



OECD Economics Department Working Papers No. 1027

Labour Market Performance
by Age Groups: A Focus
on France

Hervé Boulhol,
Patrizio Sicari

<https://dx.doi.org/10.1787/5k4c0dnhc58x-en>

Unclassified

ECO/WKP(2013)19

Organisation de Coopération et de Développement Économiques
Organisation for Economic Co-operation and Development

21-Feb-2013

English - Or. English

ECONOMICS DEPARTMENT

ECO/WKP(2013)19
Unclassified

LABOUR MARKET PERFORMANCE BY AGE GROUPS: A FOCUS ON FRANCE

ECONOMICS DEPARTMENT WORKING PAPER No. 1027

By Hervé Boulhol and Patrizio Sicari

All OECD Economics Department Working Papers are available on the OECD's internet website at www.oecd.org/eco/workingpapers

JT03335051

Complete document available on OLIS in its original format

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

English - Or. English

ABSTRACT/RESUME

Labour market performance by age groups: a focus on France

This paper analyses the age structure of employment rates across OECD countries with a focus on France. The statistical contribution of each age group to total unemployment-rate differentials is also computed. An estimate of the sensitivity of age-specific unemployment rates to the economic cycle is provided for OECD countries. France is one of the OECD countries having the highest dispersion of employment rates across age groups. The “within” component of the 15-29 age group accounts for over half of France’s total unemployment rate differential with best-performing countries. Youth unemployment rate is especially sensitive to cyclical fluctuations in Spain, Belgium and France.

JEL classification codes: J21; J22; J64; E32

Keywords: France; employment; unemployment; age; youth; Okun’s Law

Performances du marché du travail par groupes d’âge : la France en point de mire

Cette étude propose une analyse comparée entre pays de l’OCDE de la structure par âge des taux d’emplois. La contribution statistique de chaque groupe d’âge aux écarts totaux de taux de chômage est également calculée. La sensibilité au cycle économique des taux de chômage par classe d’âge est estimée pour les pays de l’OCDE. La France est un des pays de l’OCDE ayant la plus grande dispersion des taux d’emplois par âge. La composante « within » du groupe des 15-29 ans contribue à plus de la moitié de l’écart de taux de chômage total avec les pays les plus performants. Le taux de chômage des jeunes est particulièrement sensible aux variations cycliques en Espagne, en Belgique et en France.

Classification JEL : J21 ; J22 ; J64 ; E32

Mots clefs : France ; emploi ; chômage ; âge ; jeunes ; loi d’Okun

© OECD (2013)

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for commercial use and translation rights should be submitted to rights@oecd.org.

Table of contents

Labour market performance by age groups: a focus on France	5
Cluster analysis	6
Shift share analysis of unemployment rate	9
Sensitivity of unemployment rates to cyclical shocks	13
Bibliography	15
<i>Appendix 1 Shift share analysis: crisis period</i>	16
<i>Appendix 2 Estimation of Okun’s Law by groups of age</i>	18

Tables

1. Breakdown of unemployment rate differences by age groups, mean 2003-07	12
A1.1. Breakdown of unemployment rate differences by age groups, mean 2007-11	17
A2.1. Regression coefficients: 15-24 (equation 2)	19
A2.2. Regression coefficients: 25-54 (equation 2)	20
A2.3. Regression coefficients: 55-64 (equation 2)	21
A2.4. Regression coefficients: 15-24 (equation 3)	22
A2.5. Regression coefficients: 25-54 (equation 3)	23
A2.6. Regression coefficients: 55-64 (equation 3)	24

Figures

1. Total employment rates in OECD countries, 2011	5
2. Dendrogram of a rank classification of OECD countries based on employment rates by age-group	6
3. Employment rate by age-group, ranked classification	7
4. Dispersion of employment rates across age groups in OECD countries, 2011	8
5. Employment rate of 5-year cohorts by year of birth	8
6. NEETs in the OECD countries, 2010	10
7. Explaining the gap between the unemployment rate in France versus other OECD members.....	11
8. Sensitivity of age-specific unemployment rates to fluctuations in the business cycle, equation 2	14
9. Sensitivity of age-specific unemployment rates to fluctuations in the business cycle, equation 3	15

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

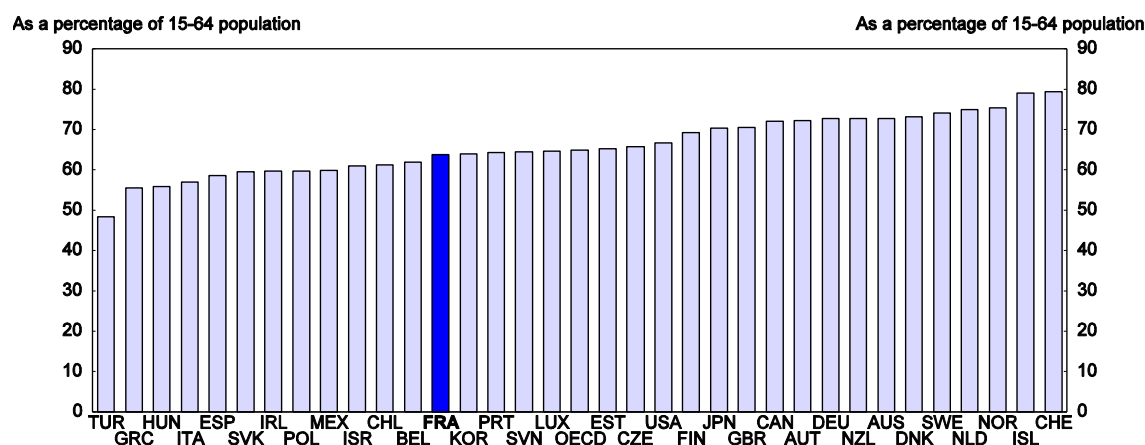
Labour market performance by age groups: a focus on France

By

Hervé Boulhol and Patrizio Sicari¹

France's labour market performance has been weak for a long time. In 2011, the employment rate of the working-age population was 64% in France against 65% for the OECD average and 74% for the average of the top ten countries (Figure 1). The purpose of this short paper is to provide some technical analysis comparing the age structure of employment across OECD countries, computing the statistical contribution of each age group to the unemployment rate differential among countries and estimating sensitivity of unemployment rates by age groups to the economic cycle.

Figure 1. Total employment rate in OECD countries, 2011



Source: OECD, Labour Force Statistics database.

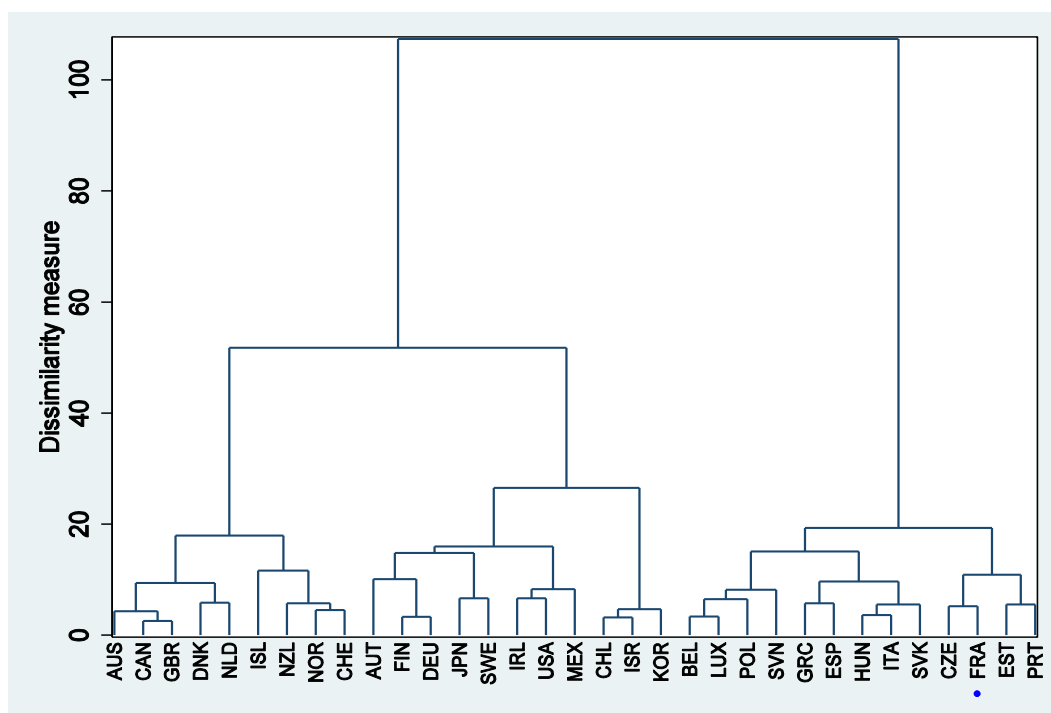
1. This paper was originally produced as a background document for the 2013 *Economic Survey of France*. Hervé Boulhol is senior Economist and Head of the France Desk in the OECD Economics Department; e-mail: herve.boulhol@oecd.org. Patrizio Sicari is Research Assistant in the OECD Economics Department; e-mail: patrizio.sicari@oecd.org. The authors would like to thank Peter Jarrett for comments and Mee-Lan Frank for valuable technical preparation. This paper contains the views of the authors, and not necessarily those of the OECD or its member governments.

