cross-country variation in countries' reactions of unemployment-to-employment transitions to the crisis. As Figure 6.8 reveals, there is a small positive correlation between short-term net replacement rates and the level of flows from unemployment to employment. This indicates that higher short-term replacement rates can be associated with more people changing into employment out of unemployment. However, the correlation is rather weak and we cannot rule out that the relationship is statistically insignificant.

The picture for the long-term net replacement rates is quite different, since the correlation of long-term benefits and the unemployment-to-employment flows is negative (Figure 6.9). This could imply that higher benefit levels are associated with lower job-search intensity as theoretical considerations put forward. This illustrates an intuitive finding.

As we elaborated in Chapter 3, actual coverage rates of these short-term and long-term unemployment benefits could also influence the unemployment-to-employment transitions. Figures 6.10 and 6.11 do not support this theory, however. Both depict only a very weak correlation between benefit coverage rates and the flows into employment. However, the coverage rates are only available for about 60 per cent of our entire country sample; therefore, this finding could also hinge on data limitations.

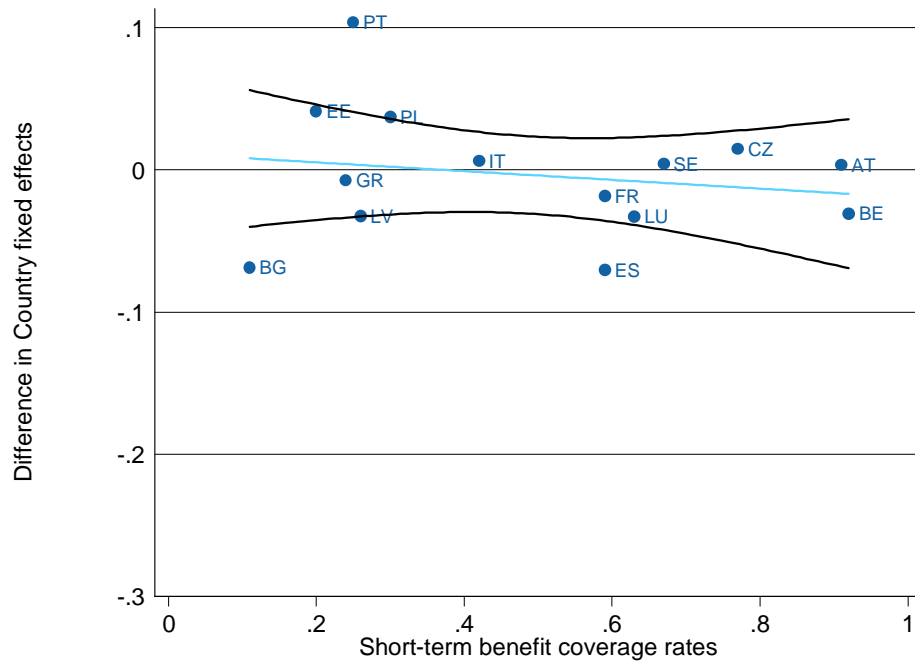
Figure 6.9

Correlation between unemployment-to-employment transition country fixed effects and long-term unemployment benefits



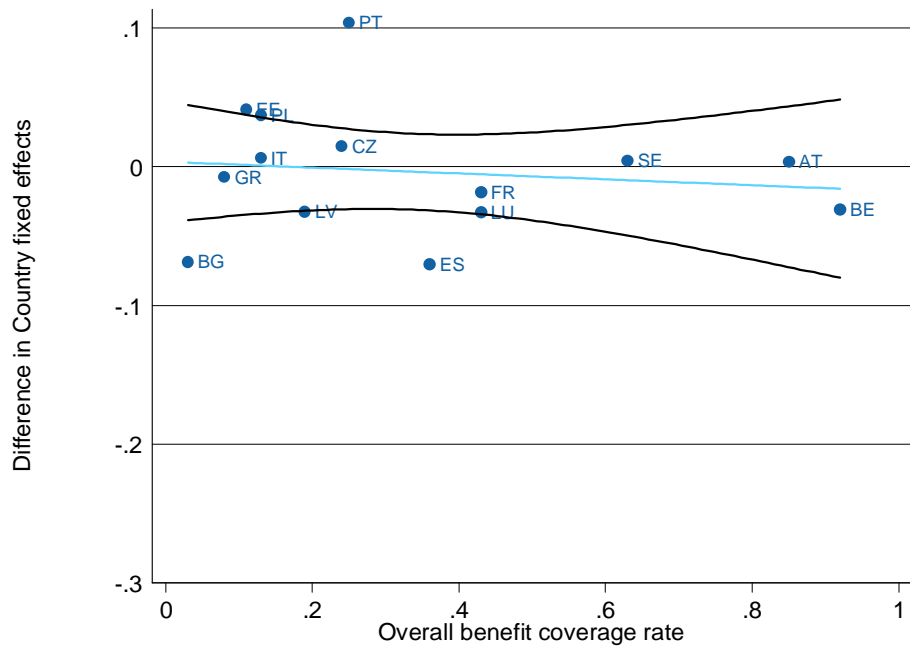
Source: EU-SILC and OECD, own calculations. – Notes: Fitted values and 95 per cent confidence intervals shown.

Figure 6.10
Correlation between unemployment-to-employment transition country fixed effects and short-term benefit coverage rates



Source: EU-SILC, own calculations. – Notes: Fitted values and 95 per cent confidence intervals shown.

Figure 6.11
Correlation between unemployment-to-employment transition country fixed effects and long-term benefit coverage rates

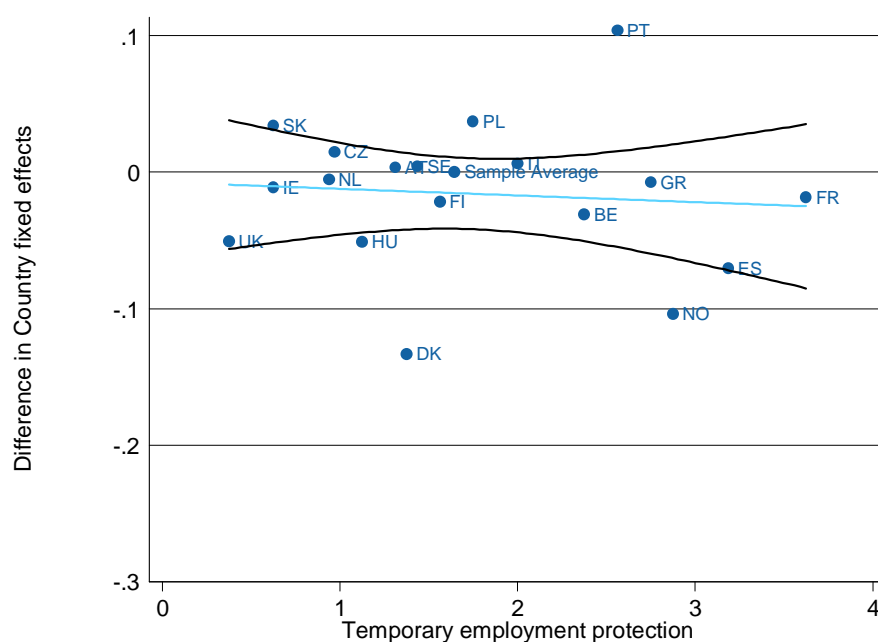


Source: EU-SILC, own calculations. – Notes: Fitted values and 95 per cent confidence intervals shown.

Employment protection can also influence unemployment-to-employment transitions. The employment protection measure for temporary work that is provided by the OECD is constructed in such a way that it captures the strictness of regulations when employing temporary workers, taking into account both the hiring and the firing dimension. The stricter these regulations, the lower we would expect unemployment-to-employment flows to be. The correlation displayed in Figure 6.12 does not confirm this; rather it suggests that there is no correlation between country fixed effects and the transitions from unemployment to employment.

Figure 6.12

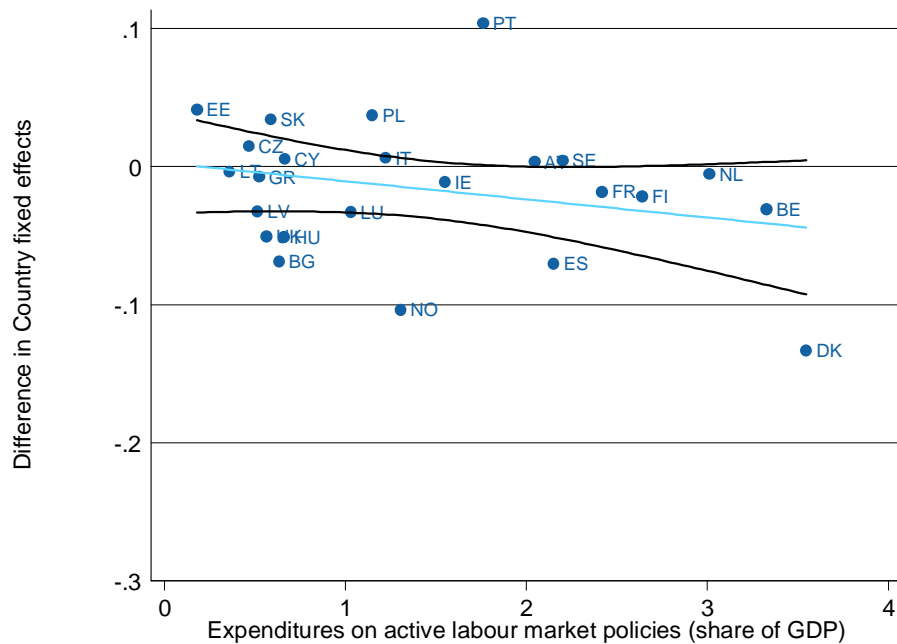
Correlation between unemployment-to-employment transition country fixed effects and temporary work employment protection



Source: EU-SILC and OECD, own calculations. – Notes: Fitted values and 95 per cent confidence intervals shown.

As a final investigation in driving institutional factors, we explore the correlation of active labour market policies and unemployment-to-employment flows. Contrary to what theory stipulates and other empirical studies have found, Figure 6.13 suggests a negative correlation. This result would mean that higher total expenditures on active labour market policies are associated with decreasing unemployment-to-employment flows. This general finding also carries over to other categories of active labour market policies such as categories 2-7 and 8-9. Nevertheless, this finding is explicable by the fact that it seems to be strongly driven by Denmark. This country formed a cluster of its own in the cluster analysis in Chapter 4 because it is very special in terms of its institutions. Therefore, if we were to exclude Denmark from the scatterplot, the negative correlation is likely to vanish. Furthermore, active labour market policies are very difficult to classify and may mean very different measures across countries. This could hamper cor-

Figure 6.13
Correlation between unemployment-to-employment transition country fixed effects and active labour market policies



Source: EU-SILC and Eurostat, own calculations. – Notes: Fitted values and 95 per cent confidence intervals shown.

relations at such an aggregate level as we are examining. We also examined how the country fixed effects relate to contemporaneous values of active labour market policies, since this institution may have been adapted during the crisis. However, also based on the average active labour market expenditures during the crisis the negative correlation persists.³⁶

In sum, this effort to disentangle the country fixed effects hints at different sets of conclusions for employment-to-unemployment and unemployment-to-employment transitions. While for the former, we identified the degree of employment protection and union density as institutions likely to influence the level of the country fixed effects, we detected only weak or no correlations of institutions for the unemployment-to-employment flows. As we explained, this may partly be due to measurement errors, but also may be specific to the time frame of our study. Overall, the effect of institutions on countries reactions to the crisis seems to be limited, at least at the aggregate level that we have investigated.

6.5.2 Cross-country differences and country clusters

As an alternative way to investigate cross-country differences and the role of institutions, we ran regressions for a specific country sample. The latter includes only countries which were chosen as “representatives” of the country clusters covered in Chapter 4. The aim of this exercise is to provide some evidence on differences between countries characterized by specific institutional settings, and thus on the potential impact of institutions.

³⁶ Regarding active labour market policies, RWI is currently working on a project (*The Effectiveness of Active Labor Market Programs over the Business Cycle*) that investigates the role of active labour market policies in more detail, with a specific focus on the recent Great Recession.

We therefore ran regressions for transitions out of employment, and out of unemployment, which include Spain, France, Greece, Italy, Poland, Sweden and the UK. The specification we have chosen includes individual covariates (plus occupational covariates in case of transitions out of employment), GDP growth, the crisis indicator, the respective country dummies. In addition, and in contrast to the previous regressions, we also include interaction terms of country dummies and the crisis indicator in order to allow for cross-country differences in labour-market responses to the crisis.

Overall, by using this approach we aim at capturing the influence of institutions and the resulting changes of labor market flows during the economic crisis. In particular, the coefficient of the crisis indicator captures changes in the levels of the labour market transitions common to all the countries in the sample. Most importantly for our analysis, the coefficient of the country dummy interacted with the crisis indicator-variable may give an indication of the potential effects of different institutional frameworks during the economic recession. The reasons for this are twofold. First, the included country dummies control for level differences in transition rates across countries for the whole time period we are investigating. Therefore, factors which have a constant impact over time are captured by the country dummies. Second, we include GDP growth and thus capture the economic development in every country, i.e. the depth and length of the economic recession. Therefore, the interaction term captures changes during the recession over and above (i) differences which existed already before the crisis and (ii) differences which can be explained by the severity of the recession in the different countries. Therefore, this term is likely to measure to a large part the effect of the country-specific institutional frameworks during the economic crisis on labour market transitions. Interpretations are done with respect to Poland (reference country).

Table A.6.85 presents the respective results for transitions out of employment. Again, we first look at the probability for remaining in employment. Here, for France, Italy, Sweden and the UK a significantly higher employment stability is displayed before the crisis than the reference country, Poland; for Greece and Spain, there is no significant difference to Poland. During the crisis, the stability of employment was greatly reduced. Note that this result captures factors which go beyond the effect of the decline in GDP, which is explicitly included in the regression and therefore controlled for. Employment stability was most strongly reduced in the UK, but also in France and Spain, and – although to a smaller extent – in Italy. In this respect, Greece and Sweden do not differ significantly from Poland.

In terms of transitions from employment to self-employment, in Spain, Greece and Italy, the probability to make a transition from employment to self-employment before the crisis was significantly higher than in Poland; in the UK it was significantly lower. However, this cross-country difference was reduced during the crisis.

In contrast, the results for transitions from employment to unemployment are notable and different developments emerge. For Spain we see a slightly higher probability to make this transition before the crisis (0.4 percentage points) compared to the reference country Poland. This difference increased greatly during the economic crisis (1.7 percentage points). For France, Italy, Sweden and the UK, comparatively low transition rates from employment to unemployment can be observed. The most important increase during the crisis can be observed for Spain. Higher transitions in comparison to Poland can also be observed in the UK and, to a much lower degree, in Sweden. France, Greece and Italy did not witness higher increases than Poland. Note again that all these results are valid for a given change in GDP, i.e. cross-country differences in GDP growth cannot serve as an explanation.

For transitions from employment to education, most countries are very similar before the crisis, except for Spain and – especially – Sweden, which witness much higher transitions. As for changes during the crisis, we hardly find any statistically significant cross-country differences. Therefore, the adjustment mechanisms with respect to this transition did not differ between the countries analysed.

As for transitions from employment to inactivity, before the crisis all countries display lower transitions rates than the reference country Poland, with France and Spain having the lowest numbers. During the crisis, most countries behaved similarly to Poland in this respect, with one notable exception: In the UK, the transition rate from employment to inactivity increased by more than 1 percent, although from a relatively low level.

The results for transitions out of unemployment are displayed in Table A.6.86. First, we look at the probability of remaining unemployed. We find much lower probabilities for Spain, Sweden and the UK as compared to the reference country Poland. Spain and Italy have a lower probability than Poland to remain unemployed, whereby the result for Italy is only significant at the 5 percent level of significance. Greece does not differ significantly from the reference country, Poland. During the crisis, we find that Spain, Greece and Sweden display a significantly higher probability to remain unemployed than Poland. France, Italy and the UK do not differ significantly from Poland in this case.

Looking at the transitions from unemployment to employment for the pre-crisis period, we find higher probabilities for Spain, France, Sweden and the UK; the probability to make a transition from unemployment to employment was significantly lower in Italy. Again, Greece has no significantly different result compared to Poland. During the crisis, only Spain has a highly significant result compared to Poland. In this case, the probability of a transition from unemployment to employment is much lower in Spain than in Poland. Also Greece and the UK display a significantly lower probability during the crisis, but only at the ten per cent level. The remaining countries, France, Italy and Sweden, have no significantly different probability compared to the reference country.

The probabilities of transitions from unemployment to self-employment in Greece and Italy before the crisis were significantly higher and in France significantly lower (only at the ten percent level) than in Poland. In the remaining countries Spain, Sweden and the UK, there are no significant differences to Poland. During the crisis, one can observe differences in mostly all of the countries: Here, Spain, France, Greece and Sweden have significantly lower probabilities, whereby the results for Spain and Sweden are significant at the highest level of significance, France and Greece only at the lowest. Italy and the UK display no differences compared to Poland during the crisis.

In terms of transitions from unemployment to education, before the crisis we observe significantly higher probabilities for Spain and Sweden, whereby the coefficient of Spain is not as significant as the one of Sweden. For France, Greece, Italy and the UK we notice no significant differences to Poland. During the crisis, the results do not change much: France is in this case significant at the lowest level, therefore has a higher probability for transitions from unemployment to education. Moreover Italy has a higher probability for this type of transitions during the crisis. The results for Greece and the UK remain insignificant as before the crisis.

Finally, as for transitions from unemployment to inactivity, before the crisis, all countries, except for Spain, show differences to the reference country Poland. In particular, France had the lowest probability, Greece and Sweden also had lower probabilities, but not to such a great extent as France. By contrast, the transition probabilities for Italy and the UK were significantly

higher than in Poland. During the crisis, all observed countries, and especially Spain and Sweden, had lower probabilities of making a transition from unemployment to inactivity than the reference country Poland.

Summarizing, we observe clear differences in the reaction of countries' labour markets to the crisis. Given that we control for GDP growth as well as for changes in transition levels which are common to all countries, these differences are likely to be related to cross-country variations in labour-market institutions. It is therefore interesting to compare the results obtained with those from the cluster analysis in Section 4. There, we saw that our reference country, Poland, belongs to the liberal cluster which is furthermore characterized by a scarce and exclusive benefit system. By contrast, Sweden is representative for the cluster with a high coordination of wage setting, a generous and inclusive benefit system, and a generally interventionist approach. These institutional differences, however, do not seem to have a strong effect on the labour market transitions from employment, as the Swedish labour market transitions reacted similarly to the Polish ones during the crisis. By contrast, the labour market transitions from unemployment display a higher probability of remaining in unemployment in Sweden, but also a lower probability to leave the labour market. Therefore, the Swedish labour market framework may well lead to a higher persistence in unemployment, but also to a higher labour market attachment, as less unemployed persons leave the labour market completely.

France and Spain belong to the cluster with minimum wages, midrange benefit levels and coverage, and average interventions (Chapter 4). Consequently, the transitions from employment are relatively similar between these two countries, with one important exception: Flows from employment to unemployment increased to a much greater extent in Spain than in France, which is in all likelihood due to the prevalence of temporary contracts in Spain. This is in line with evidence presented by Eichhorst et al. (2010b) and Bentolila et al. (2012). Labour market transitions from unemployment between these two countries display large differences. In particular, the probability to exit unemployment is much lower in Spain, which is due to much lower transitions from unemployment to employment and self-employment. Therefore, the collapse of the Spanish economy, with its great emphasis on employment in the construction sector and on temporary contracts, seems to have long-lasting effects. Furthermore, Spain did not set up any labor market program to support employment until the autumn of 2009, neither by setting up new programs nor by extending existing programs (ILO, 2009).

Finally, Greece and Italy belong to the same cluster as Poland. Again, the reactions to the crisis of the transitions from employment within this cluster are consequently very similar. However, and again similarly to the previous cluster discussed, transitions out of unemployment display a strong within-cluster variation for the crisis period. In particular, the probability to remain unemployed is much higher in Greece than in Italy and Poland, which is due to lower transitions to employment, self-employment, and inactivity. Similarly to Spain, Greece lacked active labour market policies at the start of the crisis (ILO, 2009) and this may have played a role slowing down flows out of unemployment. However, this finding may also hinge upon methodological issues since it is likely that the large contraction in Greece is not completely captured by our business cycle indicator.

It is therefore interesting to note that the cluster analysis hints at an important role of institutions. From a methodological point of view, it can furthermore be noted that the results are not always in line with the analysis of specific institutions in Section 6.5.1. In particular, while the analysis in this section showed a limited role of institutions for flows from unemployment to employment, the opposite is true for the cross-country regressions conducted here. This points to the importance of the interaction of labour market institutions. Furthermore, our cluster

analysis grouped countries mainly according to the pre-crisis institutional features in order to avoid endogeneity problems (i.e. institutions changing because of the crisis); while these are certainly important in characterizing the labour markets, this does not take possible institutional changes as a reaction to the crisis into consideration. These two fields – the endogeneity and the interaction of institutions – clearly warrant more research, which is challenging from a methodological point of view, however.

6.6 Monthly transitions out of unemployment

In the preceding chapters, we used the yearly data of EU-SILC and EU-LFS for the multinomial regression analysis. In addition, in this section we show results for monthly transitions out of unemployment, which can be computed from the EU-SILC data set (Chapter 3.1.1). As discussed in Section 5.3, more disaggregated data allow identifying labor market transitions more precisely. Furthermore, we showed descriptively that transitions from employment and unemployment are captured differently by the yearly and monthly data. Thus, we repeated our preceding analyses for both origin states with the help of the monthly data.

Regressions using the monthly data involve an extremely high number of observations, especially for transitions from employment.³⁷ Therefore, and because of the structure of the data set (panel data), the computations become very complex. For this reason, unfortunately the regressions for transitions out of employment were not computable.³⁸ In contrast and due to the fact that less people are unemployed than employed and thus the size of the data set is reduced for regressions out of unemployment, we can present results out of this origin state.

We thus concentrate on transitions out of unemployment, which is particularly interesting in this context as the problem of the time aggregation bias is particularly interesting for this origin state. This makes the analyses at a monthly level especially relevant. Table A.6.83 presents the results for transitions out of unemployment. The regressions were run with the individual covariates as well as country dummies. In addition, we added the crisis indicator to this specification. The results reveal that during the economic crisis, the state of being unemployed gets more persistent. The probability to remain unemployed increased by 6.7 percentage points. Further, the probability to get employed decreased by 6.2 percentage points. Next, the probabilities to get self-employed, and to make a transition into inactivity, are reduced. However, the effects for these two destination states are economically small (0.2 percentage points).

In general, these results are in line with the results on transitions out of unemployment on the basis of the yearly EU-SILC data (Table A.6.51). However, in the yearly data, the effect of making a transition to employment was less negative, with a probability which is 4 percentage points lower. Further, on a yearly basis, no significant effects for staying in employment, getting self-employed and getting inactive were found. Nevertheless and with the exception of education as destination state, the signs of the coefficients are identical.

To sum up, the analyses using monthly data are technically difficult, but where they were possible, the general results obtained from the analyses using yearly remain unaffected.

³⁷ For these regressions, the number of observations amounts to 5,467,460.

³⁸ Technically, the algorithms used to compute the coefficients of the multinomial logit models did not converge.

7. Summary and policy conclusions

In the following, we briefly summarize the results from our empirical analysis – which are to a large extent very policy-relevant. Furthermore, we consider some methodological issues which arose when performing our analyses. Finally, we discuss which policy conclusions can be drawn from our findings.

Reduced employment stability – especially for men and young workers...

As for employed workers, we find **reduced employment stability** (i.e. higher outflows from employment) during the recession, and a corresponding **increase in employment-to-unemployment transition rates**. Furthermore, for transitions from employment, our results show a differentiated impact for different socio-demographic groups: **Men are more negatively affected than women by the crisis** with respect to employment stability and employment-to-unemployment flows. Interestingly, this effect does not only seem to be due to men working in industries that were more strongly affected by the crisis, but also due to other factors. In addition, **employment-to-unemployment transitions increase significantly more for young workers** than for workers belonging to other age groups.

We observe the same trends for transitions out of **permanent employment** as for transitions out of employment in general, only that **the reactions to the crisis are smaller**, and that only flows into unemployment are significantly affected by the business cycle. For transitions out of permanent employment, we detect only few heterogeneous effects of the crisis. Most notably, the crisis decreases the probability of remaining in permanent employment most for the youngest age group and, even more so, for medium-skilled workers.

... and for workers on temporary contracts.

Flows out of **temporary employment** change similarly to those out of permanent employment, but **the effects of the business cycle are much larger**, and the impact on certain socio-demographic groups is much more differentiated. **Men are much more affected** by the crisis due to a higher increase in the transition probability from temporary employment to unemployment. Furthermore, the transitions from temporary employment into unemployment increase most for the youngest workers. In addition, the stepping-stone function of temporary work is most strongly reduced for high-skilled compared to any other skill group during the crisis.

Self-employment was not able to reduce unemployment...

With respect to transitions out of **self-employment**, we found **no strong effects of the economic crisis**. However, there is some evidence that persons who are self-employed are less likely to make a transition into dependent-status employment, and more likely to make a transition to unemployment, during the crisis. Within our analysis on heterogeneous effects, we did not find any notable differences concerning gender as well as age and skill groups. Furthermore, better business cycle conditions seem to have attracted self-employed persons to dependent-status employment before the economic crisis. During the economic crisis, we did not find evidence for this.

... the job-finding probability of the unemployed fell strongly...

As for transitions out of unemployment, we find **strong effects of the economic crisis** as well as differences between men and women. First of all, we do not find support for the hypothesis that the persistence in unemployment gets much stronger, which is probably due to the fact that we investigate the early phase of the Great Recession. Rather, we see some tendency that

formerly unemployed people make a transition into education and inactivity, the latter transition increasing particularly for women. Second, we find that **the probability to make a transition to employment decreases**. This is in particular the case for transitions into permanent employment. Third, we find that transitions from unemployment into temporary employment compared to permanent employment rose during the economic crisis. Concerning specific socio-demographic characteristics, we find strong gender effects. As expected, **men have been hit harder than women**: Their probability to remain unemployed is higher than for women, and they are less likely to get employed again during the economic crisis. Lastly, we did not find convincing evidence for heterogeneous effects concerning different skill and age groups.

... and many persons therefore stay in education longer.

Turning to flows out of education, we found that **the probability of remaining in education is higher in times of crisis**, because apparently individuals delay their entry into the labour market. Unsurprisingly, this mostly applies to the younger age groups.

Institutions matter...

In order to investigate the effects of institutions, we investigated how different labour market institutions are correlated with cross-country differences in reactions to the crisis. In doing so, we concentrated on transitions from employment to unemployment and vice-versa. While **for employment-to-unemployment transitions, we identified the degree of employment protection and union density as institutions likely to influence cross-country differences**, we detected only weak or no correlations of institutions for the unemployment-to-employment flows. When comparing country clusters however, institutions seem to matter for unemployment-to-employment transitions.

Comparing our results to the literature, **we confirm many of the existing findings**, such as the fact that men were hit harder by the crisis than women, which is also true for young workers compared to older workers. In addition, we provide an in-depth analysis of different labour market flows. For example, we find that flows from self-employment, and particularly from temporary employment to permanent employment strongly fell during the crisis, which implies that the stepping-stone function especially of temporary employment to “regular” employment was reduced to a great extent during the crisis. Furthermore, we provide evidence that labour market attachment fell during the crisis, as witnessed for example by increased flows from unemployment to inactivity.

During our analysis, several **methodological issues** arose which are worth discussing. The core of the empirical strategy of our study consists in the microeconomic (and also descriptive) analysis of labour market transitions using micro data from the EU-SILC and EU-LFS data set. This strategy seems to be particularly well-suited for addressing many of the issues of interest when examining the effects of the recent financial and economic recession. In particular, **labour market transitions can be precisely identified at an individual level**, which has two implications. First, it is possible to control for composition effects that could influence the effect of the recession in a country, and therefore have an impact on cross-country differences. For example, if a country’s population has much more low-skilled persons in its labour force than another country, the former country is likely to display higher outflows from employment during the recession. Second, and in a similar vein, one can obtain a clear picture about who suffered most during the recent downturn, i.e. which socio-demographic groups were most strongly hit.

A methodological question that is more difficult to answer with the micro-data based approach is which **business-cycle indicators** (e.g. GDP growth, output gap, housing prices) capture the effects of the recession best, and also which aspects of the labour market are most strongly influenced by which indicator. Here, we used a large number of indicators in our analysis, with limited success. The reason for this is twofold. First, the micro data sets used are extremely large, and the data structure becomes more complex the more variables are included. Second, the effect of the business cycle on labour market dynamics involves a complicated time structure – in particular, the labour market usually only reacts with a certain time lag – which, from a technical point of view, ideally would require including several time lags of specific business cycle indicators into the regression equations. For example, one would like to explain outflows from employment by GDP growth in the last quarter, two quarters ago, etc. Given the complexity of the data structure, this is often not feasible at all (technically, the algorithms used to compute the regression results do not converge), and extremely time-consuming at best. Therefore, we conclude from the analyses performed in our study, this question with respect to business cycle indicators is in all likelihood better addressed using time-series techniques on aggregate data, i.e. not using micro data. An intermediate solution would be to use data which has been aggregated from micro data at the group level (e.g. Schaffner 2011).

... but the effects of institutions are difficult to measure.

As a final methodological point, the investigation of institutions proved to be difficult during our analyses. Our **cluster analysis** provided us with country clusters sharing similar labour-market institutions. However, this kind of analysis is very sensitive to the variables selected for the formation of clusters, and the results are not very stable. Furthermore, despite the stringent methodology employed, institutional differences within country clusters remain. Therefore, instead of performing regressions at the country cluster level, we selected “representatives” from the country clusters, which yielded some interesting results.