Cluster analysis

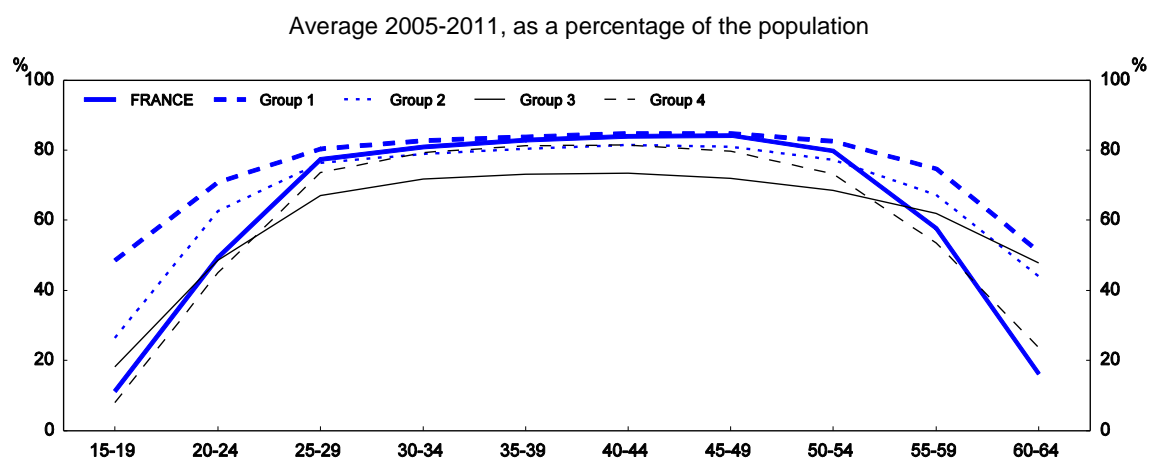
The age structure of a country’s employment rates is typically hump-shaped, employment rates being in general higher for prime-age people. However, depending on the country, the hump is more or less pronounced. A rank classification is used to identify groups of OECD countries using five-year age groups between 15 and 64 years old. In order to avoid being overly influenced by cyclical factors related to the economic crisis, employment rates by age groups within countries are averaged over 2005-11.

The resulting clustering (dendrogram) distinguishes four main groups of countries (Figure 2). Averaging employment rates within groups leads to Figure 3. Group 1, comprising Australia, Canada, the United Kingdom, Denmark, the Netherlands, Iceland, New Zealand, Norway and Switzerland, is the best performing group across age categories and displays a relatively flat hump. France belongs to Group 4, along with Belgium, Luxembourg, Poland, Slovenia, Greece, Spain, Hungary, Italy, the Slovak Republic, the Czech Republic, Estonia and Portugal; they are characterised by low employment rates at both ends of the age spectrum and therefore a pronounced hump. Group 2 is in between. Group 3 (Chile, Israel and Korea) tend to be the poorly performing except for older workers where employment rates are closer to those of Group 2.

Figure 2. Dendrogram of a rank classification of OECD countries based on employment rates by age-group



Source: OECD, Authors' calculations based on data from the OECD Labour Force Statistics database.

Figure 3. Employment rate by age-group, ranked classification¹

1. A ranked classification was used to identify groups of OECD countries by the structure of employment rates by cohort. Group 1 includes: Australia, Canada, the United Kingdom, Denmark, the Netherlands, Iceland, New Zealand, Norway and Switzerland. Group 2 includes: Austria, Finland, Germany, Japan, Sweden, Ireland, the United States and Mexico. Group 3 includes: Chile, Israel and Korea. Group 4 includes: Belgium, Luxembourg, Poland, Slovenia, Greece, Spain, Hungary, Italy, Slovakia, the Czech Republic, France, Estonia and Portugal. The composition of these groups varies with the period. For example, considering only the pre-crisis period (2005-07), Austria, the United States and Sweden were in group 1, Estonia and Portugal in group 2, and Mexico in group 4.

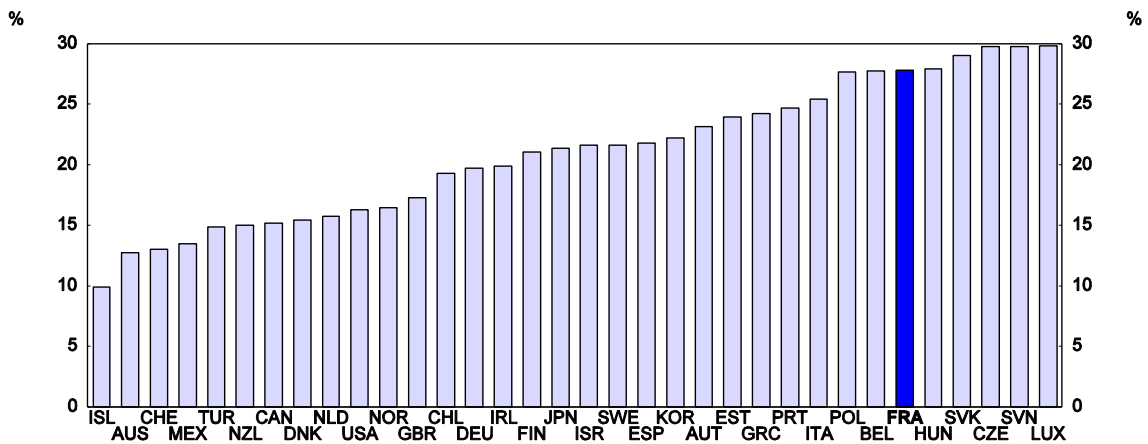
Source: Authors' calculations based on data from the OECD Labour Force Statistics database.

Among its group France is fairly unique in that employment rates between the age of 30 and 54 are close to those of the best performing countries. France is actually one of the OECD countries having the highest dispersion of employment rates across age groups (Figure 4). The very steep increase in France's employment rates from the 15-19 to the 25-29 age group is not due to negative developments affecting youth specifically in the current period, *i.e.* it is not a static picture. Tracking cohorts reveals that the low youth employment rate improved rapidly for all generations, reaching a relatively high level of approximately 80% by age 30-34 whatever the cohort (Figure 5).

However, this does not mean that the NEET (neither in education, employment or training) aged 20-24 transition into the labour force successfully. Rather, the increase in employment rates reflects a composition effect, as the most educated enter the labour market later (Batard and Saillard, 2011), especially in France where combining work and studies remains less common. In a highly stylised representation, the 30 percentage point difference between the employment rate of the 25-29 and the 20-24 cohorts corresponds to the proportion of 20-24 year-olds who are studying and not working.² Conversely, NEETs account for one fifth of both the age 25-29 cohort (basically the complement of the four-fifths who are working) and the 20-24 cohort (Figure 6).

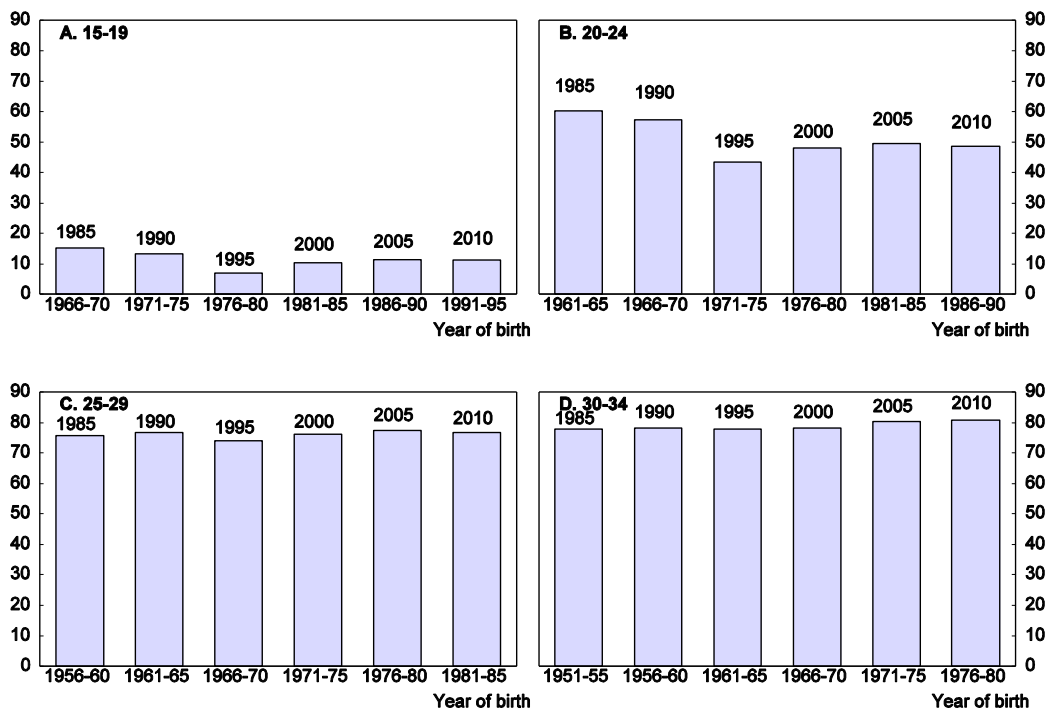
2. This presentation is stylized because of course some 20-24 year-old NEETs make their way through employment, while some aged 25-29 become new NEETs.

Figure 4. Dispersion of employment rates across age groups in OECD countries, 2011
Standard deviation of the country-level distribution of employment rates by five-year age groups



Source: OECD, Labour Force Statistics database.

Figure 5. Employment rates of five-year cohorts by year of birth



Reading note: The employment rate of those born between 1961 and 1965 in 1985 (they were between 20 and 24 year old then) was equal to 60% (see Panel B).

Source: OECD, Labour Force Statistics Database, 2012.

Shift share analysis of unemployment rate

The difference in the total unemployment rate between countries i and j can be broken down along the age dimension following a within / between decomposition:

$$UNR_i - UNR_j = WITHIN + BETWEEN \quad (1)$$

with

$$WITHIN = \sum_k \left(\frac{s_{ik} + s_{jk}}{2} \right) * (UNR_{ik} - UNR_{jk})$$

and

$$BETWEEN = \sum_k \left(\frac{UNR_{ik} + UNR_{jk}}{2} \right) * (s_{ik} - s_{jk})$$

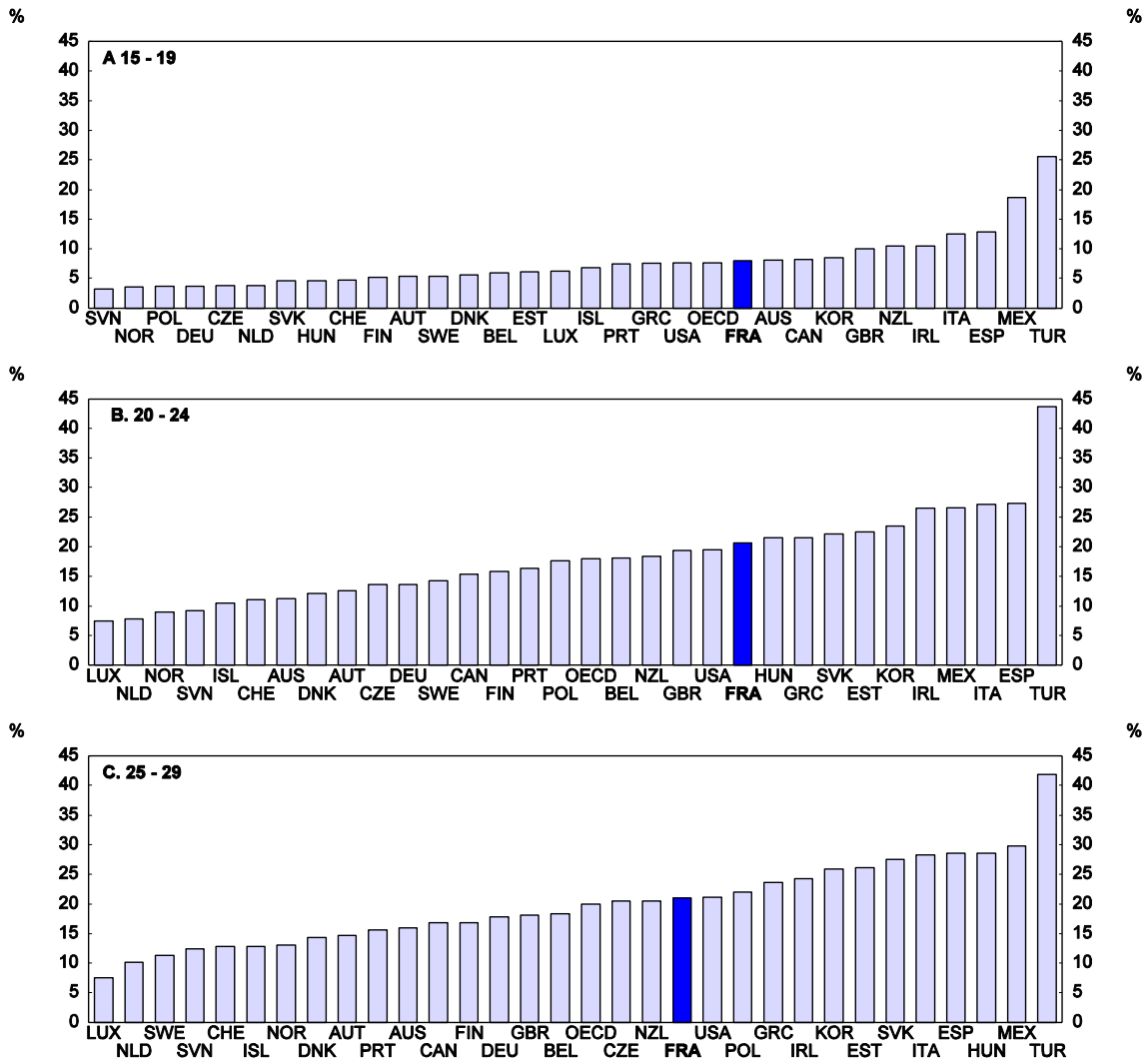
where UNR_{ik} is the unemployment rate of age group k in country i and s_{ik} is the share of group k in country i 's labour force. The contribution of group k to the within component is due to the difference in unemployment rate between countries for this age group, while the between component is driven by differences in the age structure of the labour force. Two periods are distinguished: the pre-crisis area which might give a better picture of structural patterns (Table 1) and the crisis period (2007-11) (Appendix 1).

In the pre-crisis period the total unemployment rate was 2 percentage points higher in France than in the OECD average. The age structure of the labour force was favourable to France, contributing about -0.4 p.p. (the between component). Out of the remaining 2.4 p.p. (the within component), the 15-24 accounted for about 40% and the 15-29 for about half, though the share of the latter in the labour force was only 22%. Since the onset of the crisis, the differentials have been reduced due to greater resilience/rigidities of the labour market in France than elsewhere on average, and the percentage-point within contribution of youth was similar (Appendix 1).

Also the 15-29 age group accounts for over half of the total unemployment rate differential with countries that could serve as a reference in terms of employment performance (Figure 7, Panels A and B). In contrast, while the contribution of the older age groups to differences in employment rates between countries might be important, it explains only a small part of differences in unemployment rates (Panels C and D).

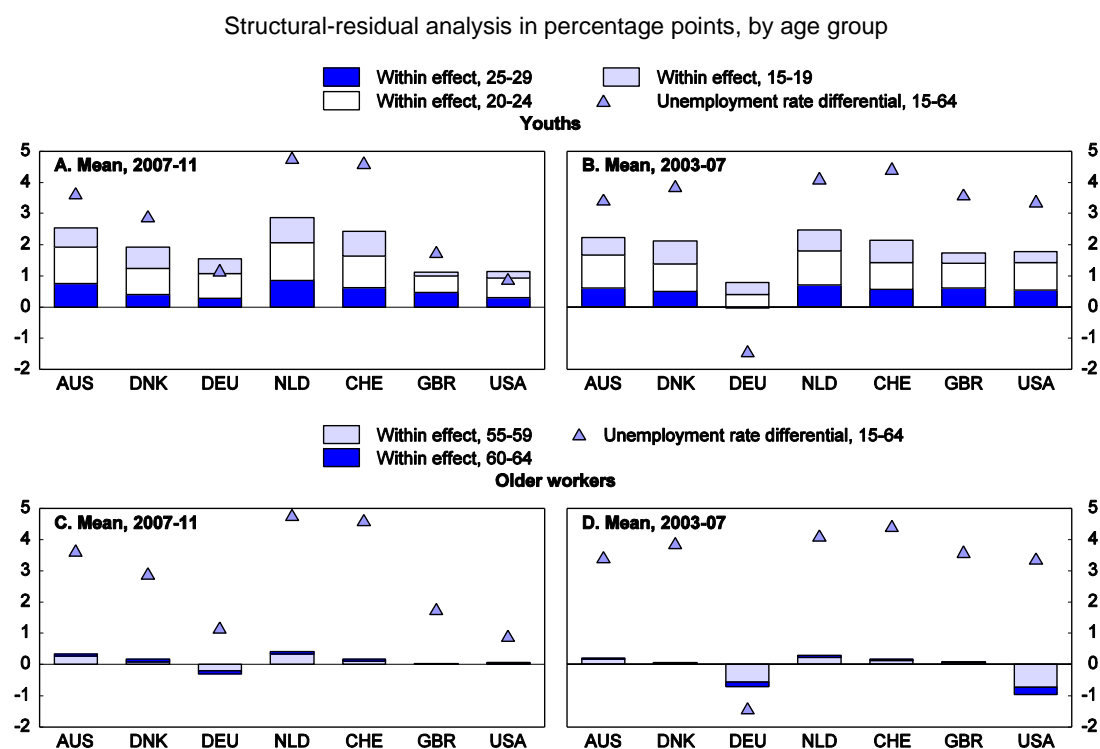
Figure 6. **NEETs in the OECD countries, 2010**

As a percentage of the population by age bracket



Source: OECD, Education database 2012.

Figure 7. Explaining the gap between the unemployment rate in France and other OECD members



Reading note: On average over 2007-11, France's unemployment rate was 3.7 percentage points higher than Australia's. The "within" component (equation 1) was equal to 2.5 p.p. for this pair of countries, of which the 15-19, the 20-24 and the 25-29 age groups contributed 0.6, 1.2 and 0.7 p.p., respectively.

Source: Authors' calculations based on data from the OECD Labour Force Statistics database.

Table 1. Breakdown of unemployment rate differences by age groups

Shift share analysis, mean 2003-07 [equation (1)]