Policy implications with respect to individuals...

Many of our findings are very relevant from a policy point of view. First, we find **strong heterogeneous effects**. For example, men and young workers are much more likely during the recession to make a transition from employment to unemployment. This is particularly worrying as there is evidence in the literature that a bad start of a person’s labour market career usually has long-lasting effects. This means that one might want to put these groups, and especially young workers, at the centre of economic policy-making.

... contract types ...

Second, different forms of employment were affected differently. Temporary employment, in particular, was reduced to a great extent, but flows out of self-employment increased, although to a smaller extent. At the same time, the stepping-stone function of these employment forms was greatly reduced. Therefore, apparently one could rely much less on this type of employment to give access to regular (permanent) employment. However, it is not clear whether this means that temporary employment and self-employment will play a less important role for labour markets in the future. The reason for this is that we also found that transitions from unemployment to temporary employment gained in importance during the crisis. Therefore, temporary employment may well be important for a build-up of overall employment in the aftermath of the crisis. This issue should be watched closely as the European labour markets recover from the recession.

... and institutions.

Third, labour market institutions seem to have played a role for the reaction of labour market transitions to the **crisis**. This role may be further increased during the **recovery**. Furthermore, it is conceivable that labour market institutions which increase **internal flexibility**, such as working-time accounts, played an important role during the crisis. This type of institutions is notoriously difficult to measure, however. Therefore, it may have played a role, although it is not possible to quantify its importance with the methodology used in our study.

Another aspect where labour market institutions did play an important role, however, is their contribution to the **structure of the labour market before the crisis**. This is particularly the case for the large build-up of temporary employment in some countries, which was a major factor for the reduction in employment in those countries during the crisis.

Appendix 1: Tables and figures

Table A.3.1

References for country-level data: business cycle indicators

Variable	Data source	Reference
Economic growth		
Turning point indicator	OECD	http://www.oecd.org/std/clits/oecdcompositeleadingindicatorsreferenceturningpointsandcomponentseries.htm (extracted: 24/05/2013)
GDP quarterly	Eurostat	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=namq_gdp_k&lang=en (extracted: 30/08/2013)
Output Gap	IMF – World Economic Outlook	http://www.imf.org/external/pubs/ft/weo/2013/01/weodata/index.aspx (extracted: 16/07/2013)
CPI	Eurostat	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=prc_hicp_aind&lang=de (extracted: 14/05/2013)
Components of GDP		
Private Consumption	Eurostat	http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do (extracted: 18/09/2013)
Investment	Eurostat	http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do (extracted: 18/09/2013)
Exports	Eurostat	http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do (extracted: 18/09/2013)
Imports	Eurostat	http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do (extracted: 18/09/2013)
Government Spending	Eurostat	http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do (extracted: 18/09/2013)
Government Debt	Eurostat	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=gov_dd_ggd&lang=de (extracted: 24/05/2013)
Government Deficit/Surplus	Eurostat	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=gov_dd_edpt1&lang=en (extracted: 28/05/2013)
Labour market		
Unemployment rate	Eurostat	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=une_rt_a&lang=de (extracted: 14/05/2013)
Long-term unemployment rate	Eurostat	http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tsdsc330 (extracted: 07/08/2013)
Youth unemployment rate	Eurostat	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=une_rt_a&lang=de (extracted: 09/08/2013)
Hours worked	Eurostat	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ifsa_ewhuis&lang=en (extracted: 07/08/2013)
Hourly real labor costs	Eurostat	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lc_an_costh&lang=en (extracted: 03/07/2013)
Hourly real labor productivity	Eurostat	http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=0&language=de&pcode=tsdec310 (extracted: 22/07/2013)
Financial sector		
Domestic credits	IMF – International Financial Statistics	http://data.worldbank.org/indicator/FS.AST.DOMS.GD.ZS (extracted: 22/07/2013)
Equity Prices	World Bank	http://wdi.worldbank.org/table/5.4 (extracted: 06/08/2013)
Interest Rates	Eurostat	http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do (extracted: 05/08/2013)
Exchange rates	Eurostat	http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database (extracted: 06/06/2013)
House price Index	Eurostat	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=prc_hpi_a&lang=en (extracted: 29/05/2013)

Source: Own compilation.

Table A.3.2

References for country-level data: labour market institutions

Variable	Data source	Reference
Active Labor Market Policies		
ALMP exp. total / GDP	Eurostat	http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/se_arch_database (Eurostat code: Imp_ind_exp; extracted: 22/5/2013)
ALMP exp.: measures / GDP	Eurostat	http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/se_arch_database (Eurostat code: Imp_ind_exp; extracted: 22/5/2013)
ALMP exp.: support / GDP	Eurostat	http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/se_arch_database (Eurostat code: Imp_ind_exp; extracted: 22/5/2013)
Child Care		
Child benefits p.c.	Eurostat	http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/se_arch_database (Eurostat code: spr_exp_ffa; extracted 1/8/2013)
Child benefits/GDP	Eurostat	http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/se_arch_database (Eurostat code: spr_exp_ffa; extracted 1/8/2013)
Childcare (<29h, <3y)	Eurostat	http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/se_arch_database (Eurostat code: ilc_caindformal; extracted 16/5/2013)
Childcare (<29h, 3-6y)	Eurostat	http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/se_arch_database (Eurostat code: ilc_caindformal; extracted 16/5/2013)
Childcare (>29h, <3y)	Eurostat	http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/se_arch_database (Eurostat code: ilc_caindformal; extracted 16/5/2013)
Childcare (>29h, 3-6y)	Eurostat	http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/se_arch_database (Eurostat code: ilc_caindformal; extracted 16/5/2013)
Income maint./GDP	Eurostat	http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/se_arch_database (Eurostat code: spr_exp_ffa; extracted 1/8/2013)
Parent. leave benef./GDP	Eurostat	http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/se_arch_database (Eurostat code: spr_exp_ffa; extracted 1/8/2013)
Employment Protection		
EP Collective dismissal	OECD	http://www.oecd.org/els/emp/EPL-timeseries.xlsx (extracted 1/8/2013)
EP regular employment	OECD	
EP temporary employment	OECD	
Inequality		
Gini coefficient	Eurostat	http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/se_arch_database (Eurostat code: tessi190; extracted 16/5/2013)
Inequality (20/80)	Eurostat	http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/se_arch_database (Eurostat code: tsdsc260; extracted 16/5/2013)
Social expenditures		
Exp. education / GDP	Eurostat	http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/se_arch_database (Eurostat code: educ_figdp; extracted: 16/5/2013)
Exp. social protection/GDP	Eurostat	http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/se_arch_database (Eurostat code: spr_exp_sum; extracted 22/5/2013)
Tax wedge and pension payments		
Pensions as share of GDP	Eurostat	http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/se_arch_database (Eurostat code: spr_exp_pens; extracted : 16/5/2013)
Tax wedge	Eurostat	http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/se_arch_database (Eurostat code: earn_nt_taxwedge; extracted : 16/5/2013)

Table A.3.2, continued

Variable	Data source	Reference
Unemployment protection		
Dur. of unemployment Insurance	OECD	http://www.oecd.org/els/soc/Unemployment%20benefits.xlsx (extracted: 3/6/2013)
Replacement rate (long-term)	OECD	http://www.oecd.org/els/soc/NRR_LongTerm_EN.xlsx (extracted 3/6/2103)
Replacement rate (short-term)	OECD	http://www.oecd.org/els/soc/NRR_Initial_EN.xlsx (extracted 3/6/2013)
Unions and wage setting institutions		
Bargaining Level	ICTWSS	
Coordination of wage-setting	ICTWSS	
National minimum wage setting	ICTWSS	
Opening clauses	ICTWSS	http://www.uva-aias.net/uploaded_files/regular/ICTWSSdatabase41.xlsx (extracted : 8/5/2013)
Social pact agreed	ICTWSS	
Social pact signed	ICTWSS	
Type of wagesetting	ICTWSS	
Union concentration (central level)	ICTWSS	
Union density (ICTWSS)	ICTWSS	
Population		
Fertility	Eurostat	http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/se_arch_database (Eurostat code: tsdde220; extracted: 6/5/2013)
Population growth	Eurostat	http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/se_arch_database (Eurostat code: tps00006; extracted 6/5/2013)

Source: Own compilation.

Table A.5.1
Yearly Markov transition matrix for all countries, different labour market states states
 Before and during the crisis

ORIGIN	Pre-crisis				During the crisis			
	Perm Employment	Temp Employment	Self-employment	Un-employment	Perm Employment	Temp Employment	Self-employment	Un-employment
AT								
Perm Employment	87.9	3.0	1.4	2.8	86.8	3.5	1.4	3.2
Temp employment	49.0	32.7	1.6	6.4	43.9	31.4	1.1	12.9
Selfemployment	9.0	0.8	82.6	0.9	10.4	1.8	79.0	1.5
Unemployment	28.0	7.0	2.0	43.8	24.4	7.6	1.9	47.1
Education	11.2	3.8	1.3	1.5	9.1	5.4	1.0	3.1
Inactivity	7.3	0.7	1.2	1.8	6.6	1.8	1.7	3.5
Total	52.1	3.6	7.7	4.4	51.3	4.3	7.8	5.8
BE								
Perm Employment	92.9	2.0	0.8	1.5	93.0	2.2	0.6	1.7
Temp employment	38.6	46.1	2.4	7.6	36.6	42.0	1.8	12.9
Selfemployment	4.3	1.6	90.2	0.9	6.9	1.0	88.2	0.5
Unemployment	11.0	10.8	1.2	67.4	9.9	8.4	1.3	67.1
Education	3.7	5.3	0.4	4.0	3.5	5.1	0.6	4.2
Inactivity	2.8	1.4	0.9	2.7	3.0	1.0	1.8	2.6
Total	49.7	5.3	7.0	7.7	50.6	4.8	6.6	7.6
BG								
Perm Employment	87.3	1.9	3.4	4.4	89.8	0.6	2.5	4.7
Temp employment	48.7	22.7	3.9	14.4	37.1	31.8	2.1	21.0
Selfemployment	13.0	1.2	77.0	5.9	12.8	1.3	82.0	2.0
Unemployment	16.6	7.7	8.2	51.8	10.5	3.6	2.5	73.8
Education	11.5	1.8	0.7	7.9	4.8	1.8	0.2	9.9
Inactivity	6.5	1.2	1.8	4.2	5.3	0.6	0.9	1.7
Total	49.6	3.6	8.2	12.1	50.8	2.1	8.4	13.4
CY								
Perm Employment	91.5	2.6	1.0	2.7	91.6	2.5	0.5	3.3
Temp employment	28.5	60.7	2.3	4.8	23.3	61.8	2.9	8.2
Selfemployment	8.7	1.5	83.6	1.8	6.0	1.4	87.4	2.2
Unemployment	33.0	11.7	8.4	27.8	34.2	7.0	7.0	41.8
Education	6.0	4.5	0.3	2.6	7.2	3.1	0.3	5.1
Inactivity	4.3	1.4	1.6	1.9	2.6	2.1	1.4	1.8
Total	49.8	6.1	9.1	3.3	49.1	6.3	8.8	4.9

Table A.5.1, continued

ORIGIN	Pre-crisis				During the crisis				
	Perm Employment	Temp Employment	Self-employment	Un-employment	Perm Employment	Temp Employment	Self-employment	Un-employment	
CZ									
Perm Employment	90.1	3.8	0.9	1.6	89.1	3.1	1.1	3.0	0.1
Temp employment	36.6	49.0	1.2	5.2	38.2	41.5	2.1	6.5	0.6
Selfemployment	4.9	1.9	88.5	1.6	2.3	0.7	92.9	0.7	3.1
Unemployment	16.1	15.6	1.6	53.0	12.5	13.0	2.7	57.5	1.6
Education	6.9	4.8	0.6	3.8	4.6	4.7	0.5	5.1	84.6
Inactivity	2.8	2.5	0.8	1.7	4.2	2.2	0.7	2.8	0.3
Total	46.6	7.6	9.2	6.1	45.9	5.8	10.2	6.4	9.6
EE									
Perm Employment	92.1	0.8	1.0	2.3	85.0	0.7	1.6	8.3	0.5
Temp employment	59.5	13.9	2.4	9.3	26.3	22.9	0.0	18.6	15.8
Selfemployment	14.3	1.1	78.3	1.9	15.7	0.1	73.4	4.5	0.2
Unemployment	32.7	4.1	3.3	45.8	21.6	6.0	0.3	56.9	2.2
Education	13.5	1.3	0.3	2.8	9.1	3.0	1.0	6.2	76.0
Inactivity	9.8	1.0	1.2	2.1	10.4	0.7	0.7	4.8	1.7
Total	57.8	1.4	5.0	4.8	57.2	1.5	4.5	10.6	9.3
ES									
Perm Employment	86.3	5.6	2.1	3.0	88.7	2.3	1.1	5.7	0.2
Temp employment	26.0	53.0	2.1	12.5	17.1	51.8	1.6	25.2	2.1
Selfemployment	5.7	2.7	84.3	2.0	3.1	1.8	86.5	4.6	0.1
Unemployment	8.4	25.1	3.5	41.1	6.2	18.1	3.0	60.9	2.4
Education	3.4	11.5	0.8	5.4	1.8	8.8	0.7	8.8	78.1
Inactivity	2.4	4.3	2.0	5.9	1.6	1.8	1.4	7.4	2.3
Total	36.1	13.6	11.0	8.2	41.0	10.7	11.7	14.5	7.7
FI									
Perm Employment	89.8	1.2	1.7	1.7	86.9	2.2	0.9	3.5	1.8
Temp employment	17.9	54.6	1.7	10.1	43.0	31.1	0.5	10.6	10.6
Selfemployment	1.9	0.5	91.9	0.7	2.3	0.2	89.8	1.0	0.8
Unemployment	6.2	11.6	2.9	56.1	10.5	5.5	0.9	58.8	6.4
Education	6.0	8.1	1.3	4.8	5.8	5.0	0.5	5.9	75.2
Inactivity	4.4	1.7	4.0	3.0	4.4	0.8	1.4	3.8	2.0
Total	28.4	5.5	24.6	6.5	40.9	4.4	11.1	8.1	11.8

Table A.5.1, continued

ORIGIN	Pre-crisis					During the crisis																																																																																																																																																																																																																																																																																																																																																																																																																									
	Perm Employment	Temp Employment	Self-employment	Un-employment	Education	Inactivity	Perm Employment	Temp Employment	Self-employment	Un-employment	Education	Inactivity																																																																																																																																																																																																																																																																																																																																																																																																																			
FR													Perm Employment	93.3	1.4	0.3	2.1	0.1	2.8	92.4	1.2	0.4	3.1	0.1	2.8	Temp employment	13.5	70.0	0.6	11.7	1.9	2.3	11.9	70.4	0.8	13.5	1.6	1.8	Selfemployment	2.3	0.9	91.9	1.3	0.0	3.7	2.0	1.5	92.1	2.0	0.0	2.9	Unemployment	11.4	16.7	2.7	60.2	1.4	7.5	10.8	17.3	2.3	60.0	2.0	7.7	Education	6.7	8.0	0.2	3.6	80.3	1.2	6.6	8.3	3.9	79.9	1.0	1.0	Inactivity	1.9	1.1	0.2	0.8	0.3	95.7	1.6	1.2	0.2	0.9	0.3	95.9	Total	47.1	8.8	6.1	7.0	8.0	23.0	46.8	9.3	5.9	7.6	7.5	22.9	GR													Perm Employment	87.3	5.3	1.7	2.5	0.2	2.9	87.6	4.5	1.3	4.1	0.1	2.5	Temp employment	25.0	55.2	4.9	9.0	1.5	4.3	18.9	60.8	3.3	12.7	0.9	3.3	Selfemployment	2.9	1.7	89.3	1.2	0.1	4.8	1.3	1.2	91.5	2.1	0.1	3.8	Unemployment	12.2	16.4	5.9	50.6	2.9	11.9	8.0	11.8	6.0	60.1	2.7	11.5	Education	3.8	5.2	1.7	5.3	78.2	5.7	1.9	3.3	6.9	81.2	5.2	5.2	Inactivity	1.7	1.9	3.3	2.5	0.7	90.0	1.0	1.6	2.3	3.1	1.1	90.9	Total	29.8	9.0	22.0	6.3	8.0	24.9	29.7	8.8	21.4	8.2	8.3	23.6	HU													Perm Employment	84.0	4.7	2.0	3.2	0.3	5.7	83.0	3.1	4.1	4.6	0.1	5.0	Temp employment	50.2	26.8	1.8	10.5	0.6	10.0	45.2	25.3	4.6	14.8	1.2	8.9	Selfemployment	18.1	2.1	68.9	2.2	0.2	8.6	13.9	1.7	74.0	3.5	0.0	6.9	Unemployment	24.4	12.2	1.8	42.5	1.4	17.5	18.3	13.7	2.8	49.5	0.5	15.2	Education	7.5	2.6	0.4	3.0	81.6	4.8	6.2	2.2	5.7	79.1	6.2	6.2	Inactivity	4.2	1.6	0.9	1.8	0.5	91.0	4.6	1.5	1.3	3.2	0.6	88.9	Total	44.4	5.0	6.6	5.8	8.9	29.2	41.9	4.2	7.8	7.9	8.9	29.3	IE													Perm Employment	90.3	2.1	1.5	2.1	1.1	2.9	84.4	2.1	1.3	7.3	0.7	4.1	Temp employment	43.1	35.4	1.7	6.6	7.1	6.1	26.7	39.7	1.6	15.1	11.5	5.5	Selfemployment	4.2	0.5	90.5	1.1	0.5	3.2	6.3	0.3	86.1	4.5	0.0	2.8	Unemployment	16.4	6.1	2.5	51.0	3.9	20.1	11.5	3.0	2.7	54.9	8.7	19.2	Education	11.2	7.4	0.3	4.1	71.3	5.6	7.4	5.2	8.0	71.1	7.5	7.5	Inactivity	4.1	2.0	1.4	2.9	1.6	88.0	2.7	1.6	0.7	5.0	0.8	89.2	Total	46.5	3.8	10.6	5.2	8.4	25.5	41.0	3.7	10.0	9.6	9.1	26.6
Perm Employment	93.3	1.4	0.3	2.1	0.1	2.8	92.4	1.2	0.4	3.1	0.1	2.8																																																																																																																																																																																																																																																																																																																																																																																																																			
Temp employment	13.5	70.0	0.6	11.7	1.9	2.3	11.9	70.4	0.8	13.5	1.6	1.8																																																																																																																																																																																																																																																																																																																																																																																																																			
Selfemployment	2.3	0.9	91.9	1.3	0.0	3.7	2.0	1.5	92.1	2.0	0.0	2.9																																																																																																																																																																																																																																																																																																																																																																																																																			
Unemployment	11.4	16.7	2.7	60.2	1.4	7.5	10.8	17.3	2.3	60.0	2.0	7.7																																																																																																																																																																																																																																																																																																																																																																																																																			
Education	6.7	8.0	0.2	3.6	80.3	1.2	6.6	8.3	3.9	79.9	1.0	1.0																																																																																																																																																																																																																																																																																																																																																																																																																			
Inactivity	1.9	1.1	0.2	0.8	0.3	95.7	1.6	1.2	0.2	0.9	0.3	95.9																																																																																																																																																																																																																																																																																																																																																																																																																			
Total	47.1	8.8	6.1	7.0	8.0	23.0	46.8	9.3	5.9	7.6	7.5	22.9																																																																																																																																																																																																																																																																																																																																																																																																																			
GR																																																																																																																																																																																																																																																																																																																																																																																																																															
Perm Employment	87.3	5.3	1.7	2.5	0.2	2.9	87.6	4.5	1.3	4.1	0.1	2.5																																																																																																																																																																																																																																																																																																																																																																																																																			
Temp employment	25.0	55.2	4.9	9.0	1.5	4.3	18.9	60.8	3.3	12.7	0.9	3.3																																																																																																																																																																																																																																																																																																																																																																																																																			
Selfemployment	2.9	1.7	89.3	1.2	0.1	4.8	1.3	1.2	91.5	2.1	0.1	3.8																																																																																																																																																																																																																																																																																																																																																																																																																			
Unemployment	12.2	16.4	5.9	50.6	2.9	11.9	8.0	11.8	6.0	60.1	2.7	11.5																																																																																																																																																																																																																																																																																																																																																																																																																			
Education	3.8	5.2	1.7	5.3	78.2	5.7	1.9	3.3	6.9	81.2	5.2	5.2																																																																																																																																																																																																																																																																																																																																																																																																																			
Inactivity	1.7	1.9	3.3	2.5	0.7	90.0	1.0	1.6	2.3	3.1	1.1	90.9																																																																																																																																																																																																																																																																																																																																																																																																																			
Total	29.8	9.0	22.0	6.3	8.0	24.9	29.7	8.8	21.4	8.2	8.3	23.6																																																																																																																																																																																																																																																																																																																																																																																																																			
HU																																																																																																																																																																																																																																																																																																																																																																																																																															
Perm Employment	84.0	4.7	2.0	3.2	0.3	5.7	83.0	3.1	4.1	4.6	0.1	5.0																																																																																																																																																																																																																																																																																																																																																																																																																			
Temp employment	50.2	26.8	1.8	10.5	0.6	10.0	45.2	25.3	4.6	14.8	1.2	8.9																																																																																																																																																																																																																																																																																																																																																																																																																			
Selfemployment	18.1	2.1	68.9	2.2	0.2	8.6	13.9	1.7	74.0	3.5	0.0	6.9																																																																																																																																																																																																																																																																																																																																																																																																																			
Unemployment	24.4	12.2	1.8	42.5	1.4	17.5	18.3	13.7	2.8	49.5	0.5	15.2																																																																																																																																																																																																																																																																																																																																																																																																																			
Education	7.5	2.6	0.4	3.0	81.6	4.8	6.2	2.2	5.7	79.1	6.2	6.2																																																																																																																																																																																																																																																																																																																																																																																																																			
Inactivity	4.2	1.6	0.9	1.8	0.5	91.0	4.6	1.5	1.3	3.2	0.6	88.9																																																																																																																																																																																																																																																																																																																																																																																																																			
Total	44.4	5.0	6.6	5.8	8.9	29.2	41.9	4.2	7.8	7.9	8.9	29.3																																																																																																																																																																																																																																																																																																																																																																																																																			
IE																																																																																																																																																																																																																																																																																																																																																																																																																															
Perm Employment	90.3	2.1	1.5	2.1	1.1	2.9	84.4	2.1	1.3	7.3	0.7	4.1																																																																																																																																																																																																																																																																																																																																																																																																																			
Temp employment	43.1	35.4	1.7	6.6	7.1	6.1	26.7	39.7	1.6	15.1	11.5	5.5																																																																																																																																																																																																																																																																																																																																																																																																																			
Selfemployment	4.2	0.5	90.5	1.1	0.5	3.2	6.3	0.3	86.1	4.5	0.0	2.8																																																																																																																																																																																																																																																																																																																																																																																																																			
Unemployment	16.4	6.1	2.5	51.0	3.9	20.1	11.5	3.0	2.7	54.9	8.7	19.2																																																																																																																																																																																																																																																																																																																																																																																																																			
Education	11.2	7.4	0.3	4.1	71.3	5.6	7.4	5.2	8.0	71.1	7.5	7.5																																																																																																																																																																																																																																																																																																																																																																																																																			
Inactivity	4.1	2.0	1.4	2.9	1.6	88.0	2.7	1.6	0.7	5.0	0.8	89.2																																																																																																																																																																																																																																																																																																																																																																																																																			
Total	46.5	3.8	10.6	5.2	8.4	25.5	41.0	3.7	10.0	9.6	9.1	26.6																																																																																																																																																																																																																																																																																																																																																																																																																			

Table A.5.1, continued

ORIGIN	Pre-crisis					During the crisis						
	Perm Employment	Temp Employment	Self-employment	Un-employment	Education	Inactivity	Perm Employment	Temp Employment	Self-employment	Un-employment	Education	Inactivity
IS												
Perm Employment	87.7	2.4	1.8	1.7	3.0	3.4	84.4	3.9	2.4	1.7	2.4	5.1
Temp employment	33.3	46.3	1.9	1.9	10.5	6.1	53.2	27.3	3.7	4.8	5.1	6.0
Selfemployment	4.6	1.1	87.0	1.9	0.9	4.5	7.9	0.9	78.8	4.2	3.5	4.7
Unemployment	32.9	11.7	6.9	15.5	9.9	23.2	20.2	10.8	10.1	41.6	11.7	5.6
Education	9.9	4.2	1.1	1.2	80.6	2.9	7.3	3.6	0.7	4.5	80.9	3.1
Inactivity	10.3	4.2	4.9	2.9	4.8	73.0	15.5	1.5	5.3	5.2	2.4	70.0
Total	49.8	5.1	15.2	2.0	16.8	11.2	46.7	4.5	12.6	5.5	18.9	11.7
IT												
Perm Employment	89.2	3.1	2.3	1.6	0.3	3.6	89.8	2.5	1.9	1.9	0.3	3.6
Temp employment	28.9	51.9	4.5	7.8	1.3	5.6	26.6	51.3	4.0	10.4	1.6	6.1
Selfemployment	4.6	1.5	86.5	2.3	0.3	4.9	3.4	1.6	87.0	2.4	0.5	5.1
Unemployment	9.2	8.7	4.7	57.0	3.0	17.4	7.5	11.2	5.0	54.3	4.8	17.2
Education	2.3	4.0	1.6	7.6	81.2	3.3	2.5	3.1	1.6	9.3	79.6	3.8
Inactivity	2.9	1.4	2.3	3.4	0.5	89.5	2.9	1.4	2.4	4.8	0.7	87.7
Total	36.3	5.6	14.8	7.0	7.4	28.9	37.0	5.7	14.6	7.6	8.3	26.7
LT												
Perm Employment	91.5	2.4	1.2	2.6	0.2	2.1	89.6	0.7	0.7	6.2	0.4	2.5
Temp employment	45.3	31.0	4.3	11.7	2.0	5.7	57.2	19.4	1.7	16.8	2.8	2.2
Selfemployment	8.8	3.4	74.8	4.2	0.6	8.2	5.9	0.2	86.1	4.2	0.0	3.5
Unemployment	21.6	10.1	4.8	47.0	1.7	14.8	16.5	3.6	1.5	67.3	1.9	9.2
Education	12.1	3.2	0.9	2.1	79.7	2.0	7.6	0.3	0.3	6.0	84.7	1.1
Inactivity	7.1	2.2	1.9	2.1	0.7	85.9	3.3	0.0	1.2	4.4	0.2	90.8
Total	55.4	4.4	6.9	6.0	10.1	17.2	55.0	1.0	6.9	10.7	10.5	15.8
LU												
Perm Employment	93.7	1.6	0.4	1.4	0.1	2.8	93.0	1.2	0.3	2.1	0.1	3.3
Temp employment	42.7	41.8	0.4	10.6	2.3	2.2	33.2	48.9	1.0	13.9	1.4	1.8
Selfemployment	5.5	0.6	88.2	1.1	0.0	4.7	5.6	0.2	89.8	0.2	0.6	3.6
Unemployment	24.2	20.3	1.2	42.9	1.1	10.3	17.3	17.9	0.5	49.8	0.3	14.2
Education	3.9	6.6	0.3	1.9	86.3	1.1	3.5	6.0	0.0	4.1	83.7	2.7
Inactivity	1.7	1.3	0.8	0.6	0.4	95.2	2.8	1.7	0.7	1.2	0.4	93.2
Total	54.8	4.6	4.1	3.0	9.6	23.9	54.7	4.6	4.5	4.4	8.2	23.6