Country	Total unemployment rate: differential with the OECD average	Within effect										Between effect									
		15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64
France	2.05	0.33	0.57	0.29	0.30	0.32	0.23	0.14	0.18	0.07	0.00	-0.44	-0.20	0.01	0.05	0.07	0.06	0.07	0.11	0.01	-0.11
Australia	-1.39	-0.23	-0.48	-0.32	-0.21	-0.18	-0.15	-0.17	-0.17	-0.10	-0.03	0.77	0.16	-0.07	-0.05	-0.07	-0.04	0.00	0.00	-0.02	-0.02
Austria	-1.84	-0.18	-0.38	-0.29	-0.23	-0.25	-0.22	-0.16	-0.09	-0.04	-0.02	0.09	-0.10	-0.09	0.02	0.15	0.13	0.05	-0.02	-0.09	-0.11
Belgium	1.61	0.40	0.66	0.29	0.27	0.19	0.15	0.11	0.09	-0.02	-0.01	-0.67	-0.22	0.09	0.10	0.14	0.13	0.09	0.02	-0.08	-0.10
Canada	0.25	-0.08	-0.23	-0.12	-0.01	0.09	0.08	0.04	0.03	0.07	0.04	0.54	0.03	-0.12	-0.12	-0.08	0.03	0.04	0.02	-0.01	0.01
Chile	1.69	0.33	0.53	0.44	0.21	0.13	0.07	0.04	-0.03	-0.02	-0.02	-0.26	0.23	0.01	0.03	0.01	0.06	0.00	-0.04	-0.05	0.01
Czech Republic	0.76	0.53	0.24	-0.10	0.08	0.12	0.13	0.14	0.25	0.08	-0.03	-0.78	-0.23	0.14	0.09	-0.04	-0.06	-0.01	0.17	0.08	-0.07
Denmark	-1.84	-0.40	-0.31	-0.22	-0.18	-0.21	-0.19	-0.20	-0.13	0.06	-0.05	0.34	-0.29	-0.16	-0.04	0.00	-0.01	0.06	0.02	0.15	-0.01
Estonia	1.23	0.39	0.08	-0.06	0.07	0.17	0.29	0.27	0.38	0.13	-0.03	-0.49	-0.01	-0.01	-0.03	-0.08	0.01	0.04	0.06	0.02	0.01
Finland	1.61	0.35	0.25	0.07	0.08	0.08	0.16	0.20	0.18	0.29	0.01	0.08	-0.11	-0.14	-0.18	-0.07	-0.01	0.07	0.13	0.19	-0.01
Germany	3.46	-0.06	0.13	0.33	0.41	0.44	0.54	0.59	0.66	0.66	0.15	-0.18	-0.23	-0.28	-0.17	0.10	0.18	0.00	0.05	0.05	0.05
Greece	3.01	0.43	1.07	0.88	0.53	0.37	0.22	0.07	0.04	-0.03	-0.04	-0.69	-0.39	0.29	0.19	0.12	0.04	0.07	-0.03	-0.05	-0.03
Hungary	0.25	0.47	0.31	-0.09	0.05	0.12	0.13	0.08	0.00	-0.05	-0.03	-0.86	-0.33	0.27	0.12	0.06	-0.09	0.01	0.16	-0.02	-0.11
Iceland	-3.67	-0.43	-0.57	-0.57	-0.41	-0.51	-0.44	-0.42	-0.36	-0.26	-0.08	0.56	-0.02	-0.09	-0.07	-0.05	-0.02	-0.07	0.02	0.02	0.02
Ireland	-1.89	0.00	-0.54	-0.51	-0.29	-0.24	-0.19	-0.15	-0.10	-0.12	-0.06	-0.04	0.36	0.24	0.10	-0.01	-0.07	-0.09	-0.08	-0.06	-0.05
Israel	2.71	0.28	0.49	0.21	0.18	0.28	0.32	0.34	0.30	0.16	0.06	-0.20	0.16	0.29	0.17	-0.06	-0.13	0.03	-0.04	-0.01	-0.01
Italy	0.97	0.48	0.76	0.53	0.22	0.04	-0.05	-0.10	-0.17	-0.10	-0.01	-0.61	-0.47	0.00	0.21	0.21	0.10	-0.05	0.02	-0.06	-0.07
Japan	-1.92	0.03	-0.27	-0.22	-0.16	-0.15	-0.19	-0.21	-0.19	-0.13	0.05	-0.51	-0.18	-0.02	0.00	-0.08	-0.10	0.08	0.08	0.20	0.17
Korea	-2.88	0.10	-0.13	-0.22	-0.36	-0.41	-0.41	-0.35	-0.28	-0.16	-0.07	-0.62	-0.30	0.05	0.08	0.10	0.10	0.09	-0.01	-0.06	-0.01
Luxembourg	-2.16	0.32	0.15	-0.36	-0.27	-0.32	-0.28	-0.19	-0.23	-0.19	-0.04	-0.71	-0.55	0.05	0.17	0.21	0.15	-0.08	0.04	-0.07	-0.12
Mexico	-3.13	-0.76	-0.73	-0.49	-0.46	-0.42	-0.38	-0.33	-0.26	-0.19	-0.07	0.78	0.39	0.11	0.06	0.01	-0.04	0.01	-0.10	-0.10	-0.06
Netherlands	-2.09	-0.35	-0.51	-0.42	-0.31	-0.22	-0.18	-0.16	-0.11	-0.06	0.00	0.42	-0.10	-0.11	-0.01	0.05	0.02	0.02	0.01	0.01	-0.07
New Zealand	-2.48	-0.26	-0.48	-0.37	-0.31	-0.31	-0.33	-0.32	-0.28	-0.20	-0.06	0.69	-0.01	-0.17	-0.08	-0.04	0.01	0.00	0.01	0.02	0.01
Norway	-2.65	-0.09	-0.32	-0.29	-0.27	-0.29	-0.24	-0.32	-0.32	-0.31	-0.11	0.13	-0.18	-0.14	-0.01	0.03	-0.02	0.18	0.03	0.06	0.01
Poland	9.63	0.44	2.13	1.36	1.02	0.96	1.11	1.22	0.99	0.44	0.04	-0.68	0.28	0.45	0.11	-0.09	-0.04	-0.03	0.03	-0.21	-0.10
Portugal	1.09	0.27	0.20	0.22	0.10	0.10	0.12	0.11	0.14	0.17	0.00	-0.44	-0.16	0.19	0.14	0.03	0.00	0.11	-0.04	-0.04	0.01
Slovak Republic	8.68	0.91	1.20	0.86	1.00	1.07	1.08	1.11	1.05	0.55	0.07	-0.70	0.34	0.32	0.04	-0.05	0.02	0.16	0.07	-0.23	-0.14
Slovenia	-0.39	0.13	0.23	0.15	-0.21	-0.19	-0.03	-0.08	-0.01	-0.04	-0.05	-0.47	-0.13	0.14	0.09	0.10	0.02	-0.07	0.05	-0.13	-0.11
Spain	3.11	0.42	0.50	0.44	0.39	0.40	0.35	0.26	0.21	0.15	0.04	-0.35	-0.05	0.34	0.24	0.10	-0.01	-0.04	-0.13	-0.10	-0.02
Sweden	0.10	0.35	0.27	0.07	-0.02	-0.07	0.00	-0.08	-0.12	-0.08	0.05	-0.01	-0.26	-0.18	-0.06	-0.01	-0.05	0.00	0.03	0.15	0.17
Switzerland	-2.40	-0.39	-0.30	-0.27	-0.26	-0.26	-0.28	-0.20	-0.19	-0.17	-0.01	0.17	-0.17	-0.15	-0.06	0.03	0.02	0.16	0.01	0.05	0.04
Turkey	4.19	-0.04	0.86	0.65	0.38	0.29	0.24	0.24	0.20	0.02	-0.02	0.74	-0.64	0.60	0.25	0.06	-0.08	-0.20	-0.31	-0.23	-0.09
United Kingdom	1.56	-0.01	-0.23	-0.32	-0.24	-0.23	-0.21	-0.21	-0.19	-0.13	-0.05	0.38	-0.01	-0.11	-0.05	0.02	0.01	-0.01	0.00	0.05	-0.01
United States	-1.35	0.00	-0.32	-0.26	-0.16	-0.14	-0.15	-0.15	-0.16	-0.10	-0.02	0.15	0.08	-0.07	-0.08	-0.05	0.00	0.04	0.03	0.01	0.01

Source: OECD calculations based on data from the OECD Labour Force Statistics database.

Sensitivity of unemployment rates to cyclical shocks

The sensitivity of the unemployment rate to cyclical shocks (the so-called Okun's law) can be analysed for each age group of a given country. The following partial adjustment model is estimated:

$$\Delta UNR_{ik,t} = \rho \Delta UNR_{ik,t-1} + \beta_0 \Delta CYCLE_{i,t} + \beta_1 \Delta CYCLE_{i,t-1} + \beta_2 \Delta CYCLE_{i,t-2} + u_{ik,t} \quad (2)$$

where $UNR_{ik,t}$ is the unemployment rate of the age-group k in country i at time t . $CYCLE$ is a cyclical variable and Δ is the quarterly change. The focus is primarily on youths (15-24) and older workers (55-64). A high sensitivity in a given country might reflect the fact that this country is more flexible overall rather than that this specific age group bears most of the adjustment burden of the economy within that country. It is thus also interesting to use as the dependent variable for a given country the differential between the unemployment rate of group k and the total unemployment rate. Two alternative variables are considered to capture the economic cycle: the OECD estimates of the output gap and the deviation from trend of real GDP.³ Regressions are run using quarterly data for the unemployment rates, taken from the OECD database on Labour Force Statistics, except for France, where INSEE's quarterly series were used in order to exploit their longer coverage.⁴ Data for the cyclical variable are taken from the OECD Economic Outlook 92 database.

For illustrative purposes, the charts present the impact on unemployment rate of a 1 percentage point negative shock on real GDP four quarters earlier based on the estimation of equation (2). Appendix 2 provides the estimated parameters. Spain, Belgium, France, Greece and the Slovak Republic (and Portugal depending on the specification) have the highest estimated sensitivities of youth unemployment to the cycle. In the case of France, the unemployment rate of the 15-24 age group is estimated to increase by about 1 percentage point within one year against 0.6 point on average in the OECD (Figures 8). This represents about three times the estimated effect on the unemployment rate of the 25-54 year-olds. When the difference between the unemployment rate of group k and the total unemployment rate is taken as the dependent variable according to:

$$\Delta UNR_{ik,t} - \Delta UNR_{it} = \rho (\Delta UNR_{ik,t-1} - \Delta UNR_{it-1}) + \beta_0 \Delta CYCLE_{i,t} + \beta_1 \Delta CYCLE_{i,t-1} + \beta_2 \Delta CYCLE_{i,t-2} + u_{ik,t} \quad (3)$$