Table A.5.1, continued

ORIGIN	Pre-crisis				During the crisis															
	Perm Employment	Temp Employment	Self-employment	Un-employment	Perm Employment	Temp Employment	Self-employment	Un-employment												
LV																				
Perm Employment	88.0	2.1	2.3	3.8	0.3	3.6	80.3	1.5	2.2	10.3	0.4	5.2								
Temp employment	54.4	24.0	3.0	9.4	4.3	4.9	40.3	17.0	5.1	22.4	4.2	11.1								
Selfemployment	24.3	3.2	61.0	3.8	0.2	7.5	19.8	1.1	59.8	11.0	0.1	8.1								
Unemployment	32.2	11.3	4.5	32.8	1.4	17.8	19.2	5.8	2.6	54.8	3.9	13.7								
Education	16.2	4.4	0.4	5.0	71.4	2.6	9.1	2.5	0.8	10.2	71.3	6.2								
Inactivity	11.5	1.4	2.4	5.0	1.0	78.6	11.8	1.9	2.1	9.5	2.2	72.4								
Total	59.6	4.0	5.6	6.4	7.5	16.7	51.9	2.4	5.5	15.4	8.0	16.8								
NL																				
Perm Employment	92.8	2.6	0.8	0.7	0.5	2.6	92.1	3.0	0.8	1.1	0.4	2.6								
Temp employment	25.0	63.9	2.4	1.9	3.8	3.1	22.8	65.3	1.3	3.0	2.4	5.1								
Selfemployment	1.1	0.9	94.3	0.3	0.3	3.1	1.0	0.8	94.4	0.2	0.9	2.7								
Unemployment	9.7	18.2	2.8	30.7	5.5	33.0	12.1	16.7	9.4	23.9	5.5	32.4								
Education	7.0	5.6	1.6	1.6	79.0	5.2	4.0	4.1	1.4	3.4	84.0	3.2								
Inactivity	4.0	2.0	1.8	1.9	0.9	89.5	1.5	1.2	1.7	2.1	1.1	92.3								
Total	39.9	6.7	11.3	1.9	10.9	29.2	39.1	6.7	13.0	2.1	12.0	27.1								
NO																				
Perm Employment	90.8	2.7	1.2	1.1	1.5	2.8	89.7	2.2	1.7	1.2	2.3	3.0								
Temp employment	44.8	36.3	2.8	4.6	6.6	4.9	46.7	34.8	0.4	5.3	7.8	5.0								
Selfemployment	9.9	1.3	84.1	1.3	0.7	2.6	11.1	1.7	79.9	2.3	0.4	4.6								
Unemployment	24.2	13.9	2.3	29.5	10.4	19.7	18.2	11.2	6.0	32.9	16.4	15.3								
Education	9.2	8.5	1.1	2.3	74.6	4.4	7.4	5.1	0.6	3.3	81.1	2.5								
Inactivity	5.3	2.1	1.3	2.9	2.8	85.7	4.4	1.7	1.8	2.5	5.4	84.1								
Total	52.3	5.5	7.9	2.6	12.4	19.3	54.2	4.0	7.6	2.8	13.9	17.5								
PL																				
Perm Employment	88.9	4.8	1.1	1.7	0.1	3.5	88.5	5.0	1.1	2.5	0.1	2.8								
Temp employment	28.5	55.7	1.8	8.6	1.0	4.4	25.8	57.9	2.1	8.9	0.7	4.6								
Selfemployment	2.3	2.7	88.1	2.0	0.3	4.7	2.1	1.8	91.3	1.2	0.1	3.5								
Unemployment	6.0	21.6	3.8	51.8	1.7	15.1	6.1	20.0	5.2	47.7	0.4	20.7								
Education	2.4	10.0	1.1	5.6	78.0	2.9	2.2	8.1	1.7	5.4	79.9	2.7								
Inactivity	1.6	3.0	1.9	3.7	0.6	89.2	2.0	3.3	2.3	2.6	0.4	89.3								
Total	32.1	12.4	11.2	9.0	9.3	26.0	35.2	11.7	13.2	6.0	8.3	25.5								

Table A.5.1, continued

ORIGIN	Pre-crisis				During the crisis			
	Perm Employment	Temp Employment	Self-employment	Un-employment	Perm Employment	Temp Employment	Self-employment	Un-employment
PT								
Perm Employment	90.7	2.9	0.9	2.8	88.9	3.8	1.4	4.0
Temp employment	18.6	65.3	2.0	11.3	27.1	55.0	2.9	11.9
Selfemployment	4.1	3.4	86.8	1.3	6.8	4.0	75.8	3.1
Unemployment	5.5	20.6	5.9	56.1	6.5	23.0	5.0	53.3
Education	2.8	9.4	0.9	4.6	0.7	5.5	0.2	8.3
Inactivity	1.4	2.1	2.3	2.9	1.0	2.2	2.8	2.7
Total	41.8	11.1	13.0	7.9	44.4	10.3	10.1	8.8
SE								
Perm Employment	89.7	3.1	1.3	1.7	90.8	2.9	1.0	1.7
Temp employment	55.1	24.8	2.1	6.3	41.8	37.0	1.3	9.8
Selfemployment	5.6	1.1	87.5	1.3	5.4	1.0	87.5	1.8
Unemployment	16.7	11.9	4.5	39.2	9.8	15.1	2.7	47.8
Education	8.7	6.1	0.8	8.7	6.3	7.2	0.9	11.5
Inactivity	4.2	2.0	1.8	3.4	2.8	1.7	1.5	3.1
Total	50.0	4.7	10.2	5.2	51.0	5.8	9.6	6.2
SI								
Perm Employment	90.6	3.8	2.2	1.5	88.5	3.7	2.4	3.2
Temp employment	40.0	45.0	1.9	11.1	36.9	45.0	2.0	13.7
Selfemployment	10.2	2.0	76.8	4.7	8.5	1.4	77.2	6.3
Unemployment	3.2	6.4	2.8	67.0	2.9	6.0	4.1	67.0
Education	0.9	1.8	0.5	6.3	0.8	1.9	0.9	5.3
Inactivity	0.3	0.3	0.9	4.9	0.2	0.2	1.1	5.0
Total	29.4	4.3	6.1	11.8	29.7	4.1	7.5	11.1
SK								
Perm Employment	87.9	6.1	1.4	1.8	89.5	3.5	1.1	2.9
Temp employment	56.1	31.7	1.7	4.7	42.4	40.4	2.2	9.1
Selfemployment	9.1	2.3	84.4	1.5	6.4	1.0	88.5	2.2
Unemployment	23.9	7.7	2.7	52.7	12.6	11.3	3.0	62.7
Education	7.9	2.8	0.5	4.7	4.5	3.5	0.5	5.5
Inactivity	4.6	1.2	0.5	2.5	2.7	1.4	0.2	1.9
Total	50.8	6.4	6.1	6.4	50.5	5.8	6.7	7.1

Source: EU-SILC, own calculations.

Table A.5.2
Yearly Markov transition matrix for selected countries, detailed different labour market states
 Before and during the crisis

ORIGIN	Pre-crisis				During the crisis							
	Employment	Self-employment	Un-employment	Education	Inactivity	Employment	Self-employment	Un-employment	Education	Inactivity		
AT												
Employment	90.2	1.5	3.0	0.6	4.7	89.0	1.4	3.8	0.9	4.8		
Selfemployment	10.3	82.1	0.9	0.2	6.6	12.3	78.8	1.5	0.2	7.2		
Unemployment	35.3	2.0	43.5	1.1	18.0	32.4	1.9	46.9	3.3	15.5		
Education	15.6	1.3	1.4	76.4	5.3	16.4	0.9	3.0	74.8	4.8		
Inactivity	8.1	1.2	1.8	0.7	88.2	8.5	1.7	3.5	1.1	85.3		
Total	56.0	7.7	4.4	5.9	26.1	56.4	7.6	5.8	6.9	23.3		
BE												
Employment	93.8	0.9	2.1	0.3	2.9	93.5	0.8	2.8	0.4	2.5		
Selfemployment	5.9	90.1	0.9	0.0	3.1	9.0	87.2	0.5	0.0	3.3		
Unemployment	21.8	1.2	67.4	1.1	8.4	18.3	1.3	67.1	0.4	13.0		
Education	9.1	0.4	4.0	83.7	2.9	8.6	0.6	4.2	84.0	2.5		
Inactivity	4.2	0.9	2.7	0.5	91.7	4.0	1.8	2.6	0.6	91.0		
Total	55.0	7.0	7.7	8.8	21.4	55.5	6.6	7.6	8.9	21.4		
BG												
Employment	86.8	3.8	5.7	0.6	3.1	88.7	2.6	5.9	0.2	2.6		
Selfemployment	17.8	73.8	5.6	0.4	2.3	18.6	77.8	1.9	0.0	1.8		
Unemployment	31.4	7.4	46.9	0.7	13.5	17.3	2.4	71.0	1.0	8.3		
Education	14.5	0.7	7.8	73.9	3.2	7.9	0.2	9.8	79.6	2.5		
Inactivity	8.8	1.8	4.2	0.9	84.4	7.0	0.9	1.7	0.6	89.8		
Total	55.3	8.0	11.8	5.7	19.3	54.7	8.1	13.0	6.7	17.4		
CY												
Employment	93.5	1.1	2.9	0.3	2.1	93.1	0.8	3.8	0.2	2.0		
Selfemployment	10.2	83.6	1.8	0.0	4.4	7.4	87.4	2.2	0.0	3.1		
Unemployment	44.6	8.4	27.8	2.0	17.2	41.1	7.0	41.8	2.3	7.7		
Education	10.4	0.3	2.6	78.7	7.9	10.3	0.3	5.1	75.6	8.7		
Inactivity	5.7	1.6	1.9	4.1	86.6	4.7	1.4	1.8	3.4	88.7		
Total	55.9	9.1	3.3	11.4	20.3	55.5	8.8	4.9	11.3	19.5		

Table A.5.2, continued

ORIGIN	Pre-crisis			During the crisis		
	Employment	Self-employment	Un-employment	Employment	Self-employment	Un-employment
CZ	Employment	92.7	2.1	90.7	1.2	3.4
	Selfemployment	6.8	1.6	3.0	92.9	0.7
	Unemployment	31.8	53.0	12.8	2.7	57.5
	Education	11.8	3.8	0.4	9.3	5.1
	Inactivity	5.3	1.7	92.1	0.7	2.8
	Total	54.3	9.2	22.0	51.8	6.4
	DK	Employment	91.9	1.7	94.0	0.8
Selfemployment	13.1	1.3	4.3	88.3	0.6	0.6
Unemployment	42.7	32.3	20.3	28.3	0.6	59.8
Education	21.4	0.3	72.9	17.5	0.3	1.9
Inactivity	7.4	1.3	87.3	3.0	0.3	1.9
Total	65.2	4.6	10.5	65.4	5.1	4.4
EE	Employment	92.2	2.6	84.7	1.7	8.5
	Selfemployment	17.9	1.7	16.4	72.9	4.5
	Unemployment	37.3	47.4	11.2	0.3	55.6
	Education	16.4	2.9	3.9	1.0	6.2
	Inactivity	11.1	1.8	85.4	0.7	4.7
	Total	64.2	4.6	17.2	58.7	10.7
	ES	Employment	88.9	5.7	85.8	1.3
Selfemployment	8.8	2.4	4.4	86.1	4.6	4.6
Unemployment	34.0	41.8	17.4	2.9	60.0	
Education	16.2	1.1	73.2	0.7	8.8	
Inactivity	6.7	1.9	83.8	1.4	7.4	
Total	54.0	11.3	19.0	51.9	11.6	
	Employment	92.7	2.1	90.7	1.2	3.4
	Selfemployment	6.8	1.6	3.0	92.9	0.7
	Unemployment	31.8	53.0	12.8	2.7	57.5
	Education	11.8	3.8	0.4	9.3	5.1
	Inactivity	5.3	1.7	92.1	0.7	2.8
	Total	54.3	9.2	22.0	51.8	6.4
	DK	Employment	91.9	1.7	94.0	0.8
Selfemployment	13.1	1.3	4.3	88.3	0.6	0.6
Unemployment	42.7	32.3	20.3	28.3	0.6	59.8
Education	21.4	0.3	72.9	17.5	0.3	1.9
Inactivity	7.4	1.3	87.3	3.0	0.3	1.9
Total	65.2	4.6	10.5	65.4	5.1	4.4
	Employment	92.2	2.6	84.7	1.7	8.5
	Selfemployment	17.9	1.7	16.4	72.9	4.5
	Unemployment	37.3	47.4	11.2	0.3	55.6
	Education	16.4	2.9	3.9	1.0	6.2
	Inactivity	11.1	1.8	85.4	0.7	4.7
	Total	64.2	4.6	17.2	58.7	10.7
	ES	Employment	88.9	5.7	85.8	1.3
Selfemployment	8.8	2.4	4.4	86.1	4.6	4.6
Unemployment	34.0	41.8	17.4	2.9	60.0	
Education	16.2	1.1	73.2	0.7	8.8	
Inactivity	6.7	1.9	83.8	1.4	7.4	
Total	54.0	11.3	19.0	51.9	11.6	

Table A.5.2, continued

ORIGIN	Employment			Pre-crisis			During the crisis		
	Employment	Self-employment	Unemployment	Employment	Self-employment	Unemployment	Employment	Self-employment	Unemployment
FI									
Employment	88.9	1.5	3.0	2.1	4.6	86.9	0.8	4.7	2.8
Selfemployment	7.3	86.3	1.1	0.6	4.8	4.5	88.0	0.9	0.8
Unemployment	28.2	1.8	52.7	5.0	12.3	23.2	0.9	53.7	5.9
Education	27.9	0.9	5.1	59.8	6.3	17.2	0.5	5.4	69.8
Inactivity	11.4	2.0	3.2	2.5	81.0	10.5	1.3	3.6	1.9
Total	57.5	9.4	6.7	8.5	18.0	57.0	8.3	7.1	9.2
FR									
Employment	93.0	0.5	3.4	0.4	2.6	91.6	0.6	4.8	0.3
Selfemployment	4.5	90.6	1.2	0.0	3.6	4.9	90.7	1.5	0.0
Unemployment	28.2	2.7	60.1	1.4	7.5	28.6	2.3	59.6	2.0
Education	14.8	0.2	3.6	80.2	1.2	15.0	0.3	3.9	79.8
Inactivity	3.0	0.2	0.8	0.3	95.6	2.8	0.2	0.9	0.3
Total	57.1	6.0	6.8	7.8	22.3	57.1	5.8	7.5	7.3
GR									
Employment	89.7	2.5	4.0	0.5	3.3	89.4	1.7	5.9	0.3
Selfemployment	4.6	89.3	1.2	0.1	4.8	2.9	91.1	2.1	0.1
Unemployment	28.7	5.9	50.6	2.9	11.9	22.4	5.8	58.1	2.6
Education	9.0	1.7	5.3	78.2	5.7	6.8	1.5	6.8	79.9
Inactivity	3.5	3.3	2.5	0.7	90.0	3.1	2.3	3.1	1.1
Total	38.8	22.0	6.3	8.0	24.9	39.9	20.9	8.0	8.1
HU									
Employment	87.3	2.0	4.0	0.3	6.3	84.1	4.2	6.0	0.2
Selfemployment	20.4	68.6	2.2	0.2	8.6	16.4	73.3	3.5	0.0
Unemployment	39.3	1.7	40.8	1.4	16.8	33.5	2.7	48.4	0.5
Education	10.6	0.4	3.0	81.2	4.8	8.7	0.6	5.7	78.8
Inactivity	6.1	0.9	1.8	0.5	90.6	6.5	1.3	3.2	0.6
Total	50.0	6.5	5.9	8.8	28.8	46.8	7.7	8.0	8.7

Table A.5.2, continued

ORIGIN	Pre-crisis				During the crisis					
	Employment	Self-employment	Un-employment	Education	Inactivity	Employment	Self-employment	Un-employment	Education	Inactivity
IE										
Employment	90.7	1.7	2.4	1.7	3.4	84.3	1.4	8.1	2.0	4.3
Selfemployment	5.5	89.8	1.1	0.5	3.1	7.3	85.4	4.5	0.0	2.8
Unemployment	23.6	2.5	50.3	3.8	19.8	16.0	2.7	53.9	8.5	18.9
Education	23.2	0.3	3.9	67.3	5.3	15.5	0.8	7.7	68.7	7.3
Inactivity	6.8	1.4	2.9	1.6	87.3	4.9	0.7	5.0	0.8	88.6
Total	51.5	10.3	5.1	8.3	24.7	45.7	9.8	9.5	9.0	25.9
IS										
Employment	88.3	1.8	1.6	4.5	3.8	87.6	2.3	2.1	3.1	4.9
Selfemployment	10.8	82.3	1.8	0.8	4.2	14.3	74.1	4.0	3.2	4.4
Unemployment	55.0	5.6	12.6	8.0	18.8	38.4	9.0	37.2	10.5	5.0
Education	24.8	1.0	1.1	70.6	2.6	17.9	0.6	4.1	74.5	2.8
Inactivity	22.7	4.4	2.7	4.3	65.9	27.1	4.7	4.6	2.1	61.5
Total	65.8	10.8	1.7	12.9	8.7	63.2	9.2	4.4	13.9	9.3
IT										
Employment	90.7	2.6	2.4	0.4	3.9	90.3	2.2	3.1	0.4	4.0
Selfemployment	6.1	86.5	2.3	0.3	4.9	5.0	87.0	2.4	0.5	5.1
Unemployment	17.9	4.7	57.0	3.0	17.4	18.7	5.0	54.3	4.8	17.2
Education	6.3	1.6	7.6	81.2	3.3	5.6	1.6	9.3	79.6	3.8
Inactivity	4.3	2.3	3.4	0.5	89.5	4.4	2.4	4.8	0.7	87.7
Total	41.9	14.8	7.0	7.4	28.9	42.7	14.6	7.6	8.3	26.7
LT										
Employment	92.5	1.4	3.3	0.4	2.4	89.7	0.7	6.6	0.5	2.5
Selfemployment	12.4	74.7	4.2	0.6	8.2	6.3	85.9	4.2	0.0	3.5
Unemployment	31.9	4.8	46.9	1.7	14.8	20.9	1.5	66.6	1.9	9.1
Education	15.3	0.9	2.1	79.7	2.0	8.0	0.3	6.0	84.6	1.1
Inactivity	9.4	1.9	2.1	0.7	85.8	3.4	1.2	4.4	0.2	90.7
Total	59.9	6.9	6.0	10.0	17.2	56.2	6.9	10.7	10.5	15.8

Table A.5.2, continued

ORIGIN	Pre-crisis			During the crisis		
	Employment	Self-employment	Un-employment	Employment	Self-employment	Un-employment
			Education			Education
			Inactivity			Inactivity
LU						
Employment	94.3	0.5	2.2	0.3	2.8	3.0
Selfemployment	6.1	88.2	1.1	0.0	4.7	0.2
Unemployment	44.7	1.2	42.8	1.1	10.2	49.7
Education	10.7	0.3	1.9	86.1	1.1	4.1
Inactivity	3.3	0.8	0.6	0.4	94.9	1.2
Total	59.6	4.1	3.0	9.5	23.7	4.4
LV						
Employment	89.1	2.4	4.2	0.6	3.7	10.8
Selfemployment	27.5	61.0	3.8	0.2	7.5	10.8
Unemployment	43.5	4.5	32.8	1.4	17.8	54.4
Education	20.6	0.4	5.0	71.4	2.6	10.2
Inactivity	13.0	2.4	5.0	1.0	78.6	9.5
Total	63.7	5.6	6.4	7.5	16.7	15.3
NL						
Employment	94.5	1.0	0.7	1.1	2.7	1.4
Selfemployment	3.3	93.1	0.3	0.3	3.1	0.2
Unemployment	38.5	2.4	26.3	4.7	28.2	20.5
Education	22.5	1.4	1.5	70.1	4.6	3.2
Inactivity	11.1	1.7	1.8	0.9	84.6	2.0
Total	60.8	8.3	1.5	8.1	21.3	1.9
NO						
Employment	92.4	1.5	1.3	1.7	3.2	1.2
Selfemployment	19.6	76.2	1.2	0.7	2.3	2.1
Unemployment	47.7	2.0	24.9	8.8	16.7	27.5
Education	23.6	1.1	2.1	69.2	4.1	3.0
Inactivity	11.2	1.2	2.8	2.6	82.1	2.4
Total	67.9	6.1	2.2	9.2	14.7	2.2

Table A.5.2, continued

ORIGIN	Pre-crisis			During the crisis		
	Employment	Self-employment	Un-employment	Employment	Self-employment	Un-employment
PL						
Employment	91.2	1.3	3.5	91.0	1.3	4.1
Selfemployment	4.9	88.1	2.0	3.9	91.3	1.2
Unemployment	27.7	3.8	51.8	26.1	5.2	47.6
Education	12.4	1.1	5.6	10.4	1.7	5.4
Inactivity	4.7	1.9	3.7	5.3	2.3	2.6
Total	44.5	11.2	9.0	47.0	13.2	6.0
PT						
Employment	91.8	1.1	4.4	90.9	1.6	5.4
Selfemployment	7.8	86.5	1.3	11.7	75.0	3.1
Unemployment	26.1	5.9	56.1	30.1	5.0	52.9
Education	12.2	0.9	4.6	7.1	0.2	8.3
Inactivity	3.5	2.3	2.9	4.1	2.7	2.7
Total	53.1	12.9	7.9	55.2	10.0	8.7
SE						
Employment	91.8	1.3	1.8	91.6	1.6	2.4
Selfemployment	11.2	83.3	1.3	18.9	75.8	1.5
Unemployment	40.1	3.8	32.8	38.0	2.2	39.5
Education	24.4	0.7	7.7	23.0	0.8	10.2
Inactivity	10.2	1.7	3.2	10.3	1.4	2.9
Total	67.0	7.3	3.9	68.9	7.0	4.7
SI						
Employment	93.6	2.0	2.6	90.7	2.5	4.5
Selfemployment	25.9	64.9	4.0	19.9	68.7	5.6
Unemployment	23.5	2.4	56.7	19.4	3.6	59.3
Education	8.6	0.5	5.9	7.8	0.9	5.0
Inactivity	1.9	0.9	4.9	1.1	1.1	5.0
Total	54.4	4.6	8.5	53.9	5.7	8.7

Table A.5.2, continued

ORIGIN	Employment			Un-employment			Education			During the crisis		
	Employment	Self-employment	Un-employment	Employment	Self-employment	Un-employment	Employment	Self-employment	Un-employment	Education	Inactivity	Inactivity
SK												
Employment	93.2	1.5	2.2	0.4	2.8		91.9	1.2	3.6	0.2		3.2
Selfemployment	11.5	84.2	1.5	0.0	2.7		7.4	88.5	2.2	0.3		1.6
Unemployment	31.6	2.7	52.6	1.4	11.7		24.7	2.9	62.1	2.4		7.8
Education	10.8	0.5	4.7	83.0	1.1		8.0	0.5	5.5	85.2		0.8
Inactivity	5.9	0.5	2.5	0.4	90.6		4.2	0.2	1.9	0.1		93.7
Total	57.3	6.1	6.4	11.9	18.4		56.5	6.7	7.0	12.3		17.5
UK												
Employment	92.5	1.1	1.1	1.0	4.3		90.5	1.4	1.9	1.0		5.2
Selfemployment	6.9	87.3	1.3	0.3	4.2		6.5	85.1	2.2	0.1		6.1
Unemployment	37.9	3.8	31.8	2.1	24.3		30.8	4.3	35.0	4.4		25.5
Education	29.9	0.7	4.5	60.4	4.5		23.5	1.0	8.0	64.3		3.2
Inactivity	10.6	1.8	2.2	0.8	84.6		9.0	1.9	3.4	0.9		84.8
Total	63.8	8.3	2.3	4.1	21.5		62.0	8.2	3.6	4.5		21.7
DE												
Employment	92.5	1.6	3.0	0.3	2.7		92.6	1.7	2.7	0.4		2.6
Selfemployment	4.6	91.8	1.4	0.1	2.1		4.5	92.1	1.0	0.2		2.2
Unemployment	24.9	2.2	52.7	1.4	18.8		26.4	1.5	44.4	1.9		25.8
Education	20.2	0.8	1.8	74.0	3.2		21.8	0.5	1.8	72.9		3.0
Inactivity	3.2	0.3	1.6	0.5	94.3		3.5	0.4	1.4	0.5		94.2
Total	46.4	5.7	5.5	7.0	35.4		48.7	5.8	4.2	6.7		34.6
RO												
Employment	95.7	1.1	1.1	0.1	2.0		94.4	0.9	2.1	0.1		2.5
Selfemployment	4.9	89.5	0.7	0.0	4.9		4.1	88.0	1.4	0.0		6.5
Unemployment	19.1	6.4	55.9	0.7	17.9		10.8	7.0	56.0	1.2		25.0
Education	3.8	0.3	1.9	92.7	1.2		2.7	0.3	2.1	94.0		0.9
Inactivity	4.1	4.1	1.2	0.0	90.5		2.6	4.2	1.0	0.1		92.2
Total	41.3	11.1	3.7	10.6	33.3		40.8	11.2	3.9	10.0		34.1

Source: EU-SILC, own calculations.

Table A.6.1
Yearly transitions from employment to different labour market states, EU-SILC

	E		S		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category	
Male	0.0109***	0.0034	0.0059***	0.0010	-0.0018	0.0016	0.0000	0.0001	-0.0150***	0.0021
Age 15-24	-0.0536***	0.0033	0.0010	0.0009	0.0221***	0.0029	0.0166***	0.0015	0.0139***	0.0036
Age 25-34	-0.0213***	0.0032	0.0033***	0.0009	0.0098***	0.0025	0.0027***	0.0005	0.0056***	0.0019
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.0991***	0.0153	-0.0001	0.0007	-0.0008	0.0017	-0.0011***	0.0002	0.1010***	0.0149
Single	Reference category		Reference category		Reference category		Reference category		Reference category	
Married	0.0025**	0.0012	-0.0005	0.0012	-0.0068***	0.0012	-0.0005**	0.0002	0.0053***	0.0009
Low skilled (ISCED 0-2)	-0.0167***	0.0020	0.0006	0.0006	0.0102***	0.0011	-0.0003***	0.0001	0.0062***	0.0008
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	0.0096***	0.0018	-0.0014	0.0009	-0.004***	0.0009	0.0000	0.0001	-0.0041***	0.0012
Number of children(≤4) in household	-0.0068***	0.0017	0.0006	0.0005	0.0001	0.0006	-0.0004***	0.0001	0.0065***	0.0017
Number of children(5-14) in household	-0.0005	0.0007	0.0011***	0.0003	0.0013***	0.0005	0.0001	0.0000	-0.0020***	0.0005
Number of working-age persons (15-64) in household	0.0016***	0.0005	0.0002	0.0002	0.0003	0.0003	0.0002**	0.0001	-0.0022***	0.0004
Number of elderly(>=65) in household	-0.0044***	0.0015	0.0004	0.0005	0.0009	0.0008	0.0000	0.0001	0.0031***	0.0008
Full-time employed partner in household	0.0111***	0.0032	0.0001	0.0004	-0.0062***	0.0014	-0.0002**	0.0001	-0.0047***	0.0022
Part-time employed partner in household	0.0131***	0.0027	-0.0006	0.0008	-0.0066***	0.0016	-0.0003***	0.0001	-0.0056***	0.0019
Inactive/unemployed partner in household	Reference category		Reference category		Reference category		Reference category		Reference category	
No partner in household	0.0055**	0.0023	0.0005	0.0013	0.0006	0.0010	0.0010***	0.0002	-0.0076***	0.0022
Full-time employed	Reference category		Reference category		Reference category		Reference category		Reference category	
Part-time employed	-0.0382***	0.0023	0.0071***	0.0015	0.0126***	0.0027	0.0029***	0.0006	0.0156***	0.0019
Occupation dummies	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Year dummies	included		included		included		included		included	
Pseudo-R-squared	0.1098									
Observations	578,331									

Source: EU-SILC, own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Employment (E), unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.2
Yearly transitions from employment to different labour market states, EU-LFS

	E		S		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
<i>Female</i>	Reference category		Reference category		Reference category		Reference category		Reference category	
Male	-0.0003***	0.0001	0.0082***	0.0006	0.0050***	0.0002	0.0001***	0.0000	-0.0131***	0.0009
Age 15-24	-0.0231***	0.0003	-0.0077***	0.0010	0.0038***	0.0011	0.0081***	0.0003	0.0188***	0.0005
Age 25-34	-0.0101***	0.0027	-0.0028***	0.0000	0.0045***	0.0011	0.0019***	0.0000	0.0066***	0.0016
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.0614***	0.0025	0.0038***	0.0013	-0.0024	0.0021	-0.0007***	0.0001	0.0606***	0.0035
<i>Single</i>	Reference category		Reference category		Reference category		Reference category		Reference category	
Married	0.0077***	0.0027	-0.0032**	0.0013	-0.0060***	0.0002	-0.0004***	0.0000	0.0020	0.0016
Low skilled (ISCED 0-2)	-0.0087	0.0071	0.0000	0.0046	0.0064***	0.0020	-0.0003***	0.0000	0.0027	0.0044
<i>Medium skilled (ISCED 3-4)</i>	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	0.0087***	0.0028	0.0082***	0.0016	-0.0146***	0.0002	-0.0002***	0.0000	-0.0021**	0.0010
Number of children (<=4) in household	-0.0244***	0.0002	0.0036***	0.0004	0.0018***	0.0003	0.0000***	0.0000	0.0190***	0.0008
Number of children (5-14) in household	-0.0038***	0.0001	0.0021***	0.0005	0.0007*	0.0004	0.0000	0.0001	0.0009***	0.0001
Number of working-age (15-64) persons in household	0.0050	0.0036	-0.0003	0.0002	-0.0016*	0.0008	-0.0000***	0.0000	-0.0031	0.0026
Number of elderly (>=65) in household	-0.0059***	0.0001	0.0055***	0.0021	-0.0063***	0.0015	0.0000	0.0001	0.0067***	0.0005
Employed partner in household	0.0075**	0.0030	0.0036***	0.0008	-0.0106***	0.0002	-0.0001**	0.0000	-0.0003	0.0021
<i>Inactive/unemployed partner in household</i>	Reference category		Reference category		Reference category		Reference category		Reference category	
No partner in household	0.0023**	0.0010	0.0008	0.0009	-0.0017***	0.0001	0.0002***	0.0000	-0.0016***	0.0000
Year dummies	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Pseudo-R-squared	0.0773									
Observations	717,912									

Source: EU-LFS own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Employment (E), unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.3
Yearly transitions from employment to different labour market states, crisis indicator, EU-SILC

Before and during the crisis

	E		S		U		Ed		I		
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	
Crisis indicator	0.0114***	0.0026	-0.0005	0.0010	0.0125***	0.0024	0.0000	0.0001	-0.0006	0.0013	
Individual covariates	included		included		included		included		included		
Occupation dummies	included		included		included		included		included		
Country dummies	included		included		included		included		included		
Pseudo-R-squared	0.1094										
Observations	578,331										

Source: EU-SILC, own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Employment (E), unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.4
Yearly transitions from employment to different labour market states, crisis indicator, EU-LFS

Before and during the crisis

	E		S		U		Ed		I		
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	
Crisis indicator	-0.0004	0.0038	0.0002	0.0005	0.0001	0.0027	0.0001***	0.0000	0.0001	0.0015	
Other individual covariates	included		included		included		included		included		
Country dummies	included		included		included		included		included		
Pseudo-R-squared	0.0763										
Observations	717,912										