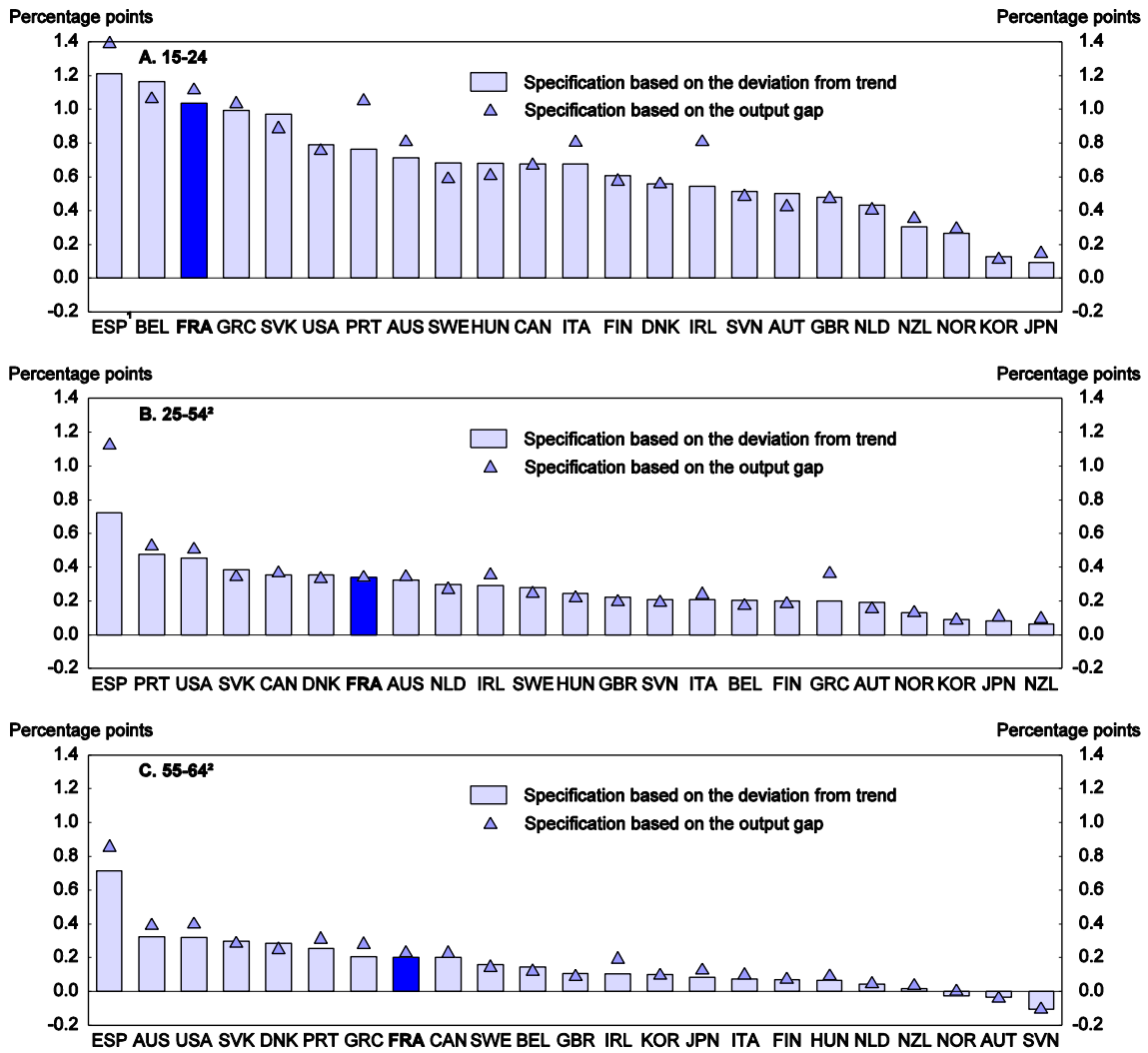
the estimation shows that youths are disproportionately affected by cyclical fluctuations, and especially so in Belgium, Spain and France (Figure 9). In all OECD countries the unemployment rate of the 55+ age group is less sensitive to the cycle than the unemployment rate for the total population.

3. The trend of real GDP is computed by using a Hodrick-Prescott filter with a β parameter of 1 600, as usually applied to quarterly data.

4. Reference periods do vary across countries according to the different time coverage of quarterly series on unemployment by main age groups in the OECD LFS database. The latest observation is usually 2012 Q3.

Figure 8. Sensitivity of age-specific unemployment rates to fluctuations in the business cycle

Change in unemployment rate one year after a negative shock of 1 percentage point of GDP [equation (2)]



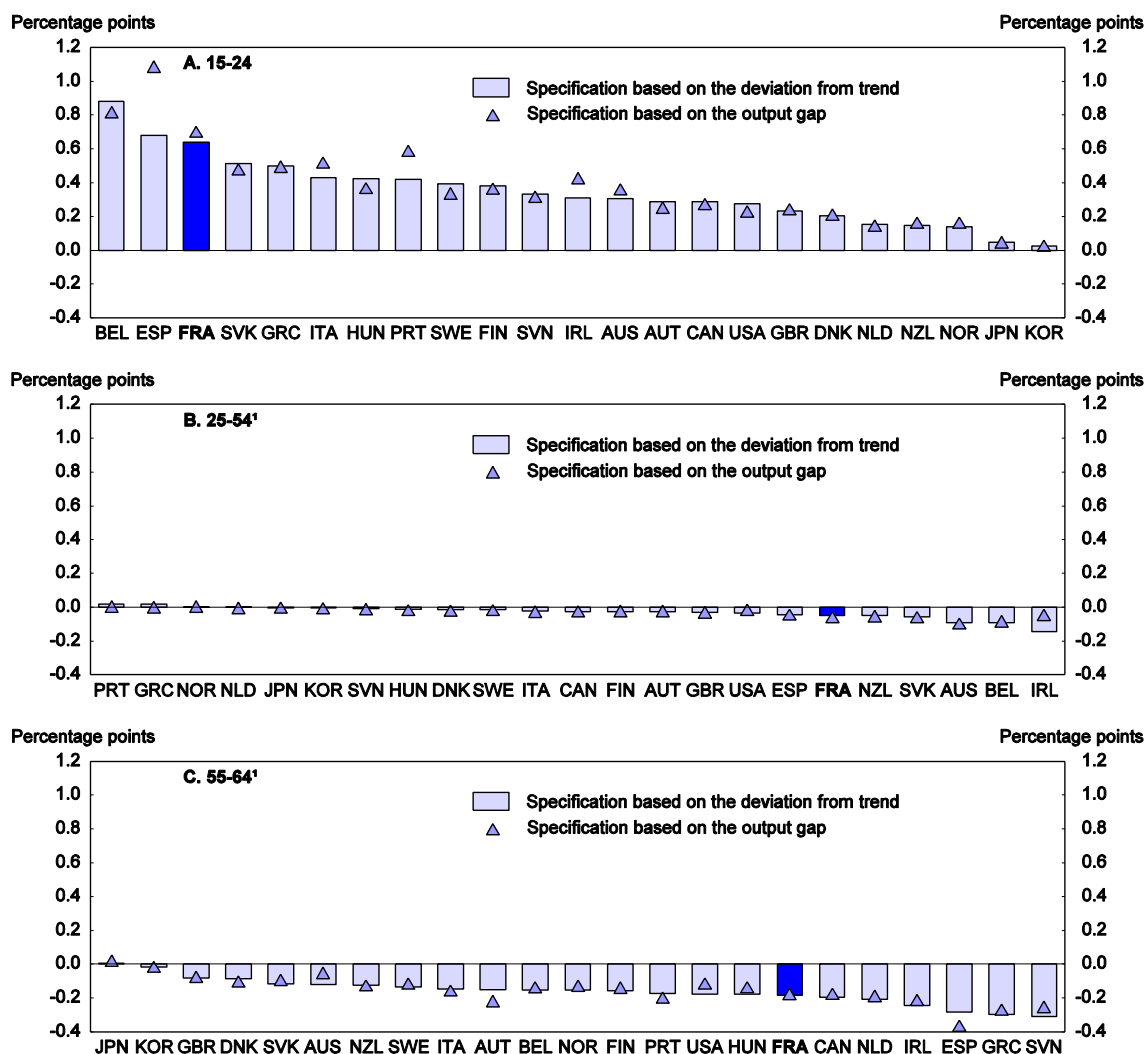
1. For the specification based on the output gap, the change in the youth unemployment rate has been capped at 1.4 to improve the readability of the graph, the true value being 2.4.

2. 25-49 and 50+ for France.

Source: Authors' calculations based on data from the OECD Labour Force Statistics database.

Figure 9. Sensitivity of age-specific unemployment rates to fluctuations in the business cycle

Change in the difference of age group's unemployment rate from the total unemployment rate one year after a negative shock of 1 percentage point of GDP [equation (3)]



1. 25-49 and 50+ for France.

Source: Authors' calculations based on data from INSEE and the OECD Labour Force Statistics database.

Bibliography

Batard, P.-E. and E. Saillard (2011), "Le chômage des jeunes : quel diagnostic ?", *Lettre Trésor-Eco*, No. 92.