Source: EU-LFS own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Employment (E), unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.5
Yearly transitions from employment to different labour market states, heterogeneous effects of the crisis by age groups, EU-SILC
 Before and during the crisis

	E		S		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Age 15-24	-0.0489***	0.0043	0.0003	0.0007	0.0188***	0.0029	0.0161***	0.0019	0.0137***	0.0039
Age 25-34	-0.0203***	0.0036	0.0033***	0.0007	0.0098***	0.0027	0.0025***	0.0004	0.0047**	0.0021
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.0992***	0.0164	-0.0004	0.0006	0.0006	0.0028	-0.0013***	0.0003	0.1003***	0.0159
Crisis indicator	-0.0099***	0.0023	-0.0008	0.0013	0.0119***	0.0021	0.0000	0.0002	-0.0012	0.0021
Crisis*Age 15-24	-0.0077	0.0049	0.0021	0.0031	0.0049**	0.0022	0.0001	0.0002	0.0006	0.0022
Crisis*Age 25-34	-0.0022	0.0021	0.0001	0.0012	0.0000	0.0012	0.0001	0.0003	0.0020	0.0017
Crisis*Age 55-65	-0.0009	0.0042	0.0009	0.0010	-0.0027	0.0020	0.0024	0.0032	0.0003	0.0023
Other individual covariates	included	included	included	included	included	included	included	included	included	included
Occupation dummies	included	included	included	included	included	included	included	included	included	included
Country dummies	included	included	included	included	included	included	included	included	included	included
Pseudo-R-squared	0.1095									
Observations	578,331									

Source: EU-SILC, own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Employment (E), unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.6
Yearly transitions from employment to different labour market states, heterogeneous effects of the crisis by age groups, EU-LFS
 Before and during the crisis

	E		S		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Age 15-24	-0.0210***	0.0002	-0.0074***	0.0017	0.0054***	0.0007	0.0032***	0.0004	0.0198***	0.0014
Age 25-34	-0.0107**	0.0050	-0.0021***	0.0001	0.0042**	0.0017	0.0008***	0.0000	0.0078**	0.0034
Age 35-54	-0.0674***	0.0014	0.0034**	0.0015	-0.0032*	0.0019	Reference category	Reference category	Reference category	Reference category
Age 55-65	-0.0031	0.0028	0.0005***	0.0001	0.0002	0.0026	0.0001***	0.0000	0.0674***	0.0019
Crisis indicator	0.0050*	0.0029	-0.0011	0.0031	-0.0030***	0.0008	-0.0000***	0.0000	0.0024***	0.0003
Crisis*Age 15-24	0.0033	0.0041	-0.0021***	0.0003	0.0011	0.0015	-0.0000***	0.0000	-0.0009	0.0010
Crisis*Age 25-34	0.0021***	0.0004	0.0006	0.0006	0.0016***	0.0005	-0.0005***	0.0000	-0.0022	0.0029
Crisis*Age 55-65	included	included	included	included	included	included	included	included	-0.0038***	0.0006
Other individual covariates	included	included	included	included	included	included	included	included	included	included
Country dummies	0.0765									
Pseudo-R-squared	717,912									
Observations										

Source: EU-LFS own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Employment (E), unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.7
Yearly transitions from employment to different labour market states, heterogeneous effects of the crisis by gender, EU-SILC
 Before and during the crisis

	E		S		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
	Reference category		Reference category		Reference category		Reference category		Reference category	
Female										
Male	0.0147***	0.0044	0.0067***	0.0012	-0.0058***	0.0021	-0.0001	0.0001	-0.0155***	0.0025
Crisis indicator	-0.0071***	0.0027	0.0010	0.0014	0.0074***	0.0014	0.0000	0.0001	-0.0012	0.0017
Crisis*Male	-0.0083*	0.0043	-0.0021***	0.0007	0.0088***	0.0025	0.0002**	0.0001	0.0013	0.0019
Other individual covariates	included	included	included	included	included	included	included	included	included	included
Occupation dummies	included	included	included	included	included	included	included	included	included	included
Country dummies	included	included	included	included	included	included	included	included	included	included
Pseudo-R-squared	0.1097									
Observations	578,331									

Source: EU-SILC, own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Employment (E), unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.8
Yearly transitions from employment to different labour market states, heterogeneous effects of the crisis by gender, EU-LFS
 Before and during the crisis

	E		S		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female		Reference category		Reference category		Reference category		Reference category		Reference category
Male	0.0009***	0.0001	0.0087***	0.0004	0.0040***	0.0004	0.0001***	0.0000	-0.0137***	0.0007
Crisis indicator	0.0009	0.0040	0.0009	0.0008	-0.0014	0.0031	0.0001***	0.0000	-0.0005	0.0016
Crisis*Male	-0.0032***	0.0007	-0.0011***	0.0004	0.0027***	0.0007	0.0000	0.0000	0.0016***	0.0004
Other individual covariates		included		included		included		included		included
Country dummies		included		included		included		included		included
Pseudo-R-squared	0.0764									
Observations	717,912									

Source: EU-LFS own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Employment (E), unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.9
Yearly transitions from employment to different labour market states, heterogeneous effects of the crisis by skill groups, EU-SILC
 Before and during the crisis

	E		S		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Low skilled (ISCED 0-2)	-0.0174***	0.0026	0.0017*	0.0010	0.0097***	0.0016	-0.0003***	0.0001	0.0064***	0.0010
<i>Medium skilled (ISCED 3-4)</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
High skilled (ISCED 5)	0.0106***	0.0023	-0.0014	0.0011	-0.0047***	0.0010	0.0000	0.0001	-0.0045***	0.0016
Crisis indicator	-0.0113***	0.0027	0.0002	0.0008	0.0118***	0.0014	0.0000	0.0001	-0.0008	0.0018
Crisis*Low skilled	0.0017	0.0027	-0.0024***	0.0009	0.0010	0.0034	-0.0001	0.0002	-0.0002	0.0018
Crisis*High skilled	-0.0023	0.0024	-0.0002	0.0012	0.0015	0.0020	0.0001	0.0001	0.0010	0.0014
Other individual covariates	included		included		included		included		included	
Occupation dummies	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Pseudo-R-squared	0.1095									
Observations	578,331									

Source: EU-SILC, own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Employment (E), unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.10
Yearly transitions from employment to different labour market states, heterogeneous effects of the crisis by skill groups, EU-LFS
 Before and during the crisis

	E		S		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Low skilled (ISCED 0-2)	-0.0086	0.0083	0.0001	0.0059	0.0063***	0.0016	-0.0003***	0.0001	0.0025	0.0040
Medium skilled (ISCED 3-4)		Reference category		Reference category		Reference category		Reference category		Reference category
High skilled (ISCED 5)	0.0079**	0.0038	0.0085***	0.0021	-0.0148***	0.0006	-0.0002***	0.0000	-0.0014	0.0012
Crisis indicator	-0.0008	0.0036	0.0004	0.0005	0.0000	0.0028	0.0001**	0.0000	0.0003	0.0012
Crisis*Low skilled	-0.0008	0.0035	-0.0004	0.0033	0.0006	0.0010	0.0002*	0.0001	0.0005	0.0008
Crisis*High skilled	0.0019	0.0022	-0.0005	0.0008	0.0002	0.0012	0.0000	0.0000	-0.0016***	0.0003
Other individual covariates	included	included	included	included	included	included	included	included	included	included
Country dummies	included	included	included	included	included	included	included	included	included	included
Pseudo-R-squared	0.0763									
Observations	717,912									

Source: EU-LFS own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Employment (E), unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.11
Yearly transitions from employment to different labour market states, controlling for GDP growth, entire period, EU-SILC

	E		S		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Log Growth GDP	1.5348***	0.409	0.1191	0.164	-1.5805	0.3986	-0.0214**	0.0093	-0.0519	0.1434
Individual covariates	included		included		included		included		included	
Occupation dummies	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Pseudo-R-squared	0.1086									
Observations	578,331									

Source: EU-SILC, own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Employment (E), unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.12
Yearly transitions from employment to different labour market states, controlling for GDP growth, entire period, EU-LFS

	E		S		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female		Reference category		Reference category		Reference category		Reference category		Reference category
Male	-0.0003**	0.0001	0.0082***	0.0006	0.0050***	0.0001	0.0001***	0.0000	-0.0131***	0.0009
Age 15-24	-0.0232***	0.0003	-0.0077***	0.0010	0.0039***	0.0011	0.0082***	0.0003	0.0188***	0.0005
Age 25-34	-0.0102***	0.0028	-0.0028***	0.0000	0.0046***	0.0012	0.0019***	0.0000	0.0066***	0.0016
Age 35-54		Reference category		Reference category		Reference category		Reference category		Reference category
Age 55-65	-0.0613***	0.0028	0.0039***	0.0013	-0.0025	0.0020	-0.0007***	0.0001	0.0606***	0.0038
Low skilled (ISCED 0-2)	-0.0089	0.0069	0.0000	0.0047	0.0065***	0.0021	-0.0003***	0.0000	0.0027	0.0043
Medium skilled (ISCED 3-4)		Reference category		Reference category		Reference category		Reference category		Reference category
High skilled (ISCED 5)	0.0088***	0.0028	0.0082***	0.0016	-0.0147***	0.0002	-0.0002***	0.0000	-0.0021**	0.0010
Log Growth GDP	1.0403***	0.3761	0.0325	0.1452	-0.8421***	0.3174	-0.0019	0.0115	-0.2288	0.1909
Other individual covariates	included	included	included	included	included	included	included	included	included	included
Country dummies	included	included	included	included	included	included	included	included	included	included
Pseudo-R-squared	0.0767									
Observations	717,912									

Source: EU-LFS own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Employment (E), unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.13
Yearly transitions from employment to different labour market states, controlling for GDP growth, before the crisis, EU-SILC

	E		S		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Log Growth GDP	-0.2076	0.6899	0.4183	0.3118	-0.4319	0.3261	-0.0113	0.0188	0.2325	0.2646
Female	Reference category		Reference category		Reference category		Reference category		Reference category	
Male	0.0119***	0.0042	0.0061***	0.0011	-0.003*	0.0017	-0.0001	0.0001	-0.0149***	0.0027
Age 15-24	-0.0481***	0.0041	0.0006	0.0008	0.0164***	0.0026	0.0173***	0.0021	0.0138***	0.0041
Age 25-34	-0.0192***	0.0035	0.0032***	0.0008	0.009***	0.0026	0.0026***	0.0005	0.0044**	0.0020
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.0998***	0.0173	-0.0005	0.0007	0.0016	0.0027	-0.0013***	0.0002	0.1***	0.0168
Single	Reference category		Reference category		Reference category		Reference category		Reference category	
Married	0.0027	0.0018	-0.0010	0.0016	-0.0062***	0.0014	-0.0003	0.0002	0.0048***	0.0009
Low skilled (ISCED 0-2)	-0.0153***	0.0021	0.0007	0.0010	0.0091***	0.0008	-0.0003***	0.0001	0.0058***	0.0007
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	0.0107***	0.0028	-0.0016	0.0011	-0.0039***	0.0012	0.0000	0.0001	-0.0051***	0.0016
Number of children(<=4) in household	-0.0062***	0.0017	0.0005	0.0005	0.0001	0.0007	-0.0004***	0.0001	0.0061***	0.0016
Number of children(5-14) in household	-0.0002	0.0010	0.0011***	0.0003	0.0016***	0.0005	0.0001	0.0000	-0.0025***	0.0006
Number of working-age persons (15-64) in household	0.0022***	0.0008	-0.0001	0.0003	0.0005	0.0004	0.0001	0.0001	-0.0026***	0.0005
Number of elderly(>=65) in household	-0.0048***	0.0018	0.0006	0.0004	0.0010	0.0009	0.0000	0.0001	0.0032***	0.0010
Full-time employed partner in household	0.0083***	0.0025	-0.0005	0.0004	-0.0038***	0.0013	0.0001	0.0003	-0.004*	0.0021
Part-time employed partner in household	0.0138***	0.0029	-0.0009	0.0010	-0.0052**	0.0022	-0.0004**	0.0002	-0.0074***	0.0023
Inactive/unemployed partner in household	Reference category		Reference category		Reference category		Reference category		Reference category	
No partner in household	0.0057*	0.0030	-0.0008	0.0016	0.0018**	0.0009	0.0013***	0.0004	-0.008**	0.0024
Full-time employed	Reference category		Reference category		Reference category		Reference category		Reference category	
Part-time employed	-0.0401***	0.0021	0.0077***	0.0020	0.013***	0.0024	0.0028***	0.0006	0.0166***	0.0022
Occupation dummies	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Pseudo-R-squared	0.1091									
Observations	362,440									

Source: EU-SILC, own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Employment (E), unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.14
Yearly transitions from employment to different labour market states, controlling for GDP growth, before the crisis, EU-LFS

	E		S		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
<i>Female</i>	Reference category		Reference category		Reference category		Reference category		Reference category	
Male	0.0006***	0.0002	0.0085***	0.0005	0.0039***	0.0003	0.0001***	0.0000	-0.0131***	0.0011
Age 15-24	-0.0282***	0.0013	-0.0068***	0.0013	0.0059***	0.0017	0.0085***	0.0003	0.0206***	0.0013
Age 25-34	-0.0117***	0.0039	-0.0020***	0.0001	0.0041***	0.0014	0.0019***	0.0001	0.0076***	0.0024
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.0642***	0.0034	0.0036**	0.0016	-0.0031*	0.0018	-0.0005***	0.0001	0.0643***	0.0036
Low skilled (ISCED 0-2)	-0.0085	0.0081	0.0004	0.0057	0.0058***	0.0016	-0.0003***	0.0000	0.0026	0.0039
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	0.0074*	0.0038	0.0083***	0.0019	-0.0142***	0.0007	-0.0002***	0.0000	-0.0014	0.0013
Log Growth GDP	1.4228***	0.3696	0.4444	0.4308	-1.1538*	0.6925	-0.0388***	0.0006	-0.6747***	0.1062
Other individual covariates	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Pseudo-R-squared	0.0816									
Observations	541,261									

Source: EU-LFS own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Employment (E), unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.15
Yearly transitions from employment to different labour market states, controlling for GDP growth, during the crisis, EU-SILC

	E		S		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Log Growth GDP	0.8611	0.5748	-0.1117	0.2906	-0.5124*	0.2703	-0.0307***	0.0117	-0.2063	0.2720
Female	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category
Male	0.0095**	0.0041	0.0055***	0.0009	-0.0004	0.0022	0.0001	0.0001	-0.0147***	0.0023
Age 15-24	-0.0614***	0.0052	0.0016	0.0028	0.0322***	0.0049	0.0138***	0.0023	0.0138***	0.0039
Age 25-34	-0.0241***	0.0033	0.0032**	0.0016	0.0112***	0.0027	0.0024***	0.0007	0.0074***	0.0020
Age 35-54	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category
Age 55-65	-0.0978***	0.0138	0.0006	0.0008	-0.0036***	0.0008	-0.0008***	0.0003	0.1016***	0.0137
Single	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category
Married	0.0026	0.0020	-0.0001	0.0012	-0.0081***	0.0010	-0.0008***	0.0002	0.0065***	0.0013
Low skilled (ISCED 0-2)	-0.0189***	0.0026	0.0003	0.0006	0.0121***	0.0023	-0.0004***	0.0001	0.0068***	0.0013
Medium skilled (ISCED 3-4)	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category
High skilled (ISCED 5)	0.008***	0.0020	-0.0012*	0.0007	-0.0041**	0.0019	0.0000	0.0001	-0.0027**	0.0011
Number of children(<=4) in household	-0.008***	0.0025	0.0008	0.0009	0.0005	0.0013	-0.0004**	0.0002	0.0071***	0.0021
Number of children(5-14) in household	()	()	0.0009*	0.0005	0.0009	0.0010	0.0001	0.0000	-0.0009	0.0010
Number of working-age persons (15-64) in household	0.0006	0.0011	0.0005	0.0005	0.0003	0.0008	0.0002**	0.0001	-0.0016***	0.0005
Number of elderly(>=65) in household	-0.0048**	0.0021	-0.0002	0.0008	0.002**	0.0010	0.0000	0.0001	0.003**	0.0012
Full-time employed partner in household	0.015***	0.0043	0.0015**	0.0007	-0.0102***	0.0020	-0.0006**	0.0003	-0.0056**	0.0022
Part-time employed partner in household	0.0122***	0.0026	0.0002	0.0009	-0.009***	0.0010	-0.0003	0.0003	-0.0032*	0.0019
Inactive/unemployed partner in household	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category
No partner in household	0.0043*	0.0022	0.0023	0.0016	-0.0009	0.0017	0.0005**	0.0002	-0.0063***	0.0020
Full-time employed	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category
Part-time employed	-0.0344***	0.0039	0.006***	0.0012	0.0117***	0.0041	0.0028***	0.0004	0.014***	0.0020
Occupation dummies	included	included	included	included	included	included	included	included	included	included
Country dummies	included	included	included	included	included	included	included	included	included	included
Pseudo-R-squared	0.1130									
Observations	215,891									

Source: EU-SILC, own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Employment (E), unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.16
Yearly transitions from employment to different labour market states, controlling for GDP growth, during the crisis, EU-LFS

	E		S		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category	
Male	-0.0017***	0.0001	0.0077***	0.0007	0.0067***	0.0002	0.0000***	0.0000	-0.0127***	0.0006
Age 15-24	-0.0086***	0.0014	-0.0090***	0.0004	0.0007***	0.0001	0.0005***	0.0001	0.0164***	0.0008
Age 25-34	-0.0059***	0.0007	-0.0042***	0.0001	0.0051***	0.0006	0.0001***	0.0000	0.0048***	0.0002
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.0568***	0.0022	0.0042***	0.0006	-0.0014	0.0027	-0.0009***	0.0001	0.0549***	0.0041
Low skilled (ISCED 0-2)	-0.0094**	0.0047	-0.0006	0.0028	0.0073**	0.0029	-0.0000***	0.0000	0.0027	0.0049
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	0.0104***	0.0016	0.0080***	0.0012	-0.0153***	0.0003	-0.0000***	0.0000	-0.0032***	0.0006
Log Growth GDP	0.8316***	0.3049	-0.1856***	0.0066	-0.7504***	0.0149	0.0014***	0.0003	0.1030	0.2832
Other individual covariates	included	included	included	included	included	included	included	included	included	included
Countries	included	included	included	included	included	included	included	included	included	included
Pseudo-R-squared	0.0722									
Observations	176,651									

Source: EU-LFS own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Employment (E), unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.17
Yearly transitions from permanent employment to different labour market states, EU-SILC

	PermE		TempE		S		U		Ed		I	
	Marg. Effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Male	0.0104**	0.0049	-0.0020	0.0013	0.0044***	0.0008	-0.0010	0.0018	-0.0001	0.0000	-0.0117***	0.0021
Age 15-24	-0.0836***	0.0065	0.0446***	0.0052	0.0038***	0.0010	0.0164***	0.0032	0.0086***	0.0015	0.0103***	0.0039
Age 25-34	-0.0334***	0.0021	0.0149***	0.0014	0.0042***	0.0008	0.007***	0.0017	0.0014***	0.0004	0.006***	0.0026
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.1093***	0.0127	-0.0075**	0.0031	-0.0007	0.0007	0.0028	0.0030	-0.0005***	0.0001	0.1152***	0.0126
Single	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Married	0.0042	0.0027	-0.0041***	0.0013	0.0005	0.0013	-0.0054***	0.0011	-0.0002**	0.0001	0.005***	0.0008
Low skilled ISCED 0-2	-0.0182***	0.0026	0.0044***	0.0013	0.0014	0.0005	0.0067***	0.0010	-0.0002**	0.0001	0.0059***	0.0009
Medium skilled ISCED 3-4	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled ISCED 5	0.0061**	0.0024	0.0012	0.0008	-0.0008	0.0010	-0.0029***	0.0010	-0.0001	0.0001	-0.0035***	0.0017
Number of children<=4 in household	-0.0062***	0.0019	0.0006	0.0007	0.0004	0.0005	0.0006	0.0004	-0.0002**	0.0001	0.0048***	0.0015
Number of children 5-14 in household	-0.0001	0.0006	0.0015***	0.0004	0.0007*	0.0004	0.0005*	0.0003	0.0000	0.0000	-0.0027***	0.0006
Number of working-age persons (15-64) in household	0.0006	0.0007	0.0007	0.0005	0.0001	0.0002	0.0003	0.0004	0.0001**	0.0000	-0.0017***	0.0002
Number of elderly>=65 in household	-0.003*	0.0017	-0.0007	0.0010	0.0002	0.0006	0.0008	0.0008	0.0000	0.0001	0.0028***	0.0007
Full-time employed partner in household	0.0087***	0.0020	-0.0033***	0.0009	0.0005	0.0004	-0.0034***	0.0010	-0.0001	0.0001	-0.0024**	0.0010
Inactive/unemployed partner in household	0.0114***	0.0020	-0.0032**	0.0014	0.0006	0.0008	-0.0059***	0.0020	-0.0001	0.0001	-0.0028**	0.0012
No partner in household	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Full-time employed	0.0019	0.0020	0.0014	0.0010	0.0008	0.0012	0.0003	0.0012	0.0004***	0.0001	-0.0049***	0.0016
Part-time employed	-0.0432***	0.0037	0.0145***	0.0022	0.0072***	0.0013	0.0095***	0.0020	0.001***	0.0001	0.011***	0.0016
Occupation dummies	included		included		included		included		included		included	
Country dummies	included		included		included		included		included		included	
Year dummies	included		included		included		included		included		included	
Pseudo-R-squared	0.0929											
Observations	402,731											

Source: EU-SILC, own calculations. — Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Employment (E), unemployment (U), self-employment (Ed), inactivity (I).

Table A.6.18
Yearly transitions from permanent employment to different labour market states, crisis indicator, EU-SILC

	PermE		TempE		S		U		Ed		I	
	Marg. Effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Crisis indicator	-0.0016	0.0028	-0.0055**	0.0028	-0.0012	0.0010	0.0102***	0.0015	0.0000*	0.0000	-0.002***	0.0006
Other individual covariates	included	included	included	included	included	included	included	included	included	included	included	included
Occupation dummies	included	included	included	included	included	included	included	included	included	included	included	included
Country dummies	included	included	included	included	included	included	included	included	included	included	included	included
Pseudo-R-squared	0.0923											
Observations	402,731											

Source: EU-SILC, own calculations. – Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Permanent employment (PermE), temporary employment, (TempE) unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.19
Yearly transitions from permanent employment to different labour market states, heterogeneous effects of the crisis by gender, EU-SILC
 Before and during the crisis

	PermE		TempE		S		U		Ed		I	
	Marg. Effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Male	0.0132***	0.0049	-0.002*	0.0011	0.005***	0.0010	-0.0039*	0.0020	-0.0001	0.0001	-0.0122***	0.0025
Crisis indicator	0.0014	0.0031	-0.0055**	0.0024	0.0000	0.0015	0.0065***	0.0010	0.0000	0.0001	-0.0024**	0.0012
Crisis*Male	-0.0055***	0.0020	-0.0001	0.0024	-0.0017*	0.0009	0.0062***	0.0015	0.0001	0.0001	0.0010	0.0019
Other individual covariates	included		included		included		included		included		included	
Occupation dummies	included		included		included		included		included		included	
Country dummies	included		included		included		included		included		included	
Pseudo-R-squared	0.0925											
Observations	402,731											

Source: EU-SILC, own calculations. — Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Permanent employment (PermE), temporary employment, (TempE) unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.20
Yearly transitions from permanent employment to different labour market states, heterogeneous effects of the crisis by age groups, EU-SILC
 Before and during the crisis

	Perme		TempE		S		U		Ed		I	
	Marg. Effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Age 15-24	-0.0785***	0.0056	0.0415***	0.0044	0.0033**	0.0013	0.0142***	0.0039	0.0095***	0.0017	0.01**	0.0042
Age 25-34	-0.0345***	0.0025	0.0154***	0.0013	0.0043***	0.0007	0.0075***	0.0020	0.0016***	0.0003	0.0057**	0.0024
Age 35-54	-0.1104***	0.0136	-0.0071*	0.0037	-0.0014**	0.0006	0.0050	0.0043	-0.0004***	0.0001	0.1143***	0.0135
Age 55-65	-0.0014	0.0036	-0.0056*	0.0030	-0.0014	0.0011	0.0106***	0.0016	0.0001	0.0001	-0.0023	0.0022
Crisis indicator	-0.01***	0.0034	0.0043	0.0027	0.0015	0.0027	0.0036	0.0023	-0.0001	0.0001	0.0007	0.0027
Crisis*Age 15-24	0.0014	0.0026	-0.0010	0.0018	-0.0001	0.0009	-0.0008	0.0010	-0.0001	0.0001	0.0007	0.0023
Crisis*Age 25-34	0.0035	0.0030	-0.0018	0.0023	0.0017	0.0015	-0.0034**	0.0016	-0.0003**	0.0001	0.0003	0.0033
Crisis*Age 55-65	included	included	included	included	included	included	included	included	included	included	included	included
Other individual covariates	included	included	included	included	included	included	included	included	included	included	included	included
Occupation dummies	included	included	included	included	included	included	included	included	included	included	included	included
Country dummies	included	included	included	included	included	included	included	included	included	included	included	included
Pseudo-R-squared	0.0924											
Observations	402,731											

Source: EU-SILC, own calculations. – Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Permanent employment (Perme), temporary employment (TempE), temporary employment (TempE), unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.21
Yearly transitions from permanent employment to different labour market states, heterogeneous effects of the crisis by skill groups, EU-SILC
 Before and during the crisis

	PermE		TempE		S		U		Ed		I	
	Marg. Effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Low skilled ISCED 0-2	-0.021***	0.0025	0.0064**	0.0026	0.0025***	0.0008	0.0075***	0.0019	-0.0002**	0.0001	0.0047***	0.0008
Medium skilled ISCED 3-4	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category	Reference category
High skilled ISCED 5	0.0048*	0.0025	0.0029**	0.0013	-0.0004	0.0010	-0.0025	0.0017	0.0000	0.0001	-0.0048**	0.0020
Crisis indicator	-0.0041*	0.0024	-0.0031*	0.0017	-0.0002	0.0011	0.0109***	0.0015	0.0001	0.0001	-0.0036***	0.0008
Crisis*Low skilled	0.0054*	0.0032	-0.0046	0.0037	-0.0023***	0.0007	-0.0012	0.0025	0.0000	0.0001	0.0028**	0.0014
Crisis*High skilled	0.0030	0.0019	-0.0046	0.0029	-0.0011	0.0007	-0.0009	0.0035	-0.0001	0.0001	0.0036**	0.0016
Other individual covariates	included	included	included	included	included	included	included	included	included	included	included	included
Occupation dummies	included	included	included	included	included	included	included	included	included	included	included	included
Country dummies	included	included	included	included	included	included	included	included	included	included	included	included
Pseudo-R-squared	0.0925											
Observations	402,731											

Source: EU-SILC, own calculations. – Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Permanent employment (PermE), temporary employment, (TempE) unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.22
Yearly transitions from permanent employment to different labour market states, controlling for GDP growth, entire period, EU-SILC

	PermE		TempE		S		U		Ed		I	
	Marg. Effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Male	0.0106**	0.0050	-0.0021	0.0014	0.0044***	0.0008	-0.0010	0.0000	-0.0001*	0.0000	-0.0118***	0.0022
Age 15-24	-0.0847***	0.0068	0.0455***	0.0052	0.0039***	0.0011	0.0162***	0.0032	0.0086***	0.0015	0.0104***	0.0039
Age 25-34	-0.0338***	0.0022	0.0151***	0.0015	0.0043***	0.0009	0.0069***	0.0017	0.0014***	0.0004	0.0061**	0.0026
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.1088***	0.0128	-0.0077**	0.0031	-0.0008	0.0007	0.0032	0.0031	-0.0005***	0.0001	0.1146***	0.0125
Low skilled ISCED 0-2	-0.0185***	0.0026	0.0045***	0.0013	0.0015***	0.0005	0.0067***	0.0010	-0.0002**	0.0001	0.0060***	0.0009
Medium skilled ISCED 3-4	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled ISCED 5	0.0063***	0.0024	0.0010	0.0008	-0.0009	0.0010	-0.0027**	0.0011	-0.0001	0.0001	-0.0036**	0.0017
Log Growth GDP	0.2043	0.7036	0.7959	0.5810	0.1688	0.1593	-1.1032***	0.1989	-0.0098***	0.0036	-0.0560	0.1364
Other individual covariates	included		included		included		included		included		included	
Occupation dummies	included		included		included		included		included		included	
Country dummies	included		included		included		included		included		included	
Pseudo-R-squared	0.0915											
Observations	402,731											

Source: EU-SILC, own calculations. – Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Permanent employment (PermE), temporary employment, (TempE) unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.23
Yearly transitions from permanent employment to different labour market states, controlling for GDP growth, before the crisis, EU-SILC

	PermE		TempE		S		U		Ed		I	
	Marg. Effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Male	0.012**	0.0054	-0.0027*	0.0015	0.0045***	0.0010	-0.0018	0.0018	-0.0001	0.0001	-0.0119***	0.0028
Age 15-24	-0.0799***	0.0066	0.0423***	0.0046	0.0035***	0.0014	0.0136***	0.0037	0.0099***	0.0016	0.0106**	0.0045
Age 25-34	-0.0346***	0.0025	0.0156***	0.0015	0.0044***	0.0007	0.0072	0.0018	0.0016***	0.0004	0.0058**	0.0025
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.115***	0.0144	-0.0076*	0.0040	-0.0015**	0.0006	0.0050	0.0039	-0.0004***	0.0001	0.1194***	0.0141
Low skilled / ISCED 0-2	-0.0185***	0.0027	0.0053**	0.0022	0.0017**	0.0008	0.0068***	0.0012	-0.0001	0.0001	0.0049***	0.0007
Medium skilled / ISCED 3-4	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled / ISCED 5	0.0060**	0.0029	0.0026**	0.0011	-0.0008	0.0011	-0.0024	0.0016	-0.0001	0.0001	-0.0054***	0.0018
Log Growth GDP	-1.3651	1.1211	1.0286***	0.7008	0.3939	0.3117	-0.1392	0.1870	-0.0128	0.0132	0.0945	0.2426
Other individual covariates	included	included	included	included	included	included	included	included	included	included	included	included
Occupation dummies	included	included	included	included	included	included	included	included	included	included	included	included
Country dummies	included	included	included	included	included	included	included	included	included	included	included	included
Pseudo-R-squared	0.0935											
Observations	249,687											

Source: EU-SILC, own calculations. – Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Permanent employment (PermE), temporary employment, (TempE) unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.24
Yearly transitions from permanent employment to different labour market states, controlling for GDP growth, during the crisis, EU-SILC

	PermE		TempE		S		U		Ed		I	
	Marg. Effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Male	0.0077	0.0051	-0.0003	0.0015	0.0042***	0.0007	-0.0001	0.0023	0.0000	0.0000	-0.0114***	0.0024
Age 15-24	-0.0911***	0.0078	0.049***	0.0056	0.0047	0.0030	0.0214***	0.0043	0.0061***	0.0018	0.0098**	0.0042
Age 25-34	-0.0314***	0.0028	0.0134***	0.0019	0.0037**	0.0015	0.007***	0.0019	0.001**	0.0037	0.0063**	0.0031
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.1012***	0.0148	-0.0073***	0.0024	0.0003	0.0011	0.0005	0.0022	-0.0005***	0.0000	0.1083***	0.0156
Low skilled ISCED 0-2	-0.0182***	0.0027	0.0033***	0.0012	0.001**	0.0005	0.0068***	0.0021	-0.0002**	0.0000	0.0073***	0.0013
Medium skilled ISCED 3-4	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled ISCED 5	0.0063**	0.0031	-0.0010	0.0016	-0.0010	0.0011	-0.0036	0.0026	-0.0001	-0.0001	-0.0006	0.0019
Log Growth GDP	1.3091	1.0365	-0.5390	0.4299	-0.0811	0.3332	-0.3525*	0.2022	-0.0109***	0.0038	-0.3256	0.3095
Other individual covariates	included		included		included		included		included		included	
Occupation dummies	included		included		included		included		included		included	
Country dummies	included		included		included		included		included		included	
Pseudo-R-squared	0.0950											
Observations	153,044											

Source: EU-SILC, own calculations. — Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Permanent employment (PermE), temporary employment, (TempE) unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.25

Yearly transitions from temporary employment to different labour market states, EU-SILC

	TempE		PermE		S		U		Ed		I	
	Marg. Effect	S.E.	Marg. Effect	S.E.	Marg. Effect	S.E.	Marg. Effect	S.E.	Marg. Effect	S.E.	Marg. Effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Male	-0.0027	0.0107	0.0272***	0.0077	0.008***	0.0012	-0.0085**	0.004	0.0002	0.0007	-0.0242***	0.0033
Age 15-24	-0.0244	0.0172	-0.0075	0.02	-0.0083***	0.0013	0.0045	0.006	0.0335***	0.0031	0.0023	0.0039
Age 25-34	-0.0204***	0.0073	0.0092	0.0076	-0.0023***	0.0007	0.0076	0.0076	0.0088***	0.0015	-0.0029*	0.0017
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.0543***	0.0171	-0.0451**	0.0217	0.0023	0.0031	-0.004	0.0091	-0.0049***	0.0014	0.106***	0.0154
Single	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Married	-0.0067	0.0112	0.0242**	0.0094	-0.001	0.003	-0.0225***	0.0066	-0.0008	0.0013	0.0068***	0.0018
Low skilled ISCED 02	0.0061	0.0128	-0.04***	0.008	-0.0033***	0.0011	0.0358***	0.009	-0.002**	0.0009	0.0034**	0.0016
Medium skilled ISCED 34	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled ISCED 5	0.0207**	0.0104	0.0182	0.0121	-0.0011	0.0012	-0.0256***	0.0049	-0.0002	0.0005	-0.012***	0.0028
Number of children≤4 in household	-0.0001	0.0081	-0.0087	0.0057	0.0013	0.0017	0.0024	0.0042	-0.0014**	0.0007	0.0065***	0.0023
Number of children5,14 in household	-0.0045	0.0049	-0.0024	0.0042	0.0022	0.0014	0.0071***	0.0018	0	0.0003	-0.0024**	0.001
Number of working-age persons (15-64) in household	-0.0014	0.0033	0.003	0.0037	0.0004	0.0006	-0.0001	0.0016	0.0003	0.0002	-0.0022***	0.0007
Number of elderly>=65 in household	-0.0119**	0.0059	0.007	0.0064	0.0007	0.0018	0.0028	0.0045	0	0.0003	0.0014	0.0028
Fulltime employed partner in household	-0.0082	0.0064	0.0158**	0.0075	-0.0013	0.0019	-0.0078***	0.0026	-0.0019*	0.001	0.0035**	0.0015
Parttime employed partner in household	0.0078	0.0077	0.0036	0.0095	0.0015	0.002	-0.0118*	0.0063	-0.0013	0.0013	0.0002	0.0026
Inactive/unemployed partner in household	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
No partner in household	-0.0168	0.0146	0.0166*	0.0092	0.0011	0.0022	0.0014	0.0084	0.0037***	0.0009	-0.0059***	0.0019
Fulltime employed	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Parttime employed	0.0099	0.0126	-0.0496***	0.0108	0.0076***	0.0019	0.0082	0.0064	0.0077***	0.001	0.017***	0.0032
Occupation dummies	included		included		included		included		included		included	
Year dummies	included		included		included		included		included		included	
Country dummies	included		included		included		included		included		included	
Pseudo-R-square	0.0792											
Observations	62,439											

Source: EU-SILC, own calculations. – Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Permanent employment (PermE), temporary employment, (TempE) unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.26
Yearly transitions from temporary employment to different labour market states, crisis indicator, EU-SILC
 Before and during the crisis

	TempE		PermE		S		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Crisis indicator	-0.0013	0.0109	-0.0441***	0.0158	-0.0016	0.0013	0.0485**	0.0194	0.0003	0.0004	-0.0018	0.0015
Individual covariates	included		included		included		included		included		included	
Occupation dummies	included		included		included		included		included		included	
Country dummies	included		included		included		included		included		included	
Pseudo-R-squared	0.0781											
Observations	62,439											

Source: EU-SILC, own calculations. – Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Permanent employment (PermE), temporary employment, (TempE) unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.27
Yearly transitions from temporary employment to different labour market states, heterogeneous effects of the crisis by gender, EU-SILC
 Before and during the crisis

	TempE		PermE		S		U		Ed		I	
	Marg. Effect	S.E.	Marg. Effect	S.E.	Marg. Effect	S.E.	Marg. Effect	S.E.	Marg. Effect	S.E.	Marg. Effect	S.E.
Female		Reference category		Reference category		Reference category		Reference category		Reference category		Reference category
Male	0.0033	0.0223	0.0367***	0.0134	0.0099***	0.0022	-0.0256***	0.0076	0.0004	0.0006	-0.0245***	0.0048
Crisis indicator	0.0046	0.0165	-0.0292*	0.0175	0.0012*	0.0026	0.0249**	0.0118	0.0006	0.0004	-0.0021	0.0029
Crisis*Male	-0.0113	0.029	-0.0271	0.0178	-0.0042	0.0026	0.0421**	0.0164	-0.0005	0.0005	0.001	0.0047
Other individual covariates	included	included	included	included	included	included	included	included	included	included	included	included
Occupation dummies	included	included	included	included	included	included	included	included	included	included	included	included
Country dummies	included	included	included	included	included	included	included	included	included	included	included	included
Pseudo-R-squared	0.0786											
Observations	62,439											

Source: EU-SILC, own calculations. — Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Permanent employment (PermE), temporary employment, (TempE) unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.28
Yearly transitions from temporary employment to different labour market states, heterogeneous effects of the crisis by age groups, EU-SILC
 Before and during the crisis

	TempE		PermE		S		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Age 15-24	-0.0152	0.0268	0.0075	0.0286	-0.0109***	0.0012	-0.0052	0.0071	0.0205***	0.0023	0.0033	0.0048
Age 25-34	-0.0119	0.0081	0.0108	0.0087	-0.0034***	0.0010	0.0044	0.0090	0.005***	0.0008	-0.0049**	0.0024
Age 35-54	Reference category											
Age 55-65	-0.0459***	0.0141	-0.0517***	0.0193	0.0043	0.0032	-0.0047	0.0120	-0.003***	0.0009	0.1011***	0.0187
Crisis indicator	0.0077	0.0109	-0.0387*	0.0213	-0.0037	0.0024	0.0389**	0.0191	-0.0007	0.0008	-0.0035	0.0023
Crisis*Age 15-24	-0.0077	0.0323	-0.0302	0.0264	0.0116*	0.0060	0.0273**	0.0135	0.0010	0.0009	-0.0020	0.0040
Crisis*Age 25-34	-0.0176*	0.0090	-0.0006	0.0070	0.0034	0.0038	0.0075	0.0079	0.0014	0.0016	0.006*	0.0034
Crisis*Age 55-65	-0.0188	0.0158	0.0224	0.0194	-0.0044*	0.0024	0.0024	0.0095	-0.0048***	0.0012	0.0032	0.0043
Other individual covariates	included											
Occupation dummies	included											
Country dummies	included											
Pseudo-R-squared	0.0784											
Observations	62,439											

Source: EU-SILC, own calculations. – Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Permanent employment (PermE), temporary employment, (TempE) unemployment (U), self-employment (S) education (Ed) inactivity (I)

Table A.6.29
Yearly transitions from temporary employment to different labour market states, heterogeneous effects of the crisis by skill groups, EU-SILC
 Before and during the crisis

	TempE		PermE		S		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Low skilled (ISCED 0-2)	0.0123	0.0141	-0.0387***	0.0089	-0.0004	0.0019	0.0224***	0.0077	-0.0024***	0.0008	0.0068***	0.0022
Medium skilled (ISCED 3-4)	0.0234**	0.0092	0.0239**	0.0114	0.0001	0.0013	-0.036***	0.0074	-0.0006	0.0004	-0.0109***	0.0042
High skilled (ISCED 5)	0.0050	0.0125	-0.0391***	0.0110	0.0016	0.0019	0.0309**	0.0126	-0.0002	0.0004	0.0018	0.0018
Crisis indicator	-0.0147	0.0109	-0.0024	0.0225	-0.0068***	0.0019	0.0301	0.0239	0.0012	0.0008	-0.0074***	0.0019
Crisis*Low skilled	-0.0063	0.0093	-0.0169**	0.0084	-0.0027	0.0026	0.0278***	0.0102	0.0011	0.0009	-0.0030	0.0046
Other individual covariates	included	included	included	included	included	included	included	included	included	included	included	included
Occupation dummies	included	included	included	included	included	included	included	included	included	included	included	included
Country dummies	included	included	included	included	included	included	included	included	included	included	included	included
Pseudo-R-squared	0.0785											
Observations	62,439											

Source: EU-SILC, own calculations. — Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Permanent employment (PermE), temporary employment (TempE), unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.30
Yearly transitions from temporary employment to different labour market states, controlling for GDP growth, entire period, EU-SILC

	TempE		PermE		S		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Male	-0.0019	0.0113	0.026***	0.0086	0.0081***	0.0012	-0.0081*	0.0042	0.0001	0.0007	-0.0242***	0.0033
Age 15-24	-0.0260	0.0175	-0.0049	0.0201	-0.0083***	0.0013	0.0032	0.0060	0.0336***	0.0031	0.0024	0.0039
Age 25-34	-0.0209***	0.0073	0.0108	0.0076	-0.0023***	0.0007	0.0064	0.0074	0.0088***	0.0015	-0.0029*	0.0017
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.0542***	0.0173	-0.0453**	0.0220	0.0023	0.0032	-0.0035	0.0088	-0.005***	0.0014	0.1056***	0.0155
Low skilled (ISCED 0-2)	0.0059	0.0129	-0.0397***	0.0082	-0.0033***	0.0011	0.0358***	0.0091	-0.002**	0.0009	0.0035**	0.0016
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	0.0214**	0.0099	0.0166	0.0112	-0.0011	0.0012	-0.0246***	0.0048	-0.0002	0.0005	-0.012***	0.0028
Log Growth GDP	1.7484	1.7468	6.1511	3.8008	0.4759*	0.2678	-8.2548	3.4045	-0.1026*	0.0611	-0.0181	0.3292
Other individual covariates	included		included		included		included		included		included	
Occupation dummies	included		included		included		included		included		included	
Country dummies	included		included		included		included		included		included	
Pseudo-R-squared	0.0773											
Observations	62,439											

Source: EU-SILC, own calculations. — Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Permanent employment (PermE), temporary employment, (TempE) unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.31
Yearly transitions from temporary employment to different labour market states, controlling for GDP growth, before the crisis, EU-SILC

	TempE		PermE		S		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female		Reference category		Reference category		Reference category		Reference category		Reference category		Reference category
Male	-0.0008	0.0214	0.0335**	0.0154	0.0081***	0.0020	-0.0157***	0.0057	0.0004	0.0007	-0.0255	0.0049
Age 15-24	-0.0154	0.0277	-0.0021	0.0276	-0.0097***	0.0011	-0.0100	0.0074	0.0329***	0.0038	0.0042***	0.0054
Age 25-34	-0.0087	0.0092	0.0045	0.0083	-0.0029***	0.0008	0.0033	0.0094	0.0082***	0.0014	-0.0044***	0.0018
Age 35-54		Reference category		Reference category		Reference category		Reference category		Reference category		Reference category
Age 55-65	-0.0395***	0.0139	-0.0551***	0.0194	0.0022	0.0023	-0.0009	0.0112	-0.0048***	0.0014	0.0981***	0.0186
Low skilled (ISCED 0-2)	0.0148	0.0150	-0.0466***	0.0088	-0.0019*	0.0010	0.0293***	0.0065	-0.0023**	0.0009	0.0066**	0.0025
Medium skilled (ISCED 3-4)		Reference category		Reference category		Reference category		Reference category		Reference category		Reference category
High skilled (ISCED 5)	0.0153**	0.0075	0.0282**	0.0129	-0.0001	0.0021	-0.0316***	0.0078	-0.0004	0.0004	-0.0113	0.0042
Log Growth GDP	-5.3445	5.9832	7.1661	6.0580	0.9534	0.7814	-2.8329	3.0217	-0.0659	0.1304	0.1239	0.8112
Other individual covariates		included		included		included		included		included		included
Occupation dummies		included		included		included		included		included		included
Country dummies		included		included		included		included		included		included
Pseudo-R-squared	0.0776											
Observations	39,994											

Source: EU-SILC, own calculations. – Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Permanent employment (PermE), temporary employment, (TempE) unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.32
Yearly transitions from temporary employment to different labour market states, controlling for GDP growth, during the crisis, EU-SILC

	TempE		Perme		S		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Male	-0.0048	0.0094	0.0197**	0.0088	0.0073***	0.0017	-0.0012	0.0055	-0.0001	0.0003	-0.021***	0.0025
Age 15-24	-0.0316	0.0230	-0.0123	0.0125	-0.005*	0.0030	0.0362***	0.0137	0.0139***	0.0032	-0.0012	0.0042
Age 25-34	-0.0377***	0.0121	0.0187**	0.0085	-0.0009	0.0021	0.0162*	0.0094	0.0037***	0.0014	0.0000	0.0020
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.0798***	0.0280	-0.0304	0.0289	0.0009	0.0050	-0.0045***	0.0070	-0.0045***	0.0012	0.1183***	0.0118
Low skilled (ISCED 0-2)	-0.0110	0.0141	-0.0287**	0.0126	-0.0061***	0.0021	0.048***	0.0166	-0.0006	0.0004	-0.0017	0.0028
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	0.0294	0.0182	0.0006	0.0125	-0.0026	0.0029	-0.0146**	0.0071	0.0001	0.0003	-0.0129***	0.0019
Log Growth GDP	5.1250*	2.8814	-2.5047	2.3766	0.2553	0.3685	-2.0338*	1.1570	-0.0469	0.0455	-0.6949**	0.3358
Other individual covariates	included	included	included	included	included	included	included	included	included	included	included	included
Occupation dummies	included	included	included	included	included	included	included	included	included	included	included	included
Country dummies	included	included	included	included	included	included	included	included	included	included	included	included
Pseudo-R-squared	0.0892											
Observations	22,445											

Source: EU-SILC, own calculations. – Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: Permanent employment (PermE), temporary employment, (TempE) unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.33

Yearly transitions from selfemployment to different labour market states, EU-SILC

	S		E		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category	
Male	0.0298***	0.0073	-0.0064	0.0054	-0.0015	0.0016	0.0000	0.0000	-0.0218***	0.0028
Age 15-24	-0.1114***	0.0125	0.0827***	0.0138	0.0166***	0.0048	0.0003**	0.0001	0.0118**	0.0060
Age 25-34	-0.0391***	0.0039	0.0274***	0.0023	0.0073***	0.0023	0.0001***	0.0000	0.0043	0.0034
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.0513***	0.0047	-0.0203***	0.0029	-0.0081***	0.0012	-0.0000**	0.0000	0.0797***	0.0055
Single	Reference category		Reference category		Reference category		Reference category		Reference category	
Married	0.0209***	0.0054	-0.0121**	0.0049	-0.0075***	0.0028	-0.0000***	0.0000	-0.0012	0.0021
Low skilled (ISCED 0-2)	-0.0088***	0.0028	-0.0045**	0.0019	0.0037***	0.0011	-0.0000**	0.0000	0.0096***	0.0015
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	-0.0033	0.0037	0.0148***	0.0033	-0.0054***	0.0011	0.0000	0.0000	-0.0062***	0.0015
Number of children (<=4) in household	-0.0032	0.0046	0.0036	0.0033	-0.0014	0.0011	0.0000	0.0000	0.0011	0.0030
Number of children (5-14) in household	-0.0013	0.0019	0.0024***	0.0008	-0.0001	0.0009	-0.0000*	0.0000	-0.0010	0.0020
Number of working-age (15-64) persons in household	-0.0028*	0.0014	0.0016	0.0015	0.0008	0.0006	0.0000**	0.0000	0.0004	0.0009
Number of elderly (>=65) in household	0.0005	0.0036	-0.0060***	0.0019	-0.0001	0.0016	0.0000	0.0000	0.0057***	0.0012
Full-time employed partner in household	0.0075**	0.0031	0.0012	0.0021	-0.0055***	0.0019	0.0000	0.0000	-0.0032*	0.0018
Part-time employed partner in household	0.0114***	0.0028	-0.0002	0.0037	-0.0035***	0.0010	-0.0000*	0.0000	-0.0078**	0.0032
Inactive/unemployed partner in household	Reference category		Reference category		Reference category		Reference category		Reference category	
No partner in household	0.0035	0.0063	0.0069	0.0053	-0.0005	0.0017	0.0000	0.0000	-0.0099***	0.0018
Country dummies	included		included		included		included		included	
Year dummies	included		included		included		included		included	
Pseudo-R-squared	0.0962									
Observations	105,304									

Source: EU-SILC, own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed), inactivity (I).

Table A.6.34
Yearly transitions from selfemployment to different labour market states, EU-LFS

	S		E		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category	
Male	0.0499***	0.0012	-0.0333***	0.0053	-0.0006	0.0009	-0.0001***	0.0000	-0.0159***	0.0050
Age 15-24	-0.1828***	0.0670	0.1347***	0.0479	0.0188***	0.0009	0.0027***	0.0009	0.0266	0.0209
Age 25-34	-0.0488***	0.0038	0.0354***	0.0002	0.0070***	0.0004	0.0006***	0.0000	0.0058	0.0044
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.0154	0.0169	-0.0152**	0.0071	-0.0020	0.0029	-0.0001***	0.0000	0.0328***	0.0069
Single	Reference category		Reference category		Reference category		Reference category		Reference category	
Married	-0.0109	0.0068	0.0053***	0.0016	-0.0022***	0.0002	0.0000	0.0000	0.0077	0.0049
Low skilled (ISCED 0-2)	-0.0005	0.0130	-0.0066	0.0079	0.0003	0.0030	-0.0001***	0.0000	0.0068***	0.0021
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	0.0286***	0.0002	-0.0187***	0.0029	-0.0056***	0.0001	0.0000	0.0000	-0.0043	0.0030
Number of children (<=4) in household	0.0005	0.0034	-0.0067***	0.0006	-0.0015	0.0011	-0.0002***	0.0000	0.0079	0.0050
Number of children (5-14) in household	-0.0008	0.0026	0.0006***	0.0001	0.0004***	0.0000	0.0000***	0.0000	-0.0002	0.0025
Number of working-age (15-64) persons in household	-0.0038*	0.0020	0.0067***	0.0003	0.0003	0.0008	0.0000	0.0000	-0.0032***	0.0009
Number of elderly (>=65) in household	-0.0058	0.0066	0.0041***	0.0013	-0.0066*	0.0038	-0.0001***	0.0000	0.0084***	0.0015
Employed partner in household	0.0106	0.0087	0.0007	0.0022	-0.0072***	0.0016	0.0000***	0.0000	-0.0042	0.0049
Inactive/unemployed partner in household	Reference category		Reference category		Reference category		Reference category		Reference category	
No partner in household	-0.0093	0.0064	0.0063***	0.0007	-0.0032***	0.0011	0.0001***	0.0000	0.0061	0.0046
Country dummies	included		included		included		included		included	
Year dummies	included		included		included		included		included	
Pseudo-R-squared	0.0915									
Observations	161,281									

Source: EU-LFS own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.35

Yearly transitions from selfemployment to different labour market states, crisis indicator, EU-SILC

Before and during the crisis

	S		E		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Crisis indicator	0.0051	0.0047	-0.0088**	0.0041	0.0045*	0.0024	0.0000	0.0000	-0.0008	0.0022
<i>Other individual covariates</i>	<i>included</i>		<i>included</i>		<i>included</i>		<i>included</i>		<i>included</i>	
<i>Country dummies</i>	<i>included</i>		<i>included</i>		<i>included</i>		<i>included</i>		<i>included</i>	
<i>Year dummies</i>	<i>included</i>		<i>included</i>		<i>included</i>		<i>included</i>		<i>included</i>	
Pseudo-R-squared	0.0951									
Observations	105,304									

Source: EU-SILC, own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.36

Yearly transitions from selfemployment to different labour market states, crisis indicator, EU-LFS

Before and during the crisis

	S		E		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Crisis indicator	-0.0008	0.0040	-0.0037	0.0034	-0.0005	0.0031	0.0001**	0.0000	0.0051	0.0042
<i>Other individual covariates</i>	<i>included</i>		<i>included</i>		<i>included</i>		<i>included</i>		<i>included</i>	
<i>Country dummies</i>	<i>included</i>		<i>included</i>		<i>included</i>		<i>included</i>		<i>included</i>	
<i>Year dummies</i>	<i>included</i>		<i>included</i>		<i>included</i>		<i>included</i>		<i>included</i>	
Pseudo-R-squared	0.0893									
Observations	161,281									

Source: EU-LFS own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.37
Yearly transitions from selfemployment to different labour market states, heterogeneous effects of the crisis by gender, EU-SILC
 Before and during the crisis

	S		E		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female		Reference category		Reference category		Reference category		Reference category		Reference category
Male	0.0316***	0.0065	-0.0036	0.0054	-0.0040	0.0028	0.0000	0.0000	-0.0240***	0.0029
Crisis indicator	0.0059	0.0062	-0.0040	0.0039	0.0009	0.0031	0.0000	0.0000	-0.0028	0.0026
Crisis*Male	-0.0021	0.0056	-0.0075**	0.0029	0.0056	0.0039	0.0000	0.0000	0.0041**	0.0019
Other individual covariates	included	included	included	included	included	included	included	included	included	included
Country dummies	included	included	included	included	included	included	included	included	included	included
Year dummies	included	included	included	included	included	included	included	included	included	included
Pseudo-R-squared	0.0953									
Observations	105,304									

Source: EU-SILC, own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.38
Yearly transitions from selfemployment to different labour market states, heterogeneous effects of the crisis by gender, EU-LFS
 Before and during the crisis

	S		E		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Male	0.0506***	0.0020	-0.0320***	0.0058	-0.0014	0.0013	-0.0002***	0.0000	-0.0171***	0.0050
Crisis indicator	0.0004	0.0058	-0.0022	0.0025	-0.0021	0.0038	0.0000	0.0000	0.0038	0.0045
Crisis*Male	-0.0017	0.0033	-0.0030**	0.0013	0.0024	0.0015	0.0002***	0.0000	0.0022***	0.0005
Other individual covariates	<i>included</i>	<i>included</i>	<i>included</i>	<i>included</i>	<i>included</i>	<i>included</i>	<i>included</i>	<i>included</i>	<i>included</i>	<i>included</i>
Country dummies	<i>included</i>	<i>included</i>	<i>included</i>	<i>included</i>	<i>included</i>	<i>included</i>	<i>included</i>	<i>included</i>	<i>included</i>	<i>included</i>
Year dummies	<i>included</i>	<i>included</i>	<i>included</i>	<i>included</i>	<i>included</i>	<i>included</i>	<i>included</i>	<i>included</i>	<i>included</i>	<i>included</i>
Pseudo-R-squared	0.0896									
Observations	161,281									

Source: EU-LFS own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.39
Yearly transitions from selfemployment to different labour market states, heterogeneous effects of the crisis by age groups, EU-SILC
 Before and during the crisis

	S		E		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Age 15-24	-0.1187***	0.0155	0.0894***	0.0159	0.0213***	0.0085	0.0003*	0.0002	0.0077	0.0050
Age 25-34	-0.0404***	0.0041	0.0286***	0.0036	0.0086***	0.0027	0.0000**	0.0000	0.0031	0.0030
Age 35-54		Reference category		Reference category		Reference category		Reference category		Reference category
Age 55-65	-0.0472***	0.0073	-0.0206***	0.0033	-0.0096***	0.0014	-0.0000***	0.0000	0.0775***	0.0070
Crisis indicator	0.0054	0.0056	-0.0081*	0.0045	0.0050	0.0032	0.0000	0.0000	-0.0023	0.0030
Crisis*Age 15-24	0.0032	0.0106	-0.0075	0.0060	-0.0043	0.0038	0.0000	0.0000	0.0086	0.0079
Crisis*Age 25-34	0.0011	0.0059	-0.0021	0.0045	-0.0019	0.0023	0.0000	0.0000	0.0029	0.0068
Crisis*Age 55-65	-0.0081	0.0111	0.0010	0.0092	0.0049**	0.0019	0.0002	0.0003	0.0021	0.0031
Other individual covariates		included		included		included		included		included
Country dummies		included		included		included		included		included
Year dummies		included		included		included		included		included
Pseudo-R-squared	0.0952									
Observations	105,304									

Source: EU-SILC, own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.40
Yearly transitions from selfemployment to different labour market states, heterogeneous effects of the crisis by age groups, EU-LFS
 Before and during the crisis

	S		E		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Crisis indicator	-0.0036	0.0041	-0.0027	0.0055	-0.0033	0.0037	0.0000***	0.0000	0.0095	0.0058
Crisis*Age 15-24	-0.0052	0.0145	-0.0033	0.0029	0.0105	0.0112	-0.0000*	0.0000	-0.0020	0.0062
Crisis*Age 25-34	0.0016	0.0036	-0.0037	0.0043	0.0065**	0.0028	-0.0000***	0.0000	-0.0044**	0.0022
Crisis*Age 55-65	-0.0036	0.0023	0.0000	0.0072	0.0090***	0.0030	-0.0001***	0.0000	-0.0054***	0.0019
Other individual covariates	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Year dummies	included		included		included		included		included	
Pseudo-R-squared	0.0901									
Observations	161,281									

Source: EU-LFS own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.41
Yearly transitions from selfemployment to different labour market states, heterogeneous effects of the crisis by skill groups, EU-SILC
 Before and during the crisis

	S		E		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Low skilled (ISCED 0-2)	-0.0090*	0.0047	-0.0036	0.0039	0.0029	0.0019	-0.0000*	0.0000	0.0098***	0.0018
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	0.0004	0.0044	0.0112***	0.0032	-0.0053***	0.0016	0.0000	0.0000	-0.0063***	0.0015
Crisis indicator	0.0071	0.0063	-0.0104**	0.0050	0.0038	0.0026	0.0000	0.0000	-0.0006	0.0033
Crisis*Low skilled	0.0011	0.0086	-0.0025	0.0085	0.0018	0.0024	0.0000	0.0000	-0.0004	0.0026
Crisis*High skilled	-0.0081	0.0116	0.0081	0.0094	0.0000	0.0021	0.0000	0.0000	0.0000	0.0037
Other individual covariates	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Year dummies	included		included		included		included		included	
Pseudo-R-squared	0.0952									
Observations	105,304									

Source: EU-SILC, own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.42
Yearly transitions from selfemployment to different labour market states, heterogeneous effects of the crisis by skill groups, EU-LFS
 Before and during the crisis