Appendix 1

Shift share analysis: crisis period

Table A1.1. Breakdown of unemployment rate differences by age groups

Shift share analysis, mean 2007-11

Country	Total unemployment rate: differential with the OECD average	Within effect										Between effect									
		15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64
France	1.29	0.29	0.53	0.25	0.13	0.15	0.13	0.05	0.08	0.08	-0.01	-0.42	-0.17	0.01	0.01	0.07	0.07	0.07	0.09	0.02	-0.13
Australia	-2.36	-0.32	-0.65	-0.49	-0.33	-0.29	-0.25	-0.26	-0.24	-0.20	-0.07	0.75	0.25	-0.01	-0.07	-0.04	-0.06	-0.02	-0.02	-0.02	-0.02
Austria	-3.00	-0.32	-0.50	-0.41	-0.34	-0.32	-0.38	-0.30	-0.24	-0.19	-0.08	0.16	-0.06	-0.06	-0.05	0.04	0.12	0.10	0.03	-0.07	-0.13
Belgium	0.23	0.31	0.45	0.11	0.08	0.03	-0.01	-0.07	0.00	-0.04	-0.04	-0.66	-0.28	0.08	0.07	0.08	0.11	0.11	0.06	-0.05	-0.12
Canada	-0.11	-0.14	-0.29	-0.20	-0.10	0.00	0.04	0.02	0.02	0.06	0.06	0.58	0.07	-0.08	-0.10	-0.12	-0.05	0.03	0.05	0.00	0.03
Chile	0.87	0.20	0.34	0.27	0.09	0.03	0.00	-0.04	-0.05	-0.07	-0.04	-0.05	0.28	-0.02	-0.05	-0.02	0.01	0.01	0.01	-0.03	0.00
Czech Republic	-1.22	0.36	0.00	-0.27	-0.19	-0.17	-0.14	-0.05	0.03	0.07	-0.05	-0.80	-0.37	0.01	0.17	0.10	0.00	-0.01	0.07	0.10	-0.08
Denmark	-1.63	-0.40	-0.31	-0.15	-0.14	-0.21	-0.21	-0.22	-0.14	-0.01	-0.09	0.63	-0.12	-0.26	-0.07	-0.02	0.02	0.01	0.01	0.08	-0.03
Estonia	3.51	0.49	0.35	0.25	0.22	0.39	0.48	0.66	0.51	0.47	0.08	-0.60	0.15	0.09	-0.02	-0.04	-0.09	-0.01	0.03	0.09	0.02
Finland	0.24	0.24	0.10	-0.10	-0.13	-0.08	-0.03	-0.03	0.07	0.16	0.00	0.15	-0.07	-0.11	-0.09	-0.12	-0.03	0.02	0.08	0.16	0.05
Germany	0.10	-0.17	-0.27	-0.04	0.06	0.08	0.06	0.13	0.20	0.29	0.09	-0.17	-0.15	-0.20	-0.17	-0.07	0.15	0.11	0.07	0.09	0.01
Greece	3.91	0.40	1.19	1.12	0.69	0.52	0.37	0.26	0.22	0.07	-0.04	-0.78	-0.71	0.18	0.24	0.15	0.16	0.00	0.00	-0.07	-0.05
Hungary	2.15	0.48	0.71	0.25	0.20	0.31	0.35	0.35	0.29	0.17	-0.04	-0.96	-0.51	0.13	0.27	0.19	-0.03	-0.04	0.14	0.03	-0.15
Iceland	-1.83	-0.33	-0.31	-0.29	-0.07	-1.31	-0.36	-0.20	-0.29	-0.21	-0.05	0.76	0.07	-0.09	-0.07	-0.06	-0.06	-0.04	0.01	0.02	0.05
Ireland	2.88	0.33	0.44	0.39	0.31	0.34	0.34	0.28	0.19	0.08	0.02	-0.22	0.14	0.45	0.24	0.03	-0.09	-0.11	-0.12	-0.17	-0.03
Israel	-0.63	0.05	-0.07	-0.20	-0.14	-0.12	-0.06	0.05	-0.02	-0.02	-0.02	-0.30	0.07	0.20	0.18	0.05	-0.07	-0.13	-0.05	-0.01	0.01
Italy	0.22	0.48	0.71	0.41	0.16	0.02	-0.04	-0.10	-0.18	-0.16	-0.05	-0.74	-0.63	-0.21	0.14	0.21	0.19	0.10	0.05	-0.03	-0.10
Japan	-2.67	-0.06	-0.38	-0.29	-0.25	-0.25	-0.24	-0.24	-0.22	-0.18	0.00	-0.52	-0.22	-0.10	-0.02	0.03	-0.03	-0.05	0.00	0.16	0.20
Korea	-3.80	0.03	-0.19	-0.31	-0.39	-0.45	-0.47	-0.47	-0.38	-0.26	-0.09	-0.64	-0.53	0.02	0.02	0.09	0.09	0.10	0.07	-0.02	-0.03
Luxembourg	-2.65	0.19	0.22	-0.28	-0.43	-0.40	-0.35	-0.28	-0.27	-0.21	-0.05	-0.63	-0.61	0.06	0.15	0.16	0.16	0.11	0.04	-0.08	-0.15
Mexico	-2.71	-0.73	-0.64	-0.43	-0.38	-0.37	-0.35	-0.30	-0.27	-0.18	-0.08	0.80	0.46	0.11	0.05	0.04	-0.03	-0.09	-0.11	-0.13	-0.09
Netherlands	-3.51	-0.53	-0.68	-0.60	-0.46	-0.44	-0.36	-0.32	-0.26	-0.15	-0.03	0.52	-0.06	-0.12	-0.08	0.00	0.03	0.03	0.02	0.02	-0.04
New Zealand	-1.81	-0.05	-0.34	-0.34	-0.30	-0.29	-0.27	-0.26	-0.27	-0.23	-0.10	0.83	0.10	-0.14	-0.13	-0.06	-0.03	0.01	0.02	0.02	0.02
Norway	-4.28	-0.34	-0.59	-0.54	-0.49	-0.49	-0.49	-0.45	-0.42	-0.38	-0.17	0.27	-0.09	-0.12	-0.04	0.03	0.02	-0.01	0.01	0.03	0.00
Poland	1.57	0.27	0.68	0.15	0.01	0.02	0.11	0.22	0.25	0.15	-0.01	-0.69	0.01	0.35	0.21	0.03	-0.07	-0.01	0.08	-0.08	-0.13
Portugal	2.89	0.35	0.48	0.45	0.35	0.37	0.35	0.39	0.36	0.34	0.05	-0.58	-0.35	0.08	0.24	0.11	0.01	0.00	-0.05	-0.06	0.01
Slovak Republic	4.77	0.68	0.86	0.57	0.52	0.52	0.62	0.56	0.66	0.36	-0.01	-0.87	-0.11	0.26	0.24	0.03	-0.04	0.01	0.10	-0.03	-0.16
Slovenia	-1.14	-0.01	0.00	0.14	-0.19	-0.18	-0.24	-0.16	-0.02	-0.03	-0.06	-0.46	-0.23	0.08	0.17	0.07	0.03	0.13	0.06	-0.09	-0.15
Spain	8.58	0.71	1.33	1.24	1.13	1.15	1.08	0.93	0.73	0.52	0.15	-0.48	-0.34	0.15	0.41	0.22	0.06	-0.06	-0.14	-0.16	-0.03
Sweden	0.01	0.45	0.34	-0.07	-0.16	-0.16	-0.15	-0.09	-0.13	-0.09	0.00	0.20	-0.04	-0.17	-0.07	-0.03	0.00	-0.04	-0.01	0.08	0.15
Switzerland	-3.34	-0.51	-0.46	-0.39	-0.41	-0.32	-0.33	-0.35	-0.29	-0.21	-0.07	0.23	-0.13	-0.13	-0.07	-0.02	0.03	0.04	0.02	0.03	0.01
Turkey	4.26	-0.08	0.80	0.65	0.38	0.37	0.31	0.30	0.22	0.08	-0.03	0.72	0.48	0.59	0.33	0.11	-0.05	-0.20	-0.31	-0.29	-0.13
United Kingdom	-0.48	0.17	-0.01	-0.21	-0.13	-0.15	-0.13	-0.14	-0.14	-0.08	-0.05	0.40	0.14	-0.03	-0.09	-0.04	0.02	0.01	-0.02	0.00	0.00
United States	0.38	0.09	-0.10	-0.06	0.02	0.04	0.06	0.07	0.06	0.02	0.03	0.13	0.15	-0.02	-0.08	-0.09	-0.07	0.00	0.03	0.04	0.05

Source: OECD calculations based on data from the OECD Labour Force Statistics database.

Appendix 2

Estimation of Okun's Law by groups of age

Table A2.1. **Regression coefficients: 15-24¹**
 Dependent variable: age-group's unemployment rate [equation (2)]

	FRA	AUS	AUT	BEL	CAN	DNK	ESP
Specification based on the deviation of real GDP from trend ²							
UNR(-1)	0.348 ***	0.228 ***	-0.373 ***	-0.437 ***	-0.195	-0.253 **	0.736 ***
CYCLE	-0.333 ***	-0.229 ***	-0.307	-0.779	-0.467 ***	-0.322 ***	-0.726 **
CYCLE(-1)	-0.254 ***	-0.236 ***	-0.206	-0.932	-0.222 *	-0.236 *	-0.613 *
CYCLE(-2)	-0.117	-0.094 *	-0.197	0.111	-0.124 *	-0.147	1.226 ***
Specification based on the output gap							
UNR(-1)	0.136	0.218 ***	-0.350 ***	-0.430 ***	-0.226	-0.284 **	0.477 ***
CYCLE	-0.316 **	-0.219 ***	-0.216	-0.608	-0.437 ***	-0.313 ***	-1.156 ***
CYCLE(-1)	-0.366 ***	-0.268 ***	-0.246	-1.004 *	-0.266 **	-0.249 **	-1.071 ***
CYCLE(-2)	-0.296	-0.163 **	-0.131	0.171	-0.135 **	-0.164	1.046 ***
	FIN	GBR	GRC	HUN	IRL	ITA	JPN
Specification based on the deviation of real GDP from trend ²							
UNR(-1)	-0.245 **	0.070	0.522 ***	0.130	0.536 ***	-0.091	-0.307 ***
CYCLE	0.028	-0.147	-0.184	-0.113	-0.021	-0.500 ***	-0.054 **
CYCLE(-1)	-0.453 ***	-0.364	-0.281 *	-0.536 ***	-0.213 **	-0.007	-0.047
CYCLE(-2)	-0.344 ***	0.066	-0.087	0.058	-0.073	-0.234	-0.023
Specification based on the output gap							
UNR(-1)	-0.263 **	0.017	0.343 ***	0.125	0.287 **	-0.171	-0.342 ***
CYCLE	0.047	-0.066	-0.176	-0.070	-0.107	-0.542 ***	-0.057 **
CYCLE(-1)	-0.439 ***	-0.450 **	-0.374 ***	-0.517 ***	-0.313 ***	-0.081	-0.110 ***
CYCLE(-2)	-0.364 ***	0.042	-0.173 **	0.047	-0.186 *	-0.339 ***	-0.045
	KOR	NLD	NZL	NOR	PRT	SVK	SVN
Specification based on the deviation of real GDP from trend ²							
UNR(-1)	-0.177	0.094	-0.207	-0.524 ***	0.123	0.356 **	-0.359 ***
CYCLE	0.008	-0.269 **	-0.129 *	-0.186	-0.389	-0.366 ***	-0.319 *
CYCLE(-1)	-0.158	0.040	-0.101 *	-0.119	-0.410 ***	-0.234 ***	-0.239
CYCLE(-2)	0.004	-0.167	-0.145 **	-0.135	0.132	-0.047	-0.150
Specification based on the output gap							
UNR(-1)	-0.179	0.078	-0.225 *	-0.564 ***	0.005	0.306 *	-0.399 ***
CYCLE	0.010	-0.247 **	-0.153 **	-0.333 **	-0.413 **	-0.338 ***	-0.264
CYCLE(-1)	-0.161	0.031	-0.125 **	-0.139	-0.576 ***	-0.244 ***	-0.301
CYCLE(-2)	-0.009	-0.167	-0.174 **	-0.013	-0.067	-0.054	-0.135
	SWE	USA					
Specification based on the deviation of real GDP from trend ²							
UNR(-1)	-0.143	0.137 *					
CYCLE	-0.133	-0.370 ***					
CYCLE(-1)	-0.352 ***	-0.164 ***					
CYCLE(-2)	-0.300 **	-0.151 ***					
Specification based on the output gap							
UNR(-1)	-0.131	0.089					
CYCLE	-0.069	-0.209 ***					
CYCLE(-1)	-0.333 ***	-0.272 ***					
CYCLE(-2)	-0.278 **	-0.217 ***					

Note: * p<0.10, ** p<0.05, *** p<0.01.

1. All variables are first-differenced.

2. Relative deviation of real GDP from its long-term trend computed by using a Hodrick-Prescott filter with a β parameter of 1 600, as usually applied to quarterly data.