	S		E		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Low skilled (ISCED 0-2)	0.0006	0.0097	-0.0079	0.0063	0.0006	0.0034	-0.0001***	0.0000	0.0067***	0.0000
Medium skilled (ISCED 3-4)		Reference category		Reference category		Reference category		Reference category		Reference category
High skilled (ISCED 5)	0.0309***	0.0031	-0.0221***	0.0035	-0.0051***	0.0006	-0.0000***	0.0000	-0.0037***	0.0010
Crisis indicator	0.0016	0.0089	-0.0070***	0.0014	0.0000	0.0032	0.0000*	0.0000	0.0053	0.0071
Crisis*Low skilled	-0.0041	0.0089	0.0046	0.0051	-0.0007	0.0008	0.0000	0.0000	0.0001	0.0047
Crisis*High skilled	-0.0084	0.0085	0.0114***	0.0026	-0.0020	0.0013	0.0001***	0.0000	-0.0012	0.0046
Other individual covariates		included		included		included		included		included
Country dummies		included		included		included		included		included
Year dummies		included		included		included		included		included
Pseudo-R-squared	0.0896									
Observations	161,281									

Source: EU-LFS own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.43
Yearly transitions from selfemployment to different labour market states, controlling for GDP growth, entire period, EU-SILC

	S		E		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category	
Male	0.0269	0.007	-0.0045	0.0048	-0.0014	0.0014	0.0000	0.0000	-0.021***	0.0028
Age 15-24	-0.104	0.0116	0.0786***	0.0158	0.0155***	0.0048	0.0003***	0.0001	0.0097	0.0065
Age 25-34	-0.0346	0.0043	0.0244***	0.0020	0.0061**	0.0024	0.0001	0.0000	0.0040	0.0033
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.0537	0.0046	-0.0186***	0.0031	-0.0074***	0.0013	0.0000	0.0000	0.0797***	0.0054
Low skilled (ISCED 0-2)	-0.01	0.0026	-0.0015	0.0014	0.0039***	0.0013	0.0000	0.0000	0.0076***	0.0016
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	-0.0066	0.0053	0.0125***	0.0036	-0.0039***	0.0010	0.0000	0.0000	-0.0021	0.0020
Log Growth GDP	-0.6726	0.6422	1.2031***	0.4674	-0.4929*	0.2962	0.0006	0.0006	-0.0382	0.2547
Other individual covariates	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Pseudo-R-squared	0.1056									
Observations	104,237									

Source: EU-SILC, own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.44
Yearly transitions from selfemployment to different labour market states, controlling for GDP growth, entire period, EU-LFS

	S		E		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category	
Male	0.0501***	0.0009	-0.0335***	0.0054	-0.0006	0.0010	-0.0001***	0.0000	-0.0160***	0.0054
Age 15-24	-0.1841***	0.0678	0.1344***	0.0485	0.0190***	0.0005	0.0033***	0.0009	0.0274	0.0207
Age 25-34	-0.0494***	0.0043	0.0357***	0.0001	0.0073***	0.0000	0.0006***	0.0000	0.0058	0.0043
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.0156	0.0164	-0.0153**	0.0071	-0.0021	0.0029	-0.0001***	0.0000	0.0331***	0.0064
Single	Reference category		Reference category		Reference category		Reference category		Reference category	
Married	-0.0109	0.0069	0.0055***	0.0017	-0.0023***	0.0002	0.0000	0.0000	0.0076	0.0050
Low skilled (ISCED 0-2)	-0.0003	0.0130	-0.0066	0.0079	0.0003	0.0031	-0.0001***	0.0000	0.0066***	0.0019
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	0.0287***	0.0000	-0.0189***	0.0028	-0.0057***	0.0001	0.0000	0.0000	-0.0041	0.0030
Log Growth GDP	0.6940***	0.1285	0.3953	0.5756	-0.3507	0.3787	-0.0070***	0.0024	-0.7316***	0.0670
Other individual covariates	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Pseudo-R-squared	0.0895									
Observations	161,281									

Source: EU-LFS, own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.45
Yearly transitions from selfemployment to different labour market states, controlling for GDP growth, before the crisis, EU-SILC

	S		E		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female		Reference category		Reference category		Reference category		Reference category		Reference category
Male	0.0321***	0.0069	-0.0051	0.0057	-0.0041	0.0026	0.0000	0.0000	-0.0229***	0.0026
Age 15-24	-0.1160***	0.0149	0.0911***	0.0165	0.0182**	0.0089	0.0002*	0.0001	0.0066	0.0047
Age 25-34	-0.0400***	0.0039	0.0291***	0.0039	0.0064***	0.0022	0.0000*	0.0000	0.0045	0.0033
Age 35-54		Reference category		Reference category		Reference category		Reference category		Reference category
Age 55-65	-0.0465***	0.0060	-0.0205***	0.0036	-0.0081***	0.0011	-0.0000***	0.0000	0.0751***	0.0057
Low skilled (ISCED 0-2)	-0.0112***	0.0035	-0.0043	0.0034	0.0047**	0.0019	-0.0000*	0.0000	0.0109***	0.0008
Medium skilled (ISCED 3-4)		Reference category		Reference category		Reference category		Reference category		Reference category
High skilled (ISCED 5)	-0.0032	0.0043	0.0127***	0.0030	-0.0040***	0.0013	0.0000	0.0000	-0.0056***	0.0015
Log Growth GDP	-2.9562**	1.3841	0.8149	0.8976	0.8330	0.5650	0.0008	0.0008	1.3075*	0.7712
Other individual covariates		included		included		included		included		included
Country dummies		included		included		included		included		included
Pseudo-R-squared	0.0946									
Observations	65,342									

Source: EU-SILC, own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.46
Yearly transitions from selfemployment to different labour market states, controlling for GDP growth, before the crisis, EU-LFS

	S		E		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category	
Male	0.0503***	0.0030	-0.0338***	0.0057	-0.0010	0.0015	-0.0000***	0.0000	-0.0154***	0.0042
Age 15-24	-0.1887***	0.0795	0.1470**	0.0729	0.0118*	0.0066	0.0004	0.0003	0.0296**	0.0136
Age 25-34	-0.0507***	0.0077	0.0377***	0.0039	0.0044***	0.0012	0.0003***	0.0000	0.0083*	0.0050
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.0131	0.0155	-0.0162*	0.0091	-0.0040*	0.0023	0.0000	0.0000	0.0333***	0.0041
Low skilled (ISCED 0-2)	-0.0006	0.0102	-0.0093	0.0060	0.0024	0.0027	-0.0000***	0.0000	0.0075***	0.0015
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	0.0317***	0.0015	-0.0217***	0.0045	-0.0053***	0.0002	-0.0000***	0.0000	-0.0047*	0.0028
Log Growth GDP	1.5897*	0.9634	-0.3848	1.4602	-0.2017	0.4193	-0.0020***	0.0006	-1.0012	0.0781
Other individual covariates	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Pseudo-R-squared	0.0963									
Observations	117,963									

Source: EU-LFS own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.47
Yearly transitions from selfemployment to different labour market states, controlling for GDP growth, during the crisis, EU-SILC

	S		E		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
<i>Female</i>	Reference category		Reference category		Reference category		Reference category		Reference category	
Male	0.0254***	0.0096	-0.0078	0.0055	0.0021	0.0015	0.0000	0.0000	-0.0197***	0.0038
Age 15-24	-0.1056***	0.0150	0.0720***	0.0133	0.0120**	0.0057	0.0001*	0.0001	0.0215**	0.0105
Age 25-34	-0.0357***	0.0065	0.0233***	0.0039	0.0078**	0.0032	0.0001***	0.0000	0.0046	0.0056
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.0572***	0.0082	-0.0202***	0.0056	-0.0076***	0.0014	-0.0000**	0.0000	0.0850***	0.0061
Low skilled (ISCED 0-2)	-0.0057	0.0068	-0.0045	0.0046	0.0025	0.0015	0.0000	0.0000	0.0077***	0.0028
<i>Medium skilled (ISCED 3-4)</i>	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	-0.0025	0.0080	0.0163**	0.0073	-0.0067***	0.0012	0.0000	0.0000	-0.0071***	0.0021
Log Growth GDP	1.5288**	0.6147	-0.2888	0.4501	-0.1517	0.1483	0.0013**	0.0007	-1.0896***	0.2812
<i>Other individual covariates</i>	included		included		included		included		included	
<i>Country dummies</i>	included		included		included		included		included	
Pseudo-R-squared	0.1062									
Observations	39,962									

Source: EU-SILC, own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level.

Table A.6.48
Yearly transitions from selfemployment to different labour market states, controlling for GDP growth, during the crisis, EU-LFS

	S		E		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category	
Male	0.0488***	0.0033	-0.0325***	0.0038	0.0002**	0.0001	0.0000	0.0000	-0.0165**	0.0069
Age 15-24	-0.1734***	0.0618	0.1129***	0.0110	0.0368*	0.0216	0.0000	0.0000	0.0238	0.0291
Age 25-34	-0.0461***	0.0011	0.0309***	0.0079	0.0132***	0.0045	0.0000	0.0000	0.0020	0.0023
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.0222	0.0186	-0.0137***	0.0036	0.0026	0.0050	0.0000	0.0000	0.0332***	0.0100
Low skilled (ISCED 0-2)	-0.0007	0.0152	-0.0005	0.0112	-0.0031	0.0020	0.0000	0.0000	0.0043**	0.0020
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	0.0223***	0.0031	-0.0137***	0.0001	-0.0054***	0.0002	0.0000	0.0000	-0.0032	0.0034
Log Growth GDP	-0.0198	1.1357	-0.2954	0.3410	-0.3962	0.2672	0.0000	0.0000	0.7114	1.7429
Other individual covariates	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Pseudo-R-squared	0.0894									
Observations	43,318									

Source: EU-LFS own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.49
Yearly transitions from unemployment to different labour market states, EU-SILC

	U		E		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category	
Male	0.0263*	0.0155	0.0483***	0.0133	0.0225***	0.0008	-0.0022**	0.0009	-0.0949***	0.0086
Age 15-24	-0.104***	0.0225	0.1037***	0.0140	-0.0123***	0.0038	0.0579***	0.0060	-0.0453***	0.0102
Age 25-34	-0.063***	0.0138	0.0766***	0.0116	-0.0014	0.0018	0.0172***	0.0033	-0.0293***	0.0071
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	0.0251	0.0175	-0.1887***	0.0213	-0.0158***	0.0025	-0.01***	0.0022	0.1894***	0.0209
Single	Reference category		Reference category		Reference category		Reference category		Reference category	
Married	-0.0046	0.0102	-0.0054	0.0069	-0.0016	0.0025	-0.0032***	0.0010	0.0148***	0.0056
Low skilled (ISCED 0-2)	0.069***	0.0157	-0.0723***	0.0144	-0.0113***	0.0014	-0.0049***	0.0008	0.0196***	0.0039
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	-0.0578***	0.0136	0.0691***	0.0137	0.0175***	0.0038	0.0041***	0.0015	-0.0329***	0.0044
Number of children (<=4) in household	-0.0124***	0.0045	-0.0185***	0.0049	0.0004	0.0031	-0.0025*	0.0014	0.033***	0.0030
Number of children (5-14) in household	-0.0013	0.0031	0.0005	0.0037	-0.0002	0.0014	0.0006	0.0006	0.0004	0.0024
Number of working-age (15-64) persons in household	0.0100*	0.0058	0.0006	0.0043	-0.0004	0.0006	0.0003	0.0003	-0.0104***	0.0033
Number of elderly (>=65) in household	0.0163**	0.0083	-0.0234***	0.0077	-0.0006	0.0019	0.0008	0.0014	0.0069***	0.0025
Full-time employed partner in household	-0.0586**	0.0257	0.0396	0.0264	0.0035	0.0043	0.0005	0.0015	0.015**	0.0065
Part-time employed partner in household	-0.0493*	0.0294	0.0569*	0.0316	0.0103*	0.0055	-0.0069***	0.0012	-0.0109	0.0143
Inactive/unemployed partner in household	Reference category		Reference category		Reference category		Reference category		Reference category	
No partner in household	0.0413**	0.0184	-0.0174	0.0129	-0.0134***	0.0048	0.0021	0.0028	-0.0125	0.0087
Country dummies	included		included		included		included		included	
Year dummies	included		included		included		included		included	
Pseudo-R-squared	0.0879									
Observations	69,281									

Source: EU-SILC, own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.50
Yearly transitions from unemployment to different labour market states, EU-LFS

	U		E		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category	
Male	0.0326***	0.0087	0.0083***	0.0014	0.0132**	0.0055	-0.0019***	0.0007	-0.0522***	0.0052
Age 15-24	-0.1236***	0.0284	0.1421***	0.0471	-0.0091**	0.0043	0.0334***	0.0016	-0.0429**	0.0215
Age 25-34	-0.0429***	0.0066	0.0841***	0.0066	0.0000	0.0042	0.0128***	0.0002	-0.0539***	0.0044
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.0599***	0.0071	-0.1505***	0.0054	-0.0144***	0.0022	-0.0087***	0.0004	0.2335***	0.0111
Single	Reference category		Reference category		Reference category		Reference category		Reference category	
Married	-0.0062	0.0041	0.0146***	0.0055	-0.0026***	0.0003	-0.0008	0.0007	-0.0051	0.0100
Low skilled (ISCED 0-2)	0.0066	0.0184	-0.0846***	0.0010	-0.0049	0.0078	-0.0014*	0.0007	0.0843***	0.0090
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	-0.0540**	0.0239	0.0286***	0.0028	0.0356**	0.0168	0.0030***	0.0008	-0.0131***	0.0035
Number of children (<=4) in household	-0.0546***	0.0202	-0.0320***	0.0049	0.0021***	0.0005	-0.0005	0.0005	0.0850***	0.0253
Number of children (5-14) in household	-0.0069***	0.0013	0.0021	0.0023	0.0019***	0.0006	0.0009***	0.0002	0.0021	0.0018
Number of working-age (15-64) persons in household	0.0071	0.0064	0.0007	0.0081	-0.0006	0.0011	-0.0001	0.0006	-0.0071	0.0141
Number of elderly (>=65) in household	-0.0243**	0.0096	-0.0233*	0.0134	0.0006*	0.0003	-0.0024***	0.0001	0.0494**	0.0227
Employed partner in household	-0.0607**	0.0238	0.0854***	0.0074	0.0025	0.0088	0.0028***	0.0006	-0.0300***	0.0082
Inactive/unemployed partner in household	Reference category		Reference category		Reference category		Reference category		Reference category	
No partner in household	-0.0024	0.0154	0.0181	0.0173	-0.0060	0.0055	0.0053***	0.0002	-0.0151**	0.0076
Country dummies	included		included		included		included		included	
Year dummies	included		included		included		included		included	
Pseudo-R-squared	0.0620									
Observations	83,662									

Source: EU-LFS own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.51
Yearly transitions from unemployment to different labour market states, crisis indicator, EU-SILC
 Before and during the crisis

	U		E		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Crisis indicator	0.0466	0.0301	-0.0401**	0.0167	-0.0030	0.0031	0.0018	0.0013	-0.0053	0.0125
Other individual covariates	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Year dummies	included		included		included		included		included	
Pseudo-R-squared	0.086									
Observations	69,281									

Source: EU-SILC, own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.52
Yearly transitions from unemployment to different labour market states, crisis indicator, EU-LFS
 Before and during the crisis

	U		E		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Crisis indicator	-0.0713***	0.0216	0.0083	0.0284	-0.0036	0.0034	0.0029***	0.0001	0.0637***	0.0033
Other individual covariates	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Year dummies	included		included		included		included		included	
Pseudo-R-squared	0.0607									
Observations	83,662									

Source: EU-LFS own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.53
Yearly transitions from unemployment to different labour market states, heterogeneous effects of the crisis by gender, EU-SILC
 Before and during the crisis

	U		E		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Male	0.0053	0.0137	0.0612***	0.0124	0.022***	0.0019	-0.0017	0.0012	-0.0867***	0.0088
Crisis indicator	0.0182	0.0277	-0.0193	0.0158	-0.0041	0.0028	0.0024*	0.0014	0.0028	0.0131
Crisis*Male	0.0534***	0.0074	-0.035***	0.0051	0.0018	0.0044	-0.0011	0.0007	-0.0191***	0.0044
Other individual covariates	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Year dummies	included		included		included		included		included	
Pseudo-R-squared	0.0863									
Observations	69,281									

Source: EU-SILC, own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.54
Yearly transitions from unemployment to different labour market states, heterogeneous effects of the crisis by gender, EU-LFS
 Before and during the crisis

	U		E		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Male	0.0199**	0.0086	0.0118***	0.0012	0.0154**	0.0060	-0.0037***	0.0004	-0.0433***	0.0018
Crisis indicator	-0.0951***	0.0195	0.0161	0.0237	0.0019	0.0051	0.0005	0.0006	0.0766***	0.0015
Crisis*Male	0.0392***	0.0011	-0.0146*	0.0081	-0.0072***	0.0007	0.0049***	0.0012	-0.0223**	0.0089
Other individual covariates	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Year dummies	included		included		included		included		included	
Pseudo-R-squared	0.0610									
Observations	83,662									

Source: EU-LFS own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.55
Yearly transitions from unemployment to different labour market states, heterogeneous effects of the crisis by age groups, EU-SILC
 Before and during the crisis

	U		E		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Age 15-24	-0.1039***	0.0280	0.1099***	0.0154	-0.0095**	0.0043	0.0572***	0.0126	-0.0537***	0.0103
Age 25-34	-0.0683***	0.0174	0.0829***	0.0112	0.0011	0.0021	0.0148***	0.0022	-0.0305***	0.0094
Age 35-54		Reference category		Reference category		Reference category		Reference category		Reference category
Age 55-65	0.0227	0.0218	-0.1872***	0.0225	-0.0138***	0.0038	-0.0098***	0.0022	0.1881***	0.0204
Crisis indicator	0.0390	0.0326	-0.031*	0.0174	0.0009	0.0036	0.0008	0.0027	-0.0098	0.0145
Crisis*Age 15-24	0.0005	0.0191	-0.0193	0.0127	-0.009***	0.0044	0.0002	0.0035	0.0276*	0.0141
Crisis*Age 25-34	0.0175	0.0116	-0.0163***	0.0071	-0.0062*	0.0032	0.0028	0.0038	0.0023	0.0109
Crisis*Age 55-65	0.0091	0.0215	-0.0049	0.0190	-0.0069	0.0058	-0.0016	0.0052	0.0044	0.0076
Other individual covariates		included		included		included		included		included
Country dummies		included		included		included		included		included
Year dummies		included		included		included		included		included
Pseudo-R-squared	0.0862									
Observations	69,281									

Source: EU-SILC, own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.56
Yearly transitions from unemployment to different labour market states, heterogeneous effects of the crisis by age groups, EU-LFS
 Before and during the crisis

	U		E		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Age 15-24	-0.1397***	0.0281	0.1363***	0.0380	-0.0105***	0.0026	0.0331***	0.0025	-0.0192*	0.0100
Age 25-34	-0.0420***	0.0122	0.0816***	0.0036	-0.0001	0.0055	0.0113***	0.0003	-0.0508***	0.0029
Age 35-54		Reference category		Reference category		Reference category		Reference category		Reference category
Age 55-65	-0.0691***	0.0016	-0.1589***	0.0076	-0.0154***	0.0032	-0.0102***	0.0002	0.2536***	0.0030
Crisis indicator	-0.0841***	0.0268	-0.0001	0.0246	-0.0050	0.0032	0.0024***	0.0004	0.0868***	0.0058
Crisis*Age 15-24	0.0540***	0.0036	0.0055	0.0152	0.0078	0.0102	-0.0005	0.0005	-0.0668**	0.0295
Crisis*Age 25-34	-0.0004	0.0204	0.0066	0.0069	0.0005	0.0049	0.0012***	0.0001	-0.0079	0.0222
Crisis*Age 55-65	-0.0062	0.0160	0.0305*	0.0177	0.0043	0.0067	0.0121***	0.0015	-0.0406***	0.0065
Other individual covariates		included		included		included		included		included
Country dummies		included		included		included		included		included
Year dummies		included		included		included		included		included
Pseudo-R-squared	0.0612									
Observations	83,662									

Source: EU-LFS own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.57
Yearly transitions from unemployment to different labour market states, heterogeneous effects of the crisis by skill groups, EU-SILC
 Before and during the crisis

	U		E		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Low skilled (ISCED 0-2)	0.0555***	0.0204	-0.0749***	0.0153	-0.0073***	0.0023	-0.0047***	0.0010	0.0314***	0.0066
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	-0.077***	0.0139	0.0767***	0.0124	0.0198***	0.0054	0.0029*	0.0016	-0.0224***	0.0073
Crisis indicator	0.0246	0.0217	-0.0395***	0.0129	0.0016	0.0027	0.0015	0.0016	0.0118	0.0105
Crisis*Low skilled	0.0320	0.0315	0.0065	0.0199	-0.0101*	0.0057	-0.0005	0.0017	-0.0279***	0.0105
Crisis*High skilled	0.0483**	0.0206	-0.0178	0.0135	-0.0041	0.0039	0.0021	0.0021	-0.0285**	0.0131
Other individual covariates	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Year dummies	included		included		included		included		included	
Pseudo-R-squared	0.0864									
Observations	69,281									

Source: EU-SILC, own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.58
Yearly transitions from unemployment to different labour market states, heterogeneous effects of the crisis by skill groups, EU-LFS
 Before and during the crisis

	U		E		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Low skilled (ISCED 0-2)	0.0061	0.0118	-0.0889***	0.0019	-0.0038	0.0099	-0.0017	0.0011	0.0884***	0.0026
Medium skilled (ISCED 3-4)										
High skilled (ISCED 5)	-0.0621***	0.0206	0.0110***	0.0018	0.0429***	0.0159	0.0006***	0.0001	0.0075***	0.0028
Crisis indicator	-0.0739***	0.0268	-0.0014	0.0303	-0.0005	0.0051	0.0021***	0.0007	0.0737***	0.0024
Crisis*Low skilled	-0.0015	0.0163	0.0155	0.0115	-0.0042	0.0060	0.0006	0.0010	-0.0105	0.0118
Crisis*High skilled	0.0134**	0.0067	0.0450***	0.0009	-0.0090***	0.0027	0.0059***	0.0022	-0.0553***	0.0027
Other individual covariates										
Country dummies										
Year dummies										
Pseudo-R-squared	0.0610									
Observations	83,662									

Source: EU-LFS own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.59
Yearly transitions from unemployment to different labour market states, controlling for GDP growth, entire period, EU-SILC

	U		E		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category	
Male	0.0259	(0.0163)	0.0489***	(0.0146)	0.0231***	(0.0009)	-0.0024**	(0.0010)	-0.0955***	(0.0081)
Age 15-24	-0.1096***	(0.0205)	0.1005***	(0.0124)	-0.0118***	(0.0040)	0.0626***	(0.0064)	-0.0417***	(0.0116)
Age 25-34	-0.0671***	(0.0140)	0.0775***	(0.0115)	-0.0013	(0.0020)	0.0186***	(0.0035)	-0.0278***	(0.0076)
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	0.0129	(0.0170)	-0.1877***	(0.0210)	-0.0151***	(0.0026)	-0.0098***	(0.0024)	0.1997***	(0.0230)
Low skilled (ISCED 0-2)	0.0747***	(0.0151)	-0.0761***	(0.0145)	-0.0120***	(0.0014)	-0.0047***	(0.0009)	0.0181***	(0.0046)
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	-0.0590***	(0.0131)	0.0681***	(0.0143)	0.0189***	(0.0044)	0.0043***	(0.0015)	-0.0322***	(0.0045)
Log Growth GDP	-12.5549***	(2.6336)	8.0014***	(1.2795)	1.3557***	(0.4046)	-0.2381**	(0.0942)	3.4359***	(1.2724)
Other individual covariates	included	included	included	included	included	included	included	included	included	included
Country dummies	included	included	included	included	included	included	included	included	included	included
Pseudo-R-squared	0.0877									
Observations	62,889									

Source: EU-SILC, own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.60
Yearly transitions from unemployment to different labour market states, controlling for GDP growth, entire period, EU-LFS

	U		E		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category	
Male	0.0333***	0.0086	0.0077***	0.0016	0.0132**	0.0055	-0.0019***	0.0007	-0.0523***	0.0054
Age 15-24	-0.1214***	0.0264	0.1410***	0.0450	-0.0090**	0.0044	0.0337***	0.0015	-0.0443**	0.0214
Age 25-34	-0.0423***	0.0054	0.0834***	0.0065	0.0000	0.0043	0.0130***	0.0001	-0.0541***	0.0055
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.0636***	0.0043	-0.1491***	0.0056	-0.0146***	0.0025	-0.0088***	0.0004	0.2361***	0.0078
Low skilled (ISCED 0-2)	0.0058	0.0171	-0.0837***	0.0004	-0.0050	0.0079	-0.0014*	0.0008	0.0843***	0.0080
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	-0.0522**	0.0218	0.0285***	0.0001	0.0359**	0.0180	0.0030***	0.0007	-0.0153***	0.0031
Log Growth GDP	1.4252	4.4103	4.9088	4.5132	0.0991	0.4202	-0.3275***	0.0054	-6.1057***	0.3095
Other individual covariates	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Pseudo-R-squared	0.0586									
Observations	83,662									

Source: EU-LFS own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.61
Yearly transitions from unemployment to different labour market states, controlling for GDP growth, before the crisis, EU-SILC

	U		E		S		Ed		S.E.	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.		
Female		Reference category		Reference category		Reference category		Reference category	Reference category	
Male	0.0050156	0.0151	0.0669332***	0.01536	0.0231801***	0.00222	-0.001971*	0.00119	-0.0931579***	0.00856
Age 15-24	-0.1135125***	0.01788	0.1193197***	0.0124	-0.0061998	0.00485	0.0530465***	0.0079	-0.0526538***	0.01242
Age 25-34	-0.0798213***	0.01415	0.0926725***	0.00824	0.0036107	0.00274	0.0138785***	0.00307	-0.0303404***	0.01161
Age 35-54		Reference category		Reference category		Reference category		Reference category		Reference category
Age 55-65	0.0190285	0.02078	-0.1987164***	0.02307	-0.0137035**	0.00456	-0.0077696***	0.00208	0.201161***	0.02613
Low skilled (ISCED 0-2)	0.0739047***	0.01535	-0.0877688***	0.01363	-0.0087085**	0.00241	-0.003188***	0.00102	0.0257607***	0.00514
Medium skilled (ISCED 3-4)		Reference category		Reference category		Reference category		Reference category		Reference category
High skilled (ISCED 5)	-0.0749383***	0.01562	0.0762871***	0.01245	0.0206092***	0.00603	0.0026501**	0.00108	-0.0246081***	0.00943
Other individual covariates		included		included		included		included		included
Log Growth GDP	-27.81679***	7.03885	15.22218***	4.61794	-0.4471286	2.85128	-0.2740594	0.45244	13.3158***	4.29092
Other individual covariates		included		included		included		included		included
Country dummies		included		included		included		included		included
Pseudo-R-squared	0.0881									
Observations	36,953									

Source: EU-SILC, own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.62
Yearly transitions from unemployment to different labour market states, controlling for GDP growth, before the crisis, EU-LFS

	U		E		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category	
Male	0.0181**	0.0075	0.0084***	0.0016	0.0165**	0.0068	-0.0033***	0.0003	-0.0397***	0.0027
Age 15-24	-0.1331***	0.0309	0.1248***	0.0442	-0.0099***	0.0024	0.0260***	0.0008	-0.0076	0.0150
Age 25-34	-0.0393***	0.0144	0.0740***	0.0060	-0.0002	0.0059	0.0094***	0.0004	-0.0438***	0.0020
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.0562***	0.0001	-0.1510***	0.0056	-0.0162***	0.0029	-0.0080***	0.0001	0.2314***	0.0029
Low skilled (ISCED 0-2)	0.0124	0.0150	-0.0844***	0.0003	-0.0038	0.0103	-0.0013	0.0008	0.0771***	0.0035
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	-0.0663***	0.0173	0.0161***	0.0023	0.0449**	0.0175	0.0005***	0.0000	0.0048**	0.0021
Log Growth GDP	-3.3027	3.1646	8.6636*	4.6580	-0.0219	0.6073	-0.1623	0.1325	-5.1767***	0.754
Other individual covariates	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Pseudo-R-squared	0.0570									
Observations	66,436									

Source: EU-LFS own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.63
Yearly transitions from unemployment to different labour market states, controlling for GDP growth, during the crisis, EU-SILC

	U		E		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female										
Male	0.048776***	0.01726	0.0295119**	0.01422	0.0207044***	0.00204	-0.0027576***	0.00076	-0.0962348***	0.00809
Age 15-24	-0.1028217***	0.02675	0.0782467***	0.01651	-0.0158361***	0.00422	0.0672916***	0.00882	-0.0268804**	0.01265
Age 25-34	-0.052751***	0.01278	0.060132***	0.017	-0.0060402**	0.00238	0.022267***	0.00555	-0.0236078***	0.00761
Age 35-54										
Age 55-65	0.0096	0.0167	-0.1764435***	0.0202	-0.0149637***	0.0026	-0.0109459***	0.0028	0.1927651***	0.0235
Low skilled (ISCED 0-2)	0.0741041***	0.0180	-0.0626955***	0.0166	-0.0146076***	0.0034	-0.0058409***	0.0011	0.0090	0.0060
Medium skilled (ISCED 3-4)										
High skilled (ISCED 5)	-0.0358125*	0.0199	0.0564319***	0.0191	0.013784***	0.0043	0.005707**	0.0024	-0.0401104***	0.0075
Log Growth GDP	-4.585665*	2.53327	-0.119832	1.9962	1.220691***	0.42925	-0.2357186	0.2406	3.720524**	1.66037
Other individual covariates		included		included		included		included		included
Country dummies		included		included		included		included		included
Pseudo-R-squared	0.0947									
Observations	25,936									

Source: EU-SILC, own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.64
Yearly transitions from unemployment to different labour market states, controlling for GDP growth, during the crisis, EU-LFS

	U		E		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
<i>Female</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Male	0.0636***	0.0112	0.0064***	0.0020	0.0062*	0.0032	0.0017	0.0013	-0.0779***	0.0114
Age 15-24	-0.1034***	0.0107	0.1814***	0.0384	-0.0071	0.0069	0.0471***	0.0037	-0.1180***	0.0315
Age 25-34	-0.0467***	0.0138	0.1044***	0.0015	0.0000	0.0002	0.0197***	0.0006	-0.0773***	0.0156
Age 35-54	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Age 55-65	-0.0677***	0.0131	-0.1469***	0.0037	-0.0103***	0.0012	-0.0105***	0.0012	0.2354***	0.0169
<i>Single</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
Married	-0.0077	0.0092	0.0238***	0.0038	0.0070	0.0048	-0.0001	0.0018	-0.0229**	0.0100
Low skilled (ISCED 0-2)	-0.0056	0.0204	-0.0844***	0.0008	-0.0074**	0.0029	-0.0015***	0.0004	0.0988***	0.0166
<i>Medium skilled (ISCED 3-4)</i>	<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>	
High skilled (ISCED 5)	-0.0320	0.0283	0.0619***	0.0020	0.0159	0.0145	0.0098***	0.0032	-0.0556***	0.0084
Log Growth GDP	-4.5754	3.0872	2.0826*	1.0689	0.2068	0.5806	-0.0963***	0.0065	2.3823	4.7133
<i>Other individual covariates</i>	<i>included</i>		<i>included</i>		<i>included</i>		<i>included</i>		<i>included</i>	
<i>Country dummies</i>	<i>included</i>		<i>included</i>		<i>included</i>		<i>included</i>		<i>included</i>	
Pseudo-R-squared	0.0673									
Observations	17,226									

Source: EU-LFS own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.65
Yearly transitions from unemployment to different labour market states (detailed employment states), EU-SILC

	U		PermE		TempE		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female												
Male (d)	0.0203	0.0134	0.0277***	0.0032	0.0224***	0.0094	0.0235***	0.0009	-0.0027***	Reference category	-0.0912***	0.0096
Age 15-24 (d)	-0.0997***	0.0243	0.0267***	0.0079	0.0647***	0.0083	-0.011**	0.0044	0.0584***	Reference category	-0.0391***	0.0114
Age 25-34 (d)	-0.0606***	0.0146	0.0278***	0.0082	0.0438***	0.0081	-0.0005	0.0020	0.0177***	Reference category	-0.0282***	0.0076
Age 35-54												
Age 55-65 (d)	0.0219	0.0166	-0.0662***	0.0063	-0.116***	0.0136	-0.0183***	0.0016	-0.0094***	Reference category	0.1882***	0.0229
Single												
Married (d)	-0.0029	0.0105	0.0085	0.0063	-0.0154***	0.0031	-0.0024	0.0025	-0.0027***	Reference category	0.0149**	0.0060
Low skilled (ISCED 0-2) (d)	0.065***	0.0165	-0.0359***	0.0085	-0.0282***	0.0069	-0.012***	0.0016	-0.0055***	Reference category	0.0167***	0.0040
Medium skilled (ISCED 3-4)												
High skilled (ISCED 5) (d)	-0.063***	0.0137	0.0359***	0.0049	0.0325***	0.0126	0.0201***	0.0038	0.0031***	Reference category	-0.0286***	0.0047
Number of children(<=4) in household	-0.0155***	0.0048	-0.0050	0.0033	-0.0097**	0.0042	0.0011	0.0032	-0.0028*	Reference category	0.0318***	0.0033
Number of children(5-14) in household	-0.0010	0.0029	-0.0038	0.0030	0.0043	0.0037	0.0005	0.0013	0.0003	Reference category	-0.0005	0.0024
Number of working-age (15-64) persons in household	0.0124**	0.0056	-0.0011	0.0018	-0.0025	0.0023	-0.0002	0.0005	0.0004	Reference category	-0.009***	0.0034
Number of elderly (>=65) in household	0.0191**	0.0083	-0.0059	0.0039	-0.0211***	0.0046	-0.0009	0.0019	0.0006	Reference category	0.0083***	0.0022
Full-time employed partner in household (d)	-0.048**	0.0244	0.0200*	0.0120	0.0048	0.0128	0.0021	0.0041	0.0002	Reference category	0.0209***	0.0039
Part-time employed partner in household (d)	-0.0269	0.0200	0.0100	0.0123	0.0151*	0.0082	0.0082	0.0051	-0.0061***	Reference category	-0.0004	0.0152
Inactive/unemployed partner in household												
No partner in household (d)	0.0448***	0.0171	-0.0078	0.0070	-0.0091	0.0062	-0.0158***	0.0049	0.0025	Reference category	-0.0146	0.0096
Country dummies												
Year dummies												
Pseudo-R-squared	0.0861											
Observations	65,872											

Source: EU-SILC, own calculations. – Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: permanent employment (PermE), temporary employment (TempE), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.66
Yearly transitions from unemployment to different labour market states (detailed employment states), crisis indicator, EU-SILC
 Before and during the crisis

	U		PermE		TempE		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Crisis indicator (d)	0.0468	0.0335	-0.0225***	0.0044	-0.0158	0.0160	-0.0035	0.0034	0.0013	0.0013	-0.0063	0.0130
Other individual covariates	included		included		included		included		included		included	
Country dummies	included		included		included		included		included		included	
Year dummies	included		included		included		included		included		included	
Pseudo-R-squared	0.0843											
Observations	65,872											

Source: EU-SILC, own calculations. — Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: permanent employment (PermE), temporary employment, (TempE) unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.67
Yearly transitions from unemployment to different labour market states (detailed employment states), heterogeneous effects of the crisis by gender, EU-SILC

	U		PermE		TempE		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female												
Male (d)	0.0012	0.0118	0.032***	0.0041	0.0289***	0.0081	0.0231***	0.0021	-0.0021*	0.0012	-0.0831***	0.0092
Crisis indicator (d)	0.0212	0.0308	-0.0151***	0.0052	-0.0053	0.0169	-0.0045	0.0030	0.0019	0.0014	0.0019	0.0135
Crisis*Male (d)	0.0493***	0.0068	-0.0127***	0.0044	-0.0175***	0.0036	0.0015	0.0048	-0.0010	0.0007	-0.0197***	0.0045
Other individual covariates	included	included	included	included	included	included	included	included	included	included	included	included
Country dummies	included	included	included	included	included	included	included	included	included	included	included	included
Year dummies	included	included	included	included	included	included	included	included	included	included	included	included
Pseudo-R-squared	0.0845											
Observations	65,872											

Source: EU-SILC, own calculations. — Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: permanent employment (PermE), temporary employment (TempE), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.68
Yearly transitions from unemployment to different labour market states (detailed employment states), heterogeneous effects of the crisis by age groups, EU-SILC

	U		PermE		TempE		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Age 15-24 (d)	-0.099***	0.0296	0.0288***	0.0085	0.0703***	0.0116	-0.0081*	0.0047	0.0535***	0.0123	-0.0455***	0.0109
Age 25-34 (d)	-0.0645***	0.0182	0.0293***	0.0065	0.0467***	0.0078	0.0022	0.0022	0.0137***	0.0018	-0.0275***	0.0105
Age 35-54		Reference category		Reference category		Reference category		Reference category		Reference category		Reference category
Age 55-65 (d)	0.0204	0.0205	-0.0659***	0.0060	-0.1138***	0.0159	-0.0173***	0.0024	-0.0095***	0.0023	0.1861***	0.0223
Crisis indicator (d)	0.0404	0.0367	-0.0202***	0.0060	-0.0102	0.0151	0.0005	0.0040	-0.0015	0.0018	-0.0091	0.0154
Crisis*Age 15-24 (d)	0.0051	0.0192	-0.0060	0.0061	-0.0124	0.0110	-0.0092*	0.0048	0.0025	0.0040	0.0200	0.0134
Crisis*Age 25-34 (d)	0.0153	0.0114	-0.0040	0.0075	-0.0070	0.0064	-0.0069**	0.0033	0.0058	0.0036	-0.0032	0.0117
Crisis*Age 55-65 (d)	0.0086	0.0247	-0.0001	0.0144	-0.0124	0.0169	-0.0038	0.0063	0.0008	0.0060	0.0068	0.0072
Other individual covariates	included	included	included	included	included	included	included	included	included	included	included	included
Country dummies	included	included	included	included	included	included	included	included	included	included	included	included
Year dummies	included	included	included	included	included	included	included	included	included	included	included	included
Pseudo-R-squared	0.0845											
Observations	65,872											

Source: EU-SILC, own calculations. – Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: permanent employment (PermE), temporary employment (TempE), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.69
Yearly transitions from unemployment to different labour market states (detailed employment states), heterogeneous effects of the crisis by skill groups, EU-SILC

	U		PermE		TempE		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Low skilled (ISCED 0-2) (d)	0.0503**	0.0203	-0.0402***	0.0065	-0.0257***	0.0097	-0.008***	0.0025	-0.0053***	0.0012	0.0288***	0.0072
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5) (d)	-0.0797***	0.0134	0.0462***	0.0051	0.0275*	0.0157	0.0219***	0.0060	0.0023	0.0014	-0.0182**	0.0084
Crisis indicator (d)	0.0236	0.0232	-0.0223***	0.0080	-0.0150	0.0121	0.0009	0.0029	0.0012	0.0017	0.0116	0.0115
Crisis*Low skilled (d)	0.0349	0.0329	0.0128	0.0123	-0.0079	0.0135	-0.0102*	0.0062	-0.0005	0.0018	-0.0291***	0.0107
Crisis*High skilled (d)	0.041*	0.0217	-0.0211*	0.0110	0.0105	0.0139	-0.0033	0.0044	0.0014	0.0018	-0.0286*	0.0149
Other individual covariates	included		included		included		included		included		included	
Country dummies	included		included		included		included		included		included	
Year dummies	included		included		included		included		included		included	
Pseudo-R-squared	0.0848											
Observations	65,872											

Source: EU-SILC, own calculations. – Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: permanent employment (PermE), temporary employment (TempE), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.70
Yearly transitions from unemployment to different labour market states (detailed employment states), controlling for GDP growth, entire period, EU-SILC Before and during the crisis

	U		PermE		TempE		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Male (d)	0.0209	0.0127	0.0272***	0.0033	0.0222***	0.0093	0.0236***	0.0009	-0.0025***	0.0009	-0.0918***	0.0097
Age 15-24 (d)	-0.0975***	0.0246	0.0263***	0.0079	0.0636***	0.0084	-0.0113	0.0045	0.0586***	0.0064	-0.0398***	0.0114
Age 25-34 (d)	-0.0596***	0.0145	0.0279***	0.0080	0.0432***	0.0083	-0.0007	0.0020	0.0178***	0.0033	-0.0285***	0.0074
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65 (d)	0.0194	0.0165	-0.0662***	0.0063	-0.1156***	0.0137	-0.0182***	0.0016	-0.0095***	0.0023	0.1901***	0.0222
Low skilled (ISCED 0-2) (d)	0.0643***	0.0161	-0.0358***	0.0084	-0.0280***	0.0068	-0.0120***	0.0016	-0.0055***	0.0009	0.0170***	0.0040
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5) (d)	-0.0620***	0.0144	0.0355***	0.0048	0.0322**	0.0125	0.0201***	0.0038	0.0031***	0.0008	Reference category	
Log Growth GDP	-9.6873*	4.9543	3.3305***	0.7886	5.4716**	2.5921	0.8375	0.6285	-0.0671	0.1611	0.1248	1.9945
Other individual covariates	included		included		included		included		included		included	
Country dummies	included		included		included		included		included		included	
Pseudo-R-squared	0.0843											
Observations	65,872											

Source: EU-SILC, own calculations. — Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: permanent employment (PermE), temporary employment (TempE), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.71
Yearly transitions from unemployment to different labour market states (detailed employment states), controlling for GDP growth, before the crisis, EU-SILC

	U		PermE		TempE		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Male (d)	0.0034	0.0123	0.036***	0.0046	0.0283***	0.0084	0.0234***	0.0020	-0.0021**	0.0010	-0.0891***	0.0097
Age 15-24 (d)	-0.1009***	0.0228	0.0311***	0.0091	0.0775***	0.0104	-0.0069	0.0048	0.0484***	0.0070	-0.0492***	0.0105
Age 25-34 (d)	-0.0681***	0.0145	0.0285***	0.0067	0.0525***	0.0067	0.004*	0.0024	0.0125***	0.0028	-0.0293***	0.0104
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65 (d)	0.0322	0.0206	-0.069***	0.0063	-0.1204***	0.0161	-0.0184***	0.0026	-0.0085***	0.0018	0.1841***	0.0252
Low skilled (ISCED 0-2) (d)	0.0597***	0.0167	-0.0421***	0.0065	-0.0289***	0.0085	-0.0089***	0.0021	-0.0044***	0.0011	0.0247***	0.0051
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5) (d)	-0.0700	0.0160	0.0502***	0.0052	0.0214	0.0144	0.0196***	0.0069	0.0022**	0.0011	-0.0234**	0.0103
Log Growth GDP	-10.6732*	5.7946	3.3929**	1.5956	2.5188	1.8781	1.8514*	1.0480	0.0237	0.2994	2.8865	2.6845
Other individual covariates	included		included		included		included		included		included	
Country dummies	included		included		included		included		included		included	
Pseudo-R-squared	0.0881											
Observations	41,136											

Source: EU-SILC, own calculations. — Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: permanent employment (PermE), temporary employment (TempE), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.72
Yearly transitions from unemployment to different labour market states (detailed employment states), controlling for GDP growth, during the crisis, EU-SILC

	U		PermE		TempE		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category											
Male (d)	0.0358***	0.0126	0.0153***	0.0025	0.0179	0.0124	0.0239***	0.0023	-0.0033***	0.0008	-0.0899***	0.0088
Age 15-24 (d)	-0.0949***	0.0278	0.0185**	0.0083	0.0466***	0.0078	-0.0167***	0.0055	0.07***	0.0092	-0.0236*	0.0142
Age 25-34 (d)	-0.0516***	0.0137	0.0266**	0.0130	0.0324***	0.0113	-0.0066**	0.0029	0.0247***	0.0047	-0.0255***	0.0075
Age 35-54	Reference category											
Age 55-65 (d)	0.0015	0.0184	-0.0633***	0.0081	-0.1076***	0.0102	-0.0172***	0.0032	-0.0095***	0.0030	0.1961***	0.0239
Low skilled (ISCED 0-2) (d)	0.0710***	0.0197	-0.0263**	0.0129	-0.0265***	0.0058	-0.0167***	0.0040	-0.0062***	0.0011	0.0048	0.0053
Medium skilled (ISCED 3-4)	Reference category											
High skilled (ISCED 5) (d)	-0.0454**	0.0215	0.0143	0.0125	0.0441***	0.0101	0.0185***	0.0043	0.0038***	0.0011	-0.0353***	0.0080
Log Growth GDP	1.1605	2.1573	-0.2067	0.5054	3.7773***	1.4461	-0.3998	0.3464	0.1071	0.1858	-4.4385***	1.2974
Other individual covariates	included											
Country dummies	included											
Pseudo-R-squared	0.0910											
Observations	24,736											

Source: EU-SILC, own calculations. – Notes: No data available for Denmark and the United Kingdom. Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: permanent employment (PermE), temporary employment, (TempE) unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.73
Yearly transitions from education to different labour market states, EU-SILC

	Ed		E		S		U		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category	
Male	-0.0186***	0.0042	0.0115***	0.0037	0.0034***	0.0005	0.0065***	0.0024	-0.0028	0.0025
Age 15-24	0.3057***	0.0393	-0.0743***	0.0187	-0.0379***	0.0087	-0.1226***	0.0159	-0.0708***	0.0246
Age 25-34	0.0519***	0.0155	-0.0079	0.0104	-0.0046***	0.0006	-0.0255***	0.0040	-0.0138***	0.0041
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.1912	0.1210	-0.0360	0.0398	0.0017	0.0039	0.0164	0.0302	0.2092**	0.0826
Single	Reference category		Reference category		Reference category		Reference category		Reference category	
Married	0.0243	0.0437	-0.0297	0.0218	0.0025	0.0018	-0.0067	0.0153	0.0095	0.0100
Low skilled (ISCED 0-2)	0.0383*	0.0210	-0.0566***	0.0131	-0.0033***	0.0010	0.0096	0.0078	0.012***	0.0021
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	-0.081***	0.0128	0.0653***	0.0075	0.0031***	0.0011	0.0103	0.0065	0.0024	0.0032
Number of children (<=4) in household	-0.0276***	0.0085	0.0040	0.0058	-0.0001	0.0007	0.0122***	0.0037	0.0116***	0.0029
Number of children (5-14) in household	0.0161***	0.0035	-0.0116***	0.0035	-0.0002	0.0004	-0.0024**	0.0012	-0.0018***	0.0008
Number of working-age persons (15-64) in household	-0.0025	0.0028	-0.0014	0.0024	0.0004	0.0004	0.0041***	0.0015	-0.0006	0.0010
Number of elderly(>=65) in household	-0.0036	0.0065	-0.0056	0.0067	-0.0003	0.0012	0.0078***	0.0021	0.0018	0.0015
Full-time employed partner in household	-0.0607***	0.0153	0.0552***	0.0102	0.0025	0.0036	-0.0131	0.0093	0.0161**	0.0076
Part-time employed partner in household	0.0253	0.0545	0.0081	0.0377	-0.0012	0.0032	-0.0284**	0.0117	-0.0037	0.0084
Inactive/unemployed partner in household	Reference category		Reference category		Reference category		Reference category		Reference category	
No partner in household	0.0615**	0.0286	-0.0373	0.0238	-0.0013	0.0032	-0.0181	0.0152	-0.0048	0.0093
Occupation dummies	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Year dummies	included		included		included		included		included	
Pseudo-R-squared	0.0776									
Observations	120,934									

Source: EU-SILC, own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.74
Yearly transitions from education to different labour market states, EU-LFS

	Ed		E		S		U		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category	
Male	-0.0057	0.0050	0.0027	0.0032	0.0008	0.0006	0.0027**	0.0011	-0.0005***	0.0000
Age 15-24	0.0627*	0.0331	-0.0257	0.0186	-0.0071	0.0064	-0.0174***	0.0006	-0.0125*	0.0075
Age 25-34	0.0431	0.0281	-0.0160	0.0230	-0.0014	0.0009	-0.0117***	0.0016	-0.0140***	0.0027
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65	-0.7790***	0.0447	0.1819***	0.0301	0.0037	0.0044	0.0150*	0.0084	0.5784***	0.0785
Single	Reference category		Reference category		Reference category		Reference category		Reference category	
Married	0.0300***	0.0052	-0.0485***	0.0101	-0.0003***	0.0000	0.0055	0.0045	0.0133***	0.0005
Low skilled (ISCED 0-2)	0.1331***	0.0252	-0.0825***	0.0126	-0.0043***	0.0004	-0.0154	0.0112	-0.0309***	0.0009
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5)	-0.3724***	0.0681	0.2880***	0.0570	0.0040***	0.0010	0.0730***	0.0071	0.0083***	0.0030
Number of children(<=4) in household	0.0069	0.0154	-0.0229**	0.0115	-0.0009	0.0008	0.0035*	0.0020	0.0135***	0.0010
Number of children(5-14) in household	0.0060	0.0136	-0.0030	0.0070	-0.0001	0.0002	0.0004	0.0025	-0.0033	0.0038
Number of working-age (15-64) persons in household	0.0076	0.0070	-0.0094*	0.0050	-0.0009***	0.0000	0.0021**	0.0009	0.0006	0.0011
Number of elderly(>=65) in household	0.0132	0.0113	-0.0194**	0.0097	-0.0002*	0.0001	0.0011	0.0024	0.0052***	0.0008
Employed partner in household	-0.0044***	0.0000	-0.0054***	0.0011	-0.0002	0.0003	-0.0051	0.0032	0.0151***	0.0045
Inactive/unemployed partner in household	Reference category		Reference category		Reference category		Reference category		Reference category	
No partner in household	0.0897***	0.0033	-0.0778***	0.0030	-0.0030***	0.0004	-0.0088***	0.0033	0.0000	0.0032
Year dummies	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Pseudo-R-squared	0.1352									
Observations	172,399									

Source: EU-LFS own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.75
Yearly transitions from education to different labour market states, crisis indicator, EU-SILC
 Before and during the crisis

	Ed		E		S		U		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Crisis indicator	0.0120**	0.0055	-0.0252***	0.0058	0.0002	0.0006	0.0151***	0.0034	-0.0021	0.0026
Individual covariates		included		included		included		included		included
Occupation dummies		included		included		included		included		included
Country dummies		included		included		included		included		included
Pseudo-R-squared	0.0769									
Observations	120,934									

Source: EU-SILC, own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.76
Yearly transitions from education to different labour market states, crisis indicator, EU-LFS
 Before and during the crisis

	Ed		E		S		U		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Crisis indicator	0.0039	0.0099	0.0019	0.0078	-0.0008**	0.0004	-0.0011	0.0008	-0.0039***	0.0009
Individual covariates	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Pseudo-R-squared	0.1337									
Observations	172,399									

Source: EU-LFS own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.77
Yearly transitions from education to different labour market states, controlling for GDP growth, entire period, EU-SILC

	Ed		E		S		U		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
<i>Female</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>
Male	-0.0188***	0.0041	0.0116***	0.0037	0.0034***	0.0005	0.0066***	0.0024	-0.0028	0.0025
Age 15-24	0.3056***	0.0395	-0.0736***	0.0189	-0.0376***	0.0087	-0.1238***	0.0160	-0.0705***	0.0245
Age 25-34	0.0513***	0.0157	-0.0069	0.0106	-0.0046***	0.0006	-0.026***	0.0041	-0.0138***	0.0041
Age 35-54		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>
Age 55-65	-0.1920	0.1206	-0.0346	0.0407	0.0015	0.0038	0.0149	0.0295	0.2102**	0.0817
Low skilled (ISCED 0-2)	0.0385*	0.0209	-0.0569***	0.0130	-0.0033***	0.0009	0.0097	0.0080	0.012***	0.0022
<i>Medium skilled (ISCED 3-4)</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>		<i>Reference category</i>
High skilled (ISCED 5)	-0.081***	0.0127	0.0648***	0.0074	0.0081***	0.0012	0.0108	0.0066	0.0023	0.0032
Log Growth GDP	-1.1011	0.7178	2.4125***	0.6148	-0.0425	0.0797	-1.2209***	0.4154	-0.048	0.2941
Other individual covariates		included		included		included		included		included
Occupation dummies		included		included		included		included		included
Country dummies		included		included		included		included		included
Pseudo-R-squared	0.0757									
Observations	120,934									

Source: EU-SILC, own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.78
Yearly transitions from education to different labour market states, controlling for GDP growth, entire period, EU-LFS

	Ed		E		S		U		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female	Reference category		Reference category		Reference category		Reference category		Reference category	
Male (d)	-0.0057	0.0051	0.0027	0.0032	0.0009	0.0006	0.0027**	0.0012	-0.0005***	0.0001
Age 15-24 (d)	0.0640**	0.0325	-0.0251	0.0184	-0.0073	0.0066	-0.0176***	0.0001	-0.0140*	0.0075
Age 25-34 (d)	0.0440	0.0274	-0.0162	0.0226	-0.0014	0.0009	-0.0118***	0.0013	-0.0146***	0.0026
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65 (d)	-0.7769***	0.0475	0.1987***	0.0290	0.0035	0.0044	0.0153*	0.0090	0.5594***	0.0803
Low skilled (ISCED 0-2) (d)	0.1337***	0.0250	-0.0830***	0.0124	-0.0043***	0.0004	-0.0154	0.0111	-0.0310***	0.0011
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5) (d)	-0.3749***	0.0679	0.2887***	0.0574	0.0040***	0.0010	0.0738**	0.0064	0.0083**	0.0033
Log Growth GDP	-2.3388	1.6569	0.9778	1.8686	0.0906**	0.0412	0.3632	0.2323	0.9072***	0.0198
Other individual covariates	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Pseudo-R-squared	0.1337									
Observations	172,399									

Source: EU-LFS own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.79
Yearly transitions from education to different labour market states, controlling for GDP growth, before the crisis, EU-SILC

	Ed			E			S			U			I		
	Marg. effect	S.E.	Reference category	Marg. effect	S.E.	Reference category	Marg. effect	S.E.	Reference category	Marg. effect	S.E.	Reference category	Marg. effect	S.E.	Reference category
Female															
Male	-0.0159***	0.0051	Reference category	0.012***	0.0038	Reference category	0.0025***	0.0006	Reference category	0.0021	0.0032	Reference category	-0.0007	0.0025	Reference category
Age 15-24	0.2755***	0.0445		-0.069**	0.0319		-0.0349***	0.0078		-0.0959***	0.0149		-0.0757***	0.0279	
Age 25-34	0.0315	0.0235		0.0082	0.0210		-0.0043***	0.0006		-0.0188***	0.0042		-0.0166***	0.0042	
Age 35-54			Reference category			Reference category			Reference category			Reference category			Reference category
Age 55-65	-0.2353*	0.1311		-0.0229	0.0459		0.0028	0.0047		0.0169	0.0240		0.2385***	0.0860	
Low skilled (ISCED 0-2)	0.0492**	0.0235		-0.0627***	0.0173		-0.0024***	0.0009		0.0050	0.0063		0.0109***	0.0022	
Medium skilled (ISCED 3-4)			Reference category			Reference category			Reference category			Reference category			Reference category
High skilled (ISCED 5)	-0.0696***	0.0130		0.0596***	0.0100		0.004***	0.0010		0.0042	0.0060		0.0018	0.0027	
Log Growth GDP	-1.4183	1.9244		-0.0593	1.9328		0.0407	0.1942		1.9326	1.3003		-0.4956	0.9795	
Other individual covariates		included			included			included			included			included	
Occupation dummies		included			included			included			included			included	
Country dummies		included			included			included			included			included	
Pseudo-R-squared	0.0769														
Observations	75,407														

Source: EU-SILC, own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.80
Yearly transitions from education to different labour market states, controlling for GDP growth, before the crisis, EU-LFS

	Ed		E		S		U		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Log Growth GDP	-3.2428***	0.3318	2.3818***	0.2153	0.1329***	0.0367	-0.0061	0.501	0.7341**	0.3478
Female	Reference category		Reference category		Reference category		Reference category		Reference category	
Male (d)	-0.0048	0.0074	0.0026	0.0041	0.0005	0.0007	0.0023	0.0022	-0.0005	0.0004
Age 15-24 (d)	0.0561	0.0554	-0.0129	0.0258	-0.0103	0.0093	-0.0186***	0.0064	-0.0143	0.0138
Age 25-34 (d)	0.0421	0.041	-0.0135	0.0322	-0.0018*	0.0011	-0.0128***	0.0024	-0.0140***	0.0053
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65 (d)	-0.8354***	0.001	0.2007***	0.0364	0.0012	0.0059	0.0102*	0.0052	0.6233***	0.0352
Low skilled (ISCED 0-2) (d)	0.1322***	0.0303	-0.0826***	0.0162	-0.0051***	0.0008	-0.0155	0.0118	-0.0290***	0.0016
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5) (d)	-0.4493***	0.0892	0.3405***	0.0745	0.0078***	0.0011	0.0843***	0.0101	0.0166***	0.0035
Other individual covariates	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Pseudo-R-squared	0.1361									
Observations	130,993									

Source: EU-LFS own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.81
Yearly transitions from education to different labour market states, controlling for GDP growth, during the crisis, EU-SILC

	Ed		E		S		U		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Female		Reference category		Reference category		Reference category		Reference category		Reference category
Male	-0.0236***	0.0055	0.0126**	0.0054	0.0035***	0.0008	0.0126**	0.0053	-0.0051	0.0032
Age 15-24	0.355***	0.0536	-0.0906***	0.0266	-0.0307**	0.0130	-0.175***	0.0322	-0.0587***	0.0211
Age 25-34	0.0801***	0.0220	-0.0293*	0.0162	-0.0036***	0.0008	-0.038***	0.0061	-0.0092**	0.0045
Age 35-54		Reference category		Reference category		Reference category		Reference category		Reference category
Age 55-65	-0.0687	0.1474	-0.0585*	0.0332	-0.0041***	0.0007	0.0271	0.0692	0.1043	0.0806
Low skilled (ISCED 0-2)	0.0217	0.0177	-0.0482***	0.0090	-0.0032***	0.0008	0.0161	0.0104	0.0136***	0.0044
Medium skilled (ISCED 3-4)		Reference category		Reference category		Reference category		Reference category		Reference category
High skilled (ISCED 5)	-0.0989***	0.0174	0.0745***	0.0179	0.0012	0.0017	0.0203**	0.0085	0.0029	0.0046
Log Growth GDP	2.0482	1.3038	-2.1906*	1.1861	-0.0771	0.1377	0.5449	0.9099	-0.3254	0.4488
Other individual covariates		included		included		included		included		included
Occupation dummies		included		included		included		included		included
Country dummies		included		included		included		included		included
Pseudo-R-squared	0.0794									
Observations	45,527									

Source: EU-SILC, own calculations. – Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.82
Yearly transitions from education to different labour market states, controlling for GDP growth, during the crisis, EU-LFS

	Ed		E		S		U		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Log Growth GDP	-1.3297	0.8826	-0.0026	0.4769	-0.0156**	0.0065	0.7396	0.4971	0.6084***	0.0978
Female	Reference category		Reference category		Reference category		Reference category		Reference category	
Male (d)	-0.0065***	0.002	0.0025	0.002	0.0009	0.0007	0.0034***	0.0004	-0.0004	0.0004
Age 15-24 (d)	0.0733***	0.004	-0.0423***	0.0095	-0.0022	0.0025	-0.0175**	0.0079	-0.0113***	0
Age 25-34 (d)	0.0440***	0.013	-0.0184	0.0123	-0.0005	0.0005	-0.0106***	0.0002	-0.0145***	0.0004
Age 35-54	Reference category		Reference category		Reference category		Reference category		Reference category	
Age 55-65 (d)	-0.7013***	0.0911	0.2111***	0.0384	0.0062**	0.0024	0.0202	0.0135	0.4638***	0.1408
Low skilled (ISCED 0-2) (d)	0.1358***	0.017	-0.0843***	0.0059	-0.0023***	0.0002	-0.0153	0.0102	-0.0339***	0.0011
Medium skilled (ISCED 3-4)	Reference category		Reference category		Reference category		Reference category		Reference category	
High skilled (ISCED 5) (d)	-0.2865***	0.0405	0.2278***	0.0354	0.0004	0.0003	0.0588**	0.0035	-0.0005	0.0019
Other individual covariates	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Pseudo-R-squared	0.1356									
Observations	41,406									

Source: EU-LFS own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.83
Monthly transitions from unemployment to different labour market states, crisis indicator, EU-SILC

	U		E		S		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Crisis indicator	0.0679879***	0.0115	-0.0625726***	0.0120	-0.0024025**	0.0011	-0.0002	0.0002	-0.0028165***	0.0007
Individual covariates	included		included		included		included		included	
Country dummies	included		included		included		included		included	
Pseudo-R-squared	0.1407									
Observations	133,876									

Source: EU-SILC, own calculations. — Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.84
Yearly transitions from employment to different labor market states, controlling for economic and financial activity

	E		S		U		Ed		I	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Log Growth GDP	2.4274***	0.8292	-0.5533**	0.2617	-2.4788***	0.3744	0.1118**	0.0470	0.4929	0.3350
Domestic Credits as share of GDP	0.0002	0.0001	-0.0001	0.0001	0.0000	0.0001	0.0000*	0.0000	-0.0001*	0.0001
Equity prices	0.0001***	0.0000	0.0000	0.0000	-0.0001***	0.0000	0.0000	0.0000	-0.0000*	0.0000
Interest rates	-0.0016**	0.0007	0.0011***	0.0002	-0.0007**	0.0003	-0.0004***	0.0001	0.0016***	0.0004
Log Growth Exchange rates	0.7237***	0.2677	-0.6043***	0.0851	-0.3219***	0.1034	0.0933	0.0626	0.1092	0.1285
Log Growth House Price Index	-0.4119**	0.1854	0.1594***	0.0590	0.3377***	0.0897	-0.0280***	0.0057	-0.0573	0.0653
Individual covariates	included	included	included	included	included	included	included	included	included	included
Country dummies	included	included	included	included	included	included	included	included	included	included
Country dummies	included	included	included	included	included	included	included	included	included	included
Pseudo-R-squared	0.1268									
Observations	109992									

Source: EU-SILC. – Notes: Sources for variables for economic and financial activity according to Tab. App.2.