Source: Authors' estimations based on data from the OECD Labour Force Statistics and Economic Outlook 92 databases; INSEE.

Table A2.2. **Regression coefficients: 25-54¹**
 Dependent variable: age-group's unemployment rate [equation (2)]

	FRA²	AUS	AUT	BEL	CAN	DNK	ESP
Specification based on the deviation of real GDP from trend ³							
UNR(-1)	0.320 ***	0.385 ***	-0.299 ***	-0.366 **	0.119	-0.107	0.623 ***
CYCLE	-0.106 ***	-0.076 **	-0.039	-0.084	-0.228 ***	-0.087 *	-0.609 **
CYCLE(-1)	-0.079 *	-0.088 ***	-0.082	-0.092	-0.075	-0.145 **	0.123
CYCLE(-2)	-0.055	-0.051 ***	-0.138 **	-0.114	-0.010	-0.163 ***	0.248
Specification based on the output gap							
UNR(-1)	0.182	0.353 ***	-0.264 **	-0.363 **	0.046	-0.165	0.316 ***
CYCLE	-0.081 **	-0.066	0.000	-0.046	-0.224 ***	-0.081 **	-0.774 ***
CYCLE(-1)	-0.106	-0.098 ***	-0.108	-0.110	-0.105	-0.148 ***	-0.202
CYCLE(-2)	-0.103	-0.080 ***	-0.103	-0.102	-0.029	-0.173 ***	0.205
	FIN	GBR	GRC	HUN	IRL	ITA	JPN
Specification based on the deviation of real GDP from trend ³							
UNR(-1)	-0.067	0.334 ***	0.930 ***	0.347 ***	0.481 ***	0.256	0.140
CYCLE	-0.078 **	-0.013	-0.040	-0.073	-0.058 *	-0.053	-0.010
CYCLE(-1)	-0.094 ***	-0.135 **	0.031	-0.021	-0.075	-0.029	-0.038 **
CYCLE(-2)	-0.040	-0.005	-0.073	-0.079	-0.037	-0.078	-0.025 **
Specification based on the output gap							
UNR(-1)	-0.111	0.287 *	0.791 ***	0.288 *	0.296 ***	0.183	0.090
CYCLE	-0.072 **	0.010	-0.056	-0.057	-0.079 ***	-0.061	-0.010
CYCLE(-1)	-0.097 ***	-0.157 ***	-0.017	-0.034	-0.113	-0.044	-0.065 ***
CYCLE(-2)	-0.048	-0.004	-0.094 *	-0.078	-0.074 **	-0.102 **	-0.032 **
	KOR	NLD	NZL	NOR	PRT	SVK	SVN
Specification based on the deviation of real GDP from trend ³							
UNR(-1)	-0.049	0.397 ***	0.217	0.234	0.437 ***	0.512 ***	0.066
CYCLE	-0.010	-0.106 **	-0.019	-0.054 **	-0.184 **	-0.088 ***	-0.025
CYCLE(-1)	-0.074 ***	0.006	-0.025	-0.069 ***	-0.160 ***	-0.079 ***	-0.085
CYCLE(-2)	-0.011	-0.098 *	-0.006	0.023	0.069	-0.050 *	-0.085 **
Specification based on the output gap							
UNR(-1)	-0.036	0.350 ***	0.192	0.066	0.294 ***	0.475 ***	0.022
CYCLE	-0.010	-0.095 **	-0.031	-0.037 **	-0.178 ***	-0.079 ***	0.005
CYCLE(-1)	-0.076 ***	0.003	-0.035	-0.078 ***	-0.217 ***	-0.078 ***	-0.098 *
CYCLE(-2)	-0.014	-0.103 **	-0.020	-0.017	0.011	-0.053 *	-0.104 **
	SWE	USA					
Specification based on the deviation of real GDP from trend ³							
UNR(-1)	0.040	0.270 ***					
CYCLE	-0.079 ***	-0.203 ***					
CYCLE(-1)	-0.098 ***	-0.095 ***					
CYCLE(-2)	-0.090 ***	-0.033 *					
Specification based on the output gap							
UNR(-1)	0.088	0.275 **					
CYCLE	-0.062 ***	-0.150 ***					
CYCLE(-1)	-0.090 ***	-0.148 ***					
CYCLE(-2)	-0.080 ***	-0.077 *					

Note: * p<0.10, ** p<0.05, *** p<0.01.

1. All variables are first-differenced.

2. 25-49 for France.

3. Relative deviation of real GDP from its long-term trend computed by using a Hodrick-Prescott filter with a β parameter of 1 600, as usually applied to quarterly data.

Source: Authors' estimations based on data from the OECD Labour Force Statistics and Economic Outlook 92 databases; INSEE.

Table A2.3. **Regression coefficients: 55-64¹**
 Dependent variable: age-group's unemployment rate [equation (2)]

	FRA²	AUS	AUT	BEL	CAN	DNK	ESP
Specification based on the deviation of real GDP from trend ³							
UNR(-1)	0.250 **	0.151 *	-0.283 *	-0.401 ***	-0.178	-0.249 **	0.202
CYCLE	-0.001	-0.065	-0.004	0.304 **	-0.276 **	-0.075	-0.517 *
CYCLE(-1)	-0.084 **	-0.114 ***	0.067	-0.537 ***	0.113	-0.110 *	-0.363
CYCLE(-2)	-0.072 *	-0.099 **	-0.024	0.090	-0.077	-0.179 ***	0.321
Specification based on the output gap							
UNR(-1)	0.131	0.081	-0.283 *	-0.397 ***	-0.190 *	-0.263 **	-0.020
CYCLE	0.032	-0.091	0.002	0.316 **	-0.285 **	-0.059	-0.510 *
CYCLE(-1)	-0.110 ***	-0.138 **	0.064	-0.524 ***	0.104	-0.102 **	-0.623 **
CYCLE(-2)	-0.131 **	-0.139 **	-0.030	0.081	-0.105	-0.175 ***	0.200
	FIN	GBR	GRC	HUN	IRL	ITA	JPN
Specification based on the deviation of real GDP from trend ³							
UNR(-1)	-0.269	-0.118	0.456 *	-0.005	0.264 ***	-0.087	-0.211 **
CYCLE	-0.020	0.027	-0.007	-0.060	-0.009	-0.057	-0.017
CYCLE(-1)	0.024	-0.097	-0.049	0.064	-0.023	-0.004	-0.034 *
CYCLE(-2)	-0.098 *	-0.051	-0.076	-0.070	-0.046 *	-0.016	-0.054 **
Specification based on the output gap							
UNR(-1)	-0.273 *	-0.157	0.320 *	-0.047	0.108	-0.109	-0.127
CYCLE	-0.022	0.042	-0.023	-0.065	-0.041	-0.068	-0.024
CYCLE(-1)	0.016	-0.084	-0.085 ***	0.040	-0.065	-0.014	-0.067 ***
CYCLE(-2)	-0.106 **	-0.070	-0.101 **	-0.081	-0.074 ***	-0.036	-0.063 **
	KOR	NLD	NZL	NOR	PRT	SVK	SVN
Specification based on the deviation of real GDP from trend ³							
UNR(-1)	-0.196	-0.127	-0.327 **	-0.358 ***	-0.142	0.317 **	-0.301 ***
CYCLE	-0.023	0.012	-0.028	-0.021	-0.048	-0.133 ***	-0.020
CYCLE(-1)	-0.079	0.049	-0.006	-0.005	-0.007	-0.015	0.000
CYCLE(-2)	-0.016	-0.113 **	0.016	0.071 *	-0.240 **	-0.063 *	0.170
Specification based on the output gap							
UNR(-1)	-0.201	-0.133	-0.336 **	-0.374 ***	-0.165	0.288 *	-0.325 **
CYCLE	-0.023	0.013	-0.049	-0.026	-0.056	-0.127 ***	0.004
CYCLE(-1)	-0.083	0.042	-0.008	-0.029	-0.016	-0.022	-0.043
CYCLE(-2)	-0.020	-0.120 **	-0.004	0.047 *	-0.308 ***	-0.068 *	0.188 *
	SWE	USA					
Specification based on the deviation of real GDP from trend ³							
UNR(-1)	0.157	0.104					
CYCLE	-0.010	-0.108 ***					
CYCLE(-1)	-0.045 *	-0.114 ***					
CYCLE(-2)	-0.079 *	-0.063 ***					
Specification based on the output gap							
UNR(-1)	0.155	0.101					
CYCLE	-0.006	-0.146 ***					
CYCLE(-1)	-0.043 *	-0.096 **					
CYCLE(-2)	-0.080 *	-0.126 ***					

Note: * p<0.10, ** p<0.05, *** p<0.01.

1. All variables are first-differenced.

2. 50+ for France.

3. Relative deviation of real GDP from its long-term trend computed by using a Hodrick-Prescott filter with a β parameter of 1 600, as usually applied to quarterly data.

Source: Authors' estimations based on data from the OECD Labour Force Statistics and Economic Outlook 92 databases; INSEE.