Table A.6.85
Yearly transitions from employment to different labor market states for selected countries, EU-SILC

	EE		ES		EU		EEd		EI	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Log Growth GDP	1.7309***	-0.4197	-0.4307**	-0.1794	-1.1808***	-0.2951	-0.0278	-0.0292	-0.0916	-0.2434
Crisis	0.0031	-0.0029	-0.0003	-0.0014	0.0024	-0.0019	-0.0003	-0.0003	-0.0048***	-0.0017
Country dummy Spain	-0.0002	-0.0026	0.0038***	-0.0014	0.0040**	-0.0018	0.0010***	-0.0004	-0.0086***	-0.0012
Country dummy France	0.0286***	-0.0023	-0.0100***	-0.0009	-0.0071***	-0.0016	0.0003	-0.0003	-0.0118***	-0.0013
Country dummy Greece	-0.0021	-0.0038	0.0088***	-0.0025	-0.003	-0.0022	0.0006	-0.0004	-0.0043**	-0.0019
Country dummy Italy	0.0100***	-0.0026	0.0080***	-0.0017	-0.0157***	-0.0014	0.0004	-0.0003	-0.0028*	-0.0015
Country dummy Poland	Reference category		Reference category		Reference category		Reference category		Reference category	
Country dummy Sweden	0.0198***	-0.0027	-0.0006	-0.0014	-0.0151***	-0.0013	0.0069***	-0.0016	-0.0110***	-0.0011
Country dummy UK	0.0336***	-0.0025	-0.0038***	-0.0012	-0.0255***	-0.0015	0.0017***	-0.0005	-0.0061***	-0.0015
Country dummy Spain*Crisis	-0.0117***	-0.0044	-0.0048***	-0.0012	0.0167***	-0.0034	0.0007	-0.0005	-0.0009	-0.0025
Country dummy France*Crisis	-0.0107**	-0.0046	0.0023	-0.0026	0.0046	-0.0028	0.0001	-0.0004	0.0037	-0.0026
Country dummy Greece*Crisis	0.003	-0.005	-0.0043***	-0.0015	0.0037	-0.0036	-0.0005*	-0.0003	-0.0019	-0.0032
Country dummy Italy*Crisis	-0.0063*	-0.0037	-0.0022*	-0.0013	0.0035	-0.0027	0.0006	-0.0005	0.0044*	-0.0023
Country dummy Poland*Crisis	Reference category		Reference category		Reference category		Reference category		Reference category	
Country dummy Sweden*Crisis	-0.0069	-0.0048	0.001	-0.002	0.0068*	-0.0038	0.0001	-0.0004	-0.0011	-0.0024
Country dummy UK*Crisis	-0.0245***	-0.0063	0.0013	-0.0023	0.0127**	-0.0052	0.0003	-0.0004	0.0103***	-0.0032
Individual covariates	included		included		included		included		included	
Pseudo-R-squared	0.1083									
Observations	231,939									

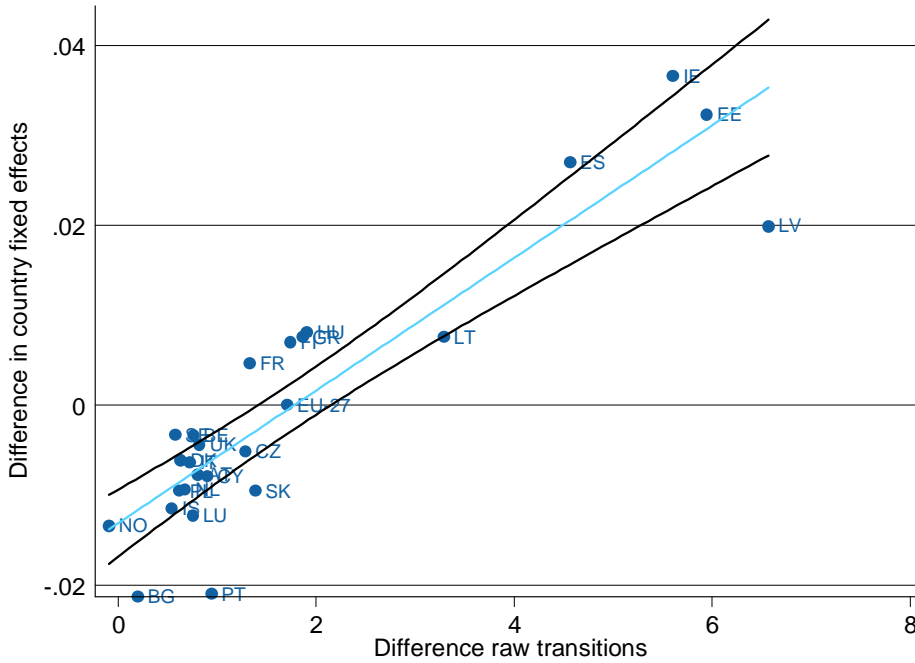
Source: EU-SILC, own calculations. - Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (S), education (Ed) and inactivity (I).

Table A.6.86
Yearly transitions from unemployment to different labor market states for selected countries, EU-SILC

	UU		UE		US		UEd		UI	
	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.	Marg. effect	S.E.
Log Growth GDP	-2.4861	-3.0172	7.5636***	-2.7795	-0.0586	-1.034	-0.187	-0.2515	-4.8319***	-1.7477
Crisis	-0.0339*	-0.0179	0.0044	-0.0163	0.0098	-0.0063	-0.0120***	-0.0031	0.0316***	-0.0102
Country dummy Spain	-0.1321***	-0.0153	0.1174***	-0.0151	0.0039	-0.0056	0.0055**	-0.0023	0.0052	-0.0088
Country dummy France	0.0644***	-0.0172	0.0473***	-0.0164	-0.0111*	-0.0059	-0.0006	-0.0021	-0.1000***	-0.0072
Country dummy Greece	-0.0258	-0.0224	0.029	-0.0209	0.0249**	-0.0107	0.0015	-0.003	-0.0296***	-0.0101
Country dummy Italy	0.0367**	-0.0162	-0.0752***	-0.014	0.0159**	-0.0069	0.0023	-0.0019	0.0203**	-0.0103
Country dummy Poland	Reference category		Reference category		Reference category		Reference category		Reference category	
Country dummy Sweden	-0.1967***	-0.0273	0.1755***	-0.0284	-0.0058	-0.0082	0.0540***	-0.0168	-0.0271**	-0.013
Country dummy UK	-0.2144***	-0.0289	0.1326***	-0.0298	-0.0017	-0.0092	0.0006	-0.0035	0.0830***	-0.0221
Country dummy Spain*Crisis	0.1674***	-0.0205	-0.0847***	-0.017	-0.0217***	-0.0045	0.0209**	-0.0104	-0.0819***	-0.0065
Country dummy France*Crisis	0.0143	-0.0261	-0.0021	-0.0226	-0.0146*	-0.0076	0.0307*	-0.0159	-0.0283**	-0.0143
Country dummy Greece*Crisis	0.0911***	-0.0297	-0.0470*	-0.0257	-0.0115*	-0.0069	0.0174	-0.0128	-0.0500***	-0.0119
Country dummy Italy*Crisis	-0.0066	-0.0222	0.0165	-0.0206	-0.0086	-0.0056	0.0378***	-0.0142	-0.0391***	-0.0087
Country dummy Poland*Crisis	Reference category		Reference category		Reference category		Reference category		Reference category	
Country dummy Sweden*Crisis	0.1050***	-0.0324	-0.0331	-0.0279	-0.0185***	-0.0067	0.0183*	-0.0109	-0.0717***	-0.0094
Country dummy UK*Crisis	0.0432	-0.0477	-0.0611*	-0.0326	-0.008	-0.0109	0.0615	-0.0374	-0.0355**	-0.0158
Individual covariates	included		included		included		included		included	
Pseudo-R-squared	0.0881		0.0881		0.0881		0.0881		0.0881	
Observations	34,138									

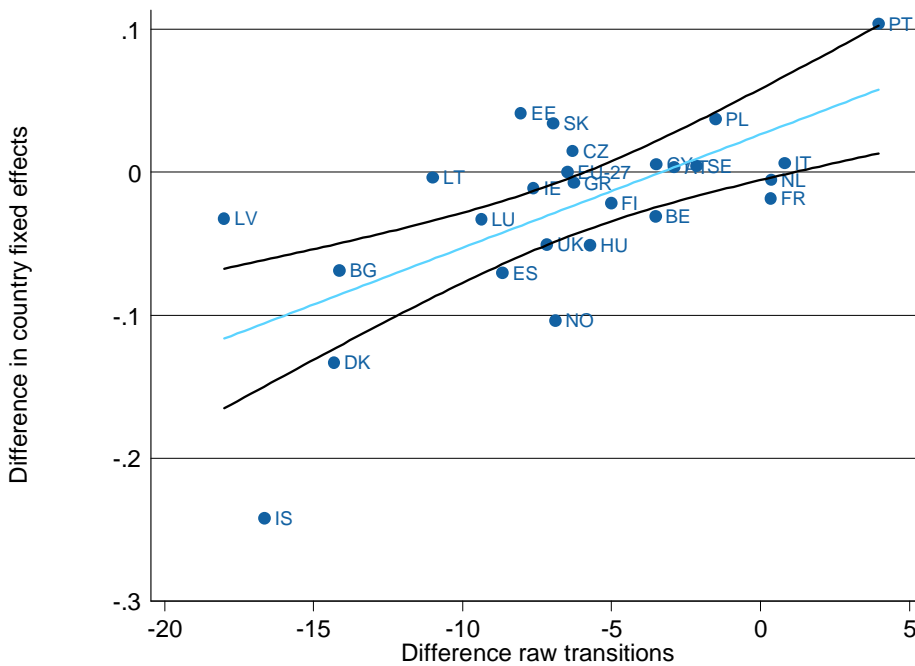
Source: EU-SILC, own calculations. - Notes: Multinomial logit model. *: statistically significant at least at the 10 %-level, **: statistically significant at least at the 5 %-level and ***: statistically significant at least at the 1 %-level. Transitions take place between the following labour market states: employment (E), unemployment (U), self-employment (Ed) and inactivity (I).

Figure A.6.1
Correlation between pre-crisis and during the crisis country fixed effects and differences in raw transitions for employment-to-unemployment flows



Source: EU-SILC, own calculations. – Notes: Fitted values and 95 per cent confidence intervals shown.

Figure A.6.2
Correlation between pre-crisis and during the crisis country fixed effects and differences in raw transitions for unemployment-to-employment flows



Source: EU-SILC, own calculations. – Notes: Fitted values and 95 per cent confidence intervals shown.

Appendix 2: Additional indicators of economic and financial activity

In Chapter 1 we discussed the reasons for the economic and financial crisis. In doing so, we described the various channels through which the financial crisis ended up in a crisis of the real economy. Furthermore, we gave an overview on how the structure of the economy affected the kind of shock the European countries were subjected to. For example, the importance and pre-crisis evolution of the housing market, stock-market developments and the prevalence of other financial structures are likely to have been crucial determinants.

Against this background, we gathered data on various economic and financial indicators. In detail, we collected data on the categories economic growth, the components of GDP, the labor market as well as the financial sector. As shown in Table 3.9, there are notable gaps for specific variables, e.g. the house price index. Furthermore, a group of countries (Iceland, Cyprus, Poland) is not covered well by internationally comparable data. This leads to a reduction in the number of observations we can use for the respective regressions (Section 3.2.1).

In order to take the additional indicators into account, we took the baseline specification used in the previous analyses (Sections 6.1 – 6.5) as a starting point. We then included the additional indicators in a step-wise way, i.e. we did not include all the additional indicators in one regression, but either separately or in small groups of variables. GDP growth was either completely replaced, or the additional indicators were included in addition to GDP growth (such as the as output gap).

Overall, these analyses were not very successful, as they did either not yield any results at all (the regressions could not be computed – technically, the computation algorithms did not converge), or the results did not yield any additional insights – sometimes the results are even difficult to reconcile with theoretical expectations. Table A.6.84 displays an example regression for transitions from employment including domestic credits, equity prices, interest rates, exchange rates and housing prices. The results show that GDP keeps its significant impact, which is pro-cyclical for employment security (column E) and counter-cyclical for transitions from employment to unemployment. Domestic credit does not seem to be correlated with labour market transitions. Equity prices display the same signs and statistical significance as GDP growth, but the size of the coefficients is very small, making them economically insignificant. The coefficients on interest rates and exchange rates are difficult to interpret, as these variables are highly endogenous, both reacting to changes in GDP. Finally, the house price index yields counter-intuitive results: An increased growth rate is associated with reduced employment security and increased inflows into unemployment. We performed several additional analyses with financial and economic indicators. However, no interesting results emerged.

Summarizing, the attempts to use additional indicators of financial or economic activity in the analysis did not prove successful. This is mainly due to the fact that the effect of the business cycle on labour market dynamics involves a complicated time structure – in particular, the labour market usually only reacts with a certain time lag – which, from a technical point of view, ideally would require including several time lags of specific business cycle indicators into the regression equations. For example, one would like to explain outflows from employment by GDP growth in the last quarter, two quarters ago, etc. Given the complexity of the data structure, this is often not feasible at all (technically, the algorithms used to compute the regression results do not converge), and extremely time-consuming at best. Therefore, we conclude from the analyses performed in our study, this question with respect to business cycle indicators is in all likelihood better addressed using time-series techniques on aggregate data, i.e. not using micro data.

When using time-series techniques, one can also better take into account the issue that many of the business cycle indicators discussed are not stationary, i.e. they display a unit root. In this case, one has to think carefully about how to deal with this. If one is interested in using these variables as explanatory variables only, taking first differences is usually sufficient. If one is however interested in how the different business cycle indicators are related to each other, one should take into account that they may be linked through a “cointegration process”, which is more appropriately modelled within an error-correction model (Enders 2009; Hamilton 1994).

References

- Acemoglu, D. (2001), Good jobs versus bad jobs. *Journal of Labor Economics* 19 (1): 1-21.
- Anderton, R. et al. (2012), Euro area labour markets and the crisis. Occasional Paper Series 138. European Central Bank.
- Autor, D.H., F. Levy, and R.J. Murnane (2003), The Skill Content of Recent Technological Change: An empirical exploration. *Quarterly Journal of Economics* 118 (4): 1279-1333.
- Bachmann, R. and M. Sinning (2012), Decomposing the Ins and Outs of Cyclical Unemployment. Ruhr Economic Papers #305.
- Bachmann, R., Th.K. Bauer and P. David (2010), Labor Market Entry Conditions, Wages and Job Mobility. IZA Discussion Paper #4965.
- Bachmann, R. and P. David (2010), The Importance of Two-Sided Heterogeneity for the Cyclicity of Labour Market Dynamics. IZA Discussion Paper #5358.
- Barlevy, G. (2002), The sullyng effect of recessions. *The Review of Economic Studies* 69 (1): 65-96.
- Bell, D. N., and D. G. Blanchflower (2011), Young people and the Great Recession. *Oxford Review of Economic Policy* 27 (2): 241-267.
- Bentolila, S. and S. Saint-Paul (1992), The macroeconomic impact of flexible labor contracts, with an application to Spain. *European Economic Review* 36 (5): 1013-47.
- Bentolila, S., P. Cahuc, P., J.J. Dolado and T. Le Barbanchon (2012), Two- Tier Labour Markets in the Great Recession: France Versus Spain. *The Economic Journal* 122 (562): F155-F187.
- Bertola, G. and R. Rogerson (1997), Institutions and labor reallocation. *European Economic Review* 41 (6): 1147-1171.
- Boeri, T. and J. Van Ours (2008), *The Economics of Imperfect Labor Markets*. Princeton: Princeton University Press.
- Boeri, T. and P. Garibaldi (2007), Two Tier Reforms of Employment Protection: a Honeymoon Effect? *Economic Journal* 117 (521): 357-385.
- Brien, M.J. and M.E. Sheran (2003), The Economics of Marriage and Household Formation. In: Grossbard-Shechtman, S.A. (ed.), *Marriage and the Economy*. Cambridge: University Press, 37-54.
- Bruno, G.S.F., F.E. Caroleo and O. Dessy (2012), Stepping Stones versus Dead End Jobs: Exits from Temporary Contracts in Italy after the 2003 Reform. IZA Discussion Paper #6746.
- Burda, M.C. and J. Hunt (2011), What Explains the German Labor Market Miracle in the Great Recession. *Brookings Papers on Economic Activity* 42 (1): 273-335.
- Cahuc, P. and A. Zylberberg (2004), *Labor economics*. Cambridge: MIT press.
- Calmfors, L. and J. Driffill (1988), Bargaining structure, corporatism and macro-economic performance. *Economic Policy* 3 (6): 13-61.
- Card, D., J. Kluve and A. Weber (2010), Active Labour Market Policy Evaluations: A Meta-Analysis. *The Economic Journal* 120 (548): F452-F477.
- Carroll, C.D., M. Otsuka and J. Slacalek (2006), How Large Is the Housing Wealth Effect? A New Approach. Economics Working Paper Archive 535. The Johns Hopkins University, Department of Economics.
- Charlot, O. and F. Malherbet (2013), Education and employment protection. *Labour Economics* 20 (C): 3-23.
- Cunningham, W.V. and W.F. Maloney (1998), Heterogeneity among Mexico's micro-enterprises: an application of factor and cluster analysis. World Bank Latin America and the Caribbean Region Poverty Reduction and Economic Management Sector UnitC Washington. World Bank. Available online: <http://elibrary.worldbank.org/doi/book/10.1596/1813-9450-1999> (Extracted: 09/09/2013).
- Di Tella, R. and R. MacCulloch (2005), The consequences of labor market flexibility: Panel evidence based on survey data. *European Economic Review* 49 (5): 1225-1259.

- Diamond, P. (2011), Unemployment, vacancies, wages. *American Economic Review* 101 (4): 1045-1072.
- ECB – European Central Bank (2012), Euro area labour markets and the crisis. ECB Occasional Paper Series No. 138.
- Eckstein, Z. and G.J. van den Berg (2007), Empirical labor search: A survey. *Journal of econometrics* 136 (2): 531-564.
- Eichhorst, W., V. Escudero, P. Marx and S. Tobin (2010a), The impact of the crisis on employment and the role of labour market institutions. IZA Discussion Paper #5320.
- Eichhorst, W., M. Feil, P. Marx (2010b), Crisis, What Crisis? Patterns of Adaptation in European Labor Markets. *Applied Economics Quarterly Supplement*, 56 (61): 29-64.
- Eichhorst, W., P. Marx and V. Tobsch (2009), Institutional arrangements, employment performance and the quality of work. IZA Discussion Paper # 4595.
- Elsby, M., B. Hobijn and A. Sahin (2012), Unemployment Dynamics in the OECD. *Review of Economics and Statistics*, forthcoming.
- Elsby, M., R. Michaels and G. Solon (2009), The Ins and Outs of Cyclical Unemployment. *American Economic Journal: Macroeconomics* 1 (1): 84-110.
- Enders, W. (2009), *Applied Econometric Time Series*. New York: Wiley.
- European Commission (2010), European Employment Observatory Review: Self-employment in Europe 2010 (11/10/2010). Luxembourg: Office for Official Publications of the European Communities.
- Eurostat (2011a), EU Labour Force Survey Database User guide. European Commission, Eurostat. Directorate F: Social Statistics and Information Society, Unit F-2: Labour Market. Luxembourg.
- Eurostat (2011b), EU Labour Force Survey Explanatory Notes. European Commission, Eurostat. Directorate F: Social Statistics and Information Society, Unit F-2: Labour Market. Luxembourg. Available online: http://epp.eurostat.ec.europa.eu/portal/page/portal/employment_unemployment_ifs/documents/EU_LFS_explanatory_notes_from_2011_onwards.pdf. (Extracted: 15/07/2013)
- Eurostat (2012a), Information note on the use of the 2012 release of anonymised EU LFS microdata. Available online: : http://circa.europa.eu/irc/dsis/employment/info/data/eu_ifs/LFS_MAIN/Anonymisation/Information_note_LFS_anonymised_datasets.pdf. (Extracted: 13/08/2013)
- Eurostat (2012b), Labour force survey in the EU, candidate and EFTA countries. Main characteristics of national surveys, 2010 (Methodologies and Workingpapers). Available online: http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-RA-12-013/EN/KS-RA-12-013-EN.pdf. (Extracted: 21/05/2013)
- Everitt, B. (2011), *Cluster analysis*. 5. Aufl. Chichester, West Sussex, U.K: Wiley.
- Gal, P.N., A. Hijzen and Z. Wolf (2013), The Role of Institutions and Firm Heterogeneity for Labour Market Adjustment: Cross-Country Firm-Level Evidence. IZA Discussion Paper 7404.
- Garibaldi, P. and E. Wasmer (2005), Equilibrium search unemployment, endogenous participation, and labor market flows. *Journal of the European Economic Association* 3 (4): 851-882.
- Goos, M., A. Manning and A. Salomons (2009), Job Polarization in Europe. *American Economic Review: Papers & Proceedings* 99 (2): 58-63.
- Hamilton, J. D. (1994), *Time Series Analysis*. Princeton: Princeton University Press.
- Haefke, C. and M. Reiter (2006), Endogenous labor market participation and the business cycle. IZA Discussion Paper #2029.
- Hempell, H. S., and C.K. Sørensen (2010), The impact of supply constraints on bank lending in the euro area: crisis induced crunching? ECB Working Paper 1262. European Central Bank.
- International Labour Organisation (ILO) (2009), Protecting People, Promoting Jobs: a Survey of Country Employment and Social Protection Policy Responses to the Global Economic Crisis, An ILO report to the G20 Leaders' Summit, Pittsburgh, 24-25 September 2009. ILO, Geneva.
- ISG and RWI (2010), Study on various aspects of labour market performance using micro data from the

- European Union Labour Force Survey – Final Report. RWI Projektberichte.
- IMF – International Monetary Fund, World Economic Outlook (WEO) (2009), Crisis and Recovery. Chapter 1 and Chapter 2. April 2009.
- Kahn, L.B. (2010), The long-term labor market consequences of graduating from college in a bad economy. *Labour Economics* 17 (2): 303-316.
- Keane, M.P. (2011), Labor supply and taxes: A survey. *Journal of Economic Literature* 49 (4): 961-1075.
- Kluge, J., S. Schaffner and Ch.M. Schmidt (2009), Labor Force Status Dynamics in the German Labor Market – Individual Heterogeneity and Cyclical Sensitivity. Ruhr Economic Papers #139.
- Krause, M.U. and T.A. Lubik (2006), The cyclical upgrading of labor and on-the-job search. *Labour Economics* 13 (4): 459-477.
- Moon, W.S. (2011), Endogenous labor force participation and firing costs. *Labour Economics* 18 (5): 607-623.
- Mortensen, D.T., and C.A. Pissarides (1994), Job creation and job destruction in the theory of unemployment. *Review of Economic Studies* 61 (3): 397-415.
- Muntaner, C., H. Chung, J. Benach and E. Ng (2012), Hierarchical cluster analysis of labour market regulations and population health: a taxonomy of low- and middle-income countries. *BMC Public Health* 12 (1): 286-300.
- Neumark, D. and W. Wascher (2008), Minimum Wages. Cambridge: MIT Press
- Nickell, S. and R. Layard (1999), Labor market institutions and economic performance. *Handbook of labor economics* 3: 3029-3084.
- OECD (2010), OECD Employment Outlook, Moving beyond the job crisis. Paris: OECD Publications.
- Oreopoulos, P, T. von Wachter and A. Heisz (2012), The Short- and Long-Term Career Effects of Graduating in a Recession. *American Economic Journal: Applied Economics* 4 (1): 1-29.
- Ortigueira, S. (2006), Skills, search and the persistence of high unemployment. *Journal of Monetary Economics* 53 (8): 2165-2178.
- Pissarides, C.A. (1998), The impact of employment tax cuts on unemployment and wages; the role of unemployment benefits and tax structure. *European Economic Review* 42 (1): 155-183.
- Pries, M., and R. Rogerson, (2009), Search frictions and labor market participation. *European Economic Review* 53 (5): 568-587.
- Rogerson, R. and R. Shimer (2010), Search in Macroeconomic Models of the Labor Market. In Ashenfelter, O. and D. Card (eds.), *Handbook of Labor Economics* 4A. Amsterdam: North Holland, 619-700.
- RWI (2011a), Study on various aspects of labour market performance using micro data from the European Union Statistics on Income and Living Conditions (EU-SILC) – Final Report. RWI Projektberichte.
- RWI (2011b), Paper on the Identification of the Flexicurity Profile of Member States Using Micro-economic Data – Final Report. RWI Projektberichte.
- Saint-Paul, G. (1996), Dual Labor Markets. Cambridge MA: The MIT Press.
- Sala, H., J.I. Silva and M. Toledo (2012), Flexibility at the Margin and Labor Market Volatility in OECD Countries. *The Scandinavian Journal of Economics* 114 (3): 991-1017.
- Schaffner, S. (2011), Heterogeneity in the Cyclical Sensitivity of Job-to-Job Flows. *Zeitschrift für Arbeitsmarktforschung* 43 (4): 263-275.
- Shimer, R. (2005), The Cyclical Behavior of Equilibrium Unemployment and Vacancies. *American Economic Review* 95 (1): 25-49.
- Tansel, A. and E.O. Kan (2012), Labor Mobility across the Formal/Informal Divide in Turkey: Evidence from Individual Level Data, IZA Discussion Paper #6271.
- Theodossiou, I. and A. Zangelidis (2009), Should I stay or should I go? The effect of gender, education and

unemployment on labour market transitions. *Labour Economics* 16 (5): 566-577.

Verick, S. (2011), The Impact of the Global Financial Crisis on Labour Markets in OECD Countries: Why Youth and Other Vulnerable Groups Have Been Hit Hard. In: Islam, I. and S. Verick (eds.), *From the Great Recession to Labour Market Recovery: Issues, Evidence and Policy Options*. Basingstoke, Hampshire, UK; ILO/Palgrave Macmillan, 119-145.

Visser, J. (2013), ICTWSS: Data Base on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts, 1960 -2011 (ICTWSS). Available online: <http://www.uva-aias.net/208>. (Extracted: 08/05/2013).

von Wachter, T. and S. Bender (2008), Do Initial Conditions Persist Between Firms? An Analysis of Firm-Entry Cohort Effects and Job Losers using Matched Employer-Employee Data. In Bender, S., J. Lane, K. Shaw, F. Andersson and T. von Wachter (eds.), *The Analysis of Firms and Employees: Quantitative and Qualitative Approaches*. Chicago: University of Chicago Press, 135-162.



Prof. Dr. Christoph M. Schmidt