Table A2.4. **Regression coefficients: 15-24¹**

Dependent variable: difference of the age-group's unemployment rate from the total unemployment rate [eq. (3)]

	FRA	AUS	AUT	BEL	CAN	DNK	ESP
Specification based on the deviation of real GDP from trend ²							
UNR(-1)	0.168	0.012	-0.428 ***	-0.458 ***	-0.245	-0.308 ***	0.557 ***
CYCLE	-0.219 **	-0.128 ***	-0.251	-0.69	-0.177 **	-0.186 **	-0.246
CYCLE(-1)	-0.229 ***	-0.131 ***	-0.103	-0.711	-0.118	-0.085	-0.709 **
CYCLE(-2)	-0.086	-0.043	-0.068	0.195	-0.062	0.006	0.736 ***
Specification based on the output gap							
UNR(-1)	-0.015	0.025	-0.416 ***	-0.454 ***	-0.237	-0.314 ***	0.477
CYCLE	-0.219 *	-0.124 ***	-0.205	-0.565	-0.155 *	-0.185 **	-1.156 ***
CYCLE(-1)	-0.285 ***	-0.147 ***	-0.118	-0.766	-0.133	-0.090	-1.071 ***
CYCLE(-2)	-0.208	-0.079	-0.037	0.240	-0.052	-0.002	1.046 **
	FIN	GBR	GRC	HUN	IRL	ITA	JPN
Specification based on the deviation of real GDP from trend ²							
UNR(-1)	-0.298 ***	-0.060	0.250	0.009	0.311 *	-0.330 **	-0.372 ***
CYCLE	0.083	-0.082	-0.107	-0.03	-0.013	-0.381 ***	-0.018
CYCLE(-1)	-0.317 ***	-0.225	-0.264 **	-0.49 ***	-0.14 **	-0.084	-0.028
CYCLE(-2)	-0.274 ***	0.059	-0.007	0.1	-0.07	-0.12	-0.019
Specification based on the output gap							
UNR(-1)	-0.305 ***	-0.093	0.127	0.017	0.047	-0.385 ***	-0.342 ***
CYCLE	0.095	-0.039	-0.088	0.002	-0.074	-0.416 ***	-0.034
CYCLE(-1)	-0.305 ***	-0.273 *	-0.299 ***	-0.459 ***	-0.197 ***	-0.134	-0.041
CYCLE(-2)	-0.283 ***	0.048	-0.047	0.096	-0.136 *	-0.201 **	0.014
	KOR	NLD	NZL	NOR	PRT	SVK	SVN
Specification based on the deviation of real GDP from trend ²							
UNR(-1)	-0.273 ***	-0.106	-0.449 ***	-0.641 ***	-0.089	0.238 *	-0.410 ***
CYCLE	0.017	-0.174 *	-0.076	-0.17	-0.265	-0.238 ***	-0.289 *
CYCLE(-1)	-0.064	0.028	-0.054	-0.019	-0.294 ***	-0.168 ***	-0.131
CYCLE(-2)	0.016	-0.025	-0.099 *	-0.108	0.105	0.011	-0.053
Specification based on the output gap							
UNR(-1)	-0.272 ***	-0.110	-0.455 ***	-0.625 ***	-0.153	0.209	-0.434 ***
CYCLE	0.018	-0.163 *	-0.084 *	-0.254 **	-0.273 *	-0.221 ***	-0.251
CYCLE(-1)	-0.064	0.023	-0.064 *	-0.051	-0.383 ***	-0.170 ***	-0.193
CYCLE(-2)	0.014	-0.023	-0.111 **	0.021	-0.019	0.012	-0.004
	SWE	USA					
Specification based on the deviation of real GDP from trend ²							
UNR(-1)	-0.175 **	-0.185 **					
CYCLE	-0.049	-0.149 ***					
CYCLE(-1)	-0.228 **	-0.077 ***					
CYCLE(-2)	-0.187 *	-0.103 ***					
Specification based on the output gap							
UNR(-1)	-0.168 **	-0.191 *					
CYCLE	-0.006	-0.038					
CYCLE(-1)	-0.216 **	-0.111 **					
CYCLE(-2)	-0.173 *	-0.128 ***					

Note: * p<0.10, ** p<0.05, *** p<0.01.

1. All variables are first-differenced.

2. Relative deviation of real GDP from its long-term trend computed by using a Hodrick-Prescott filter with a β parameter of 1 600, as usually applied to quarterly data.

Source: Authors' estimations based on data from the OECD Labour Force Statistics and Economic Outlook 92 databases; INSEE.

Table A2.5. **Regression coefficients: 25-54¹**

Dependent variable: difference of the age-group's unemployment rate from the total unemployment rate [eq. (3)]

	FRA²	AUS	AUT	BEL	CAN	DNK	ESP
Specification based on the deviation of real GDP from trend ³							
UNR(-1)	-0.164 *	-0.008	-0.388 ***	-0.462 ***	-0.253	-0.393 ***	0.031
CYCLE	0.024	0.039 ***	0.025	0.001	0.034 *	0.038 **	0.001
CYCLE(-1)	0.000	0.036 ***	0.023	0.148 ***	-0.012	0.007	0.130 ***
CYCLE(-2)	0.034 *	0.016	-0.012	-0.039	0.011	-0.025	-0.086 **
Specification based on the output gap							
UNR(-1)	-0.318 ***	-0.021	-0.384 ***	-0.453 ***	-0.254	-0.395 ***	0.316
CYCLE	0.023	0.032 **	0.020	-0.010	0.031 *	0.038 **	-0.774
CYCLE(-1)	0.018	0.043 **	0.023	0.150 ***	-0.010	0.010	-0.202 ***
CYCLE(-2)	0.041	0.024	-0.014	-0.041	0.011	-0.023	0.205 ***
	FIN	GBR	GRC	HUN	IRL	ITA	JPN
Specification based on the deviation of real GDP from trend ³							
UNR(-1)	-0.334 **	-0.178	-0.263 **	-0.053	0.563 ***	-0.372 **	-0.487 ***
CYCLE	-0.020	0.014	-0.018 **	-0.003	0.009	0.041 **	0.008
CYCLE(-1)	0.021	0.047	-0.017	0.028 *	0.038 ***	-0.009	0.000
CYCLE(-2)	0.037 **	-0.027	0.014	-0.011	0.034 ***	-0.001	-0.003
Specification based on the output gap							
UNR(-1)	-0.332 **	-0.192	-0.251 **	-0.064	-0.593 ***	-0.379 **	-0.489 ***
CYCLE	-0.021	0.008	-0.014 *	-0.004	0.007	0.042 **	0.007
CYCLE(-1)	0.019	0.052 *	-0.007	0.028 *	0.036 ***	-0.008	0.000
CYCLE(-2)	0.036 **	-0.024	0.023 *	-0.007	0.035 ***	0.005	-0.003
	KOR	NLD	NZL	NOR	PRT	SVK	SVN
Specification based on the deviation of real GDP from trend ³							
UNR(-1)	-0.200 *	-0.201	-0.324 ***	-0.501 ***	-0.068	0.164	-0.447 ***
CYCLE	-0.001	0.000	0.024 **	0.015	-0.003	0.036 ***	0.019
CYCLE(-1)	0.010	-0.003	0.017 **	-0.007	-0.041	0.003	0.023
CYCLE(-2)	-0.004	0.006	0.027 **	-0.007	0.024	0.010	-0.040 **
Specification based on the output gap							
UNR(-1)	-0.200 *	-0.202	-0.331 ***	-0.501 ***	-0.072	0.120	-0.463 ***
CYCLE	0.001	0.000	0.025 **	0.034 **	0.006	0.035 ***	0.015
CYCLE(-1)	0.011	-0.002	0.019 **	-0.014	-0.040	0.006	0.036 *
CYCLE(-2)	-0.004	0.007	0.029 **	-0.028 **	0.030	0.010	-0.045 ***
	SWE	USA					
Specification based on the deviation of real GDP from trend ³							
UNR(-1)	-0.324 ***	-0.330 ***					
CYCLE	-0.006	0.008					
CYCLE(-1)	0.017	0.017 ***					
CYCLE(-2)	0.012	0.021 ***					
Specification based on the output gap							
UNR(-1)	-0.325 ***	-0.424 ***					
CYCLE	-0.008	0.008					
CYCLE(-1)	0.018	0.007					
CYCLE(-2)	0.012	0.008					

Note: * p<0.10, ** p<0.05, *** p<0.01.

1. All variables are first-differenced.

2. 25-49 for France.

3. Relative deviation of real GDP from its long-term trend computed by using a Hodrick-Prescott filter with a β parameter of 1600, as usually applied to quarterly data.

Source: Authors' estimations based on data from the OECD Labour Force Statistics and Economic Outlook 92 databases; INSEE.

Table A2.6. **Regression coefficients: 55-64¹**

Dependent variable: difference of age-group's unemployment rate from the total unemployment rate [eq. (3)]

	FRA²	AUS	AUT	BEL	CAN	DNK	ESP
Specification based on the deviation of real GDP from trend ³							
UNR(-1)	0.168	-0.098	-0.203	-0.371 ***	-0.312 ***	-0.429 ***	0.011
CYCLE	0.120 ***	0.089 **	-0.063	0.395 *	0.015	0.077	0.360 *
CYCLE(-1)	0.005	0.044	0.163	-0.312	0.223 ***	0.059	-0.051
CYCLE(-2)	0.028	0.000	0.085	0.176	0.013	-0.019	-0.028
Specification based on the output gap							
UNR(-1)	0.074	-0.123	-0.197	-0.379 ***	-0.304 ***	-0.443 ***	-0.020
CYCLE	0.132 ***	0.034	0.029	0.356	-0.006	0.086	-0.510 **
CYCLE(-1)	0.017	0.026	0.181	-0.274	0.233 ***	0.069	-0.623
CYCLE(-2)	0.015	-0.002	0.052	0.148	-0.004	-0.008	0.200
	FIN	GBR	GRC	HUN	IRL	ITA	JPN
Specification based on the deviation of real GDP from trend ³							
UNR(-1)	-0.410 ***	-0.380 ***	0.327	-0.063	-0.044	-0.161	-0.382 ***
CYCLE	0.043	0.003	0.083 **	0.002	0.065 **	0.053	0.000
CYCLE(-1)	0.161 ***	0.089	0.021	0.104	0.131 ***	0.022	0.007
CYCLE(-2)	0.012	0.017	0.111 **	0.081	0.061	0.099 **	-0.016
Specification based on the output gap							
UNR(-1)	-0.403 ***	-0.377 ***	0.182	-0.016	-0.106	-0.187 *	-0.343 ***
CYCLE	0.032	-0.023	0.085 ***	-0.013	0.053 ***	0.052	-0.010
CYCLE(-1)	0.150 ***	0.104	0.034	0.088	0.120 ***	0.026	-0.002
CYCLE(-2)	0.006	0.020	0.105 ***	0.064	0.063	0.111 ***	-0.017
	KOR	NLD	NZL	NOR	PRT	SVK	SVN
Specification based on the deviation of real GDP from trend ³							
UNR(-1)	-0.387 ***	-0.307 ***	-0.377 ***	-0.273 ***	-0.234 **	-0.023	-0.322 **
CYCLE	-0.001	0.103 **	0.040	0.033	0.130 *	0.008	0.050
CYCLE(-1)	0.010	0.108 *	0.062 **	0.083 **	0.216 ***	0.077 ***	0.117
CYCLE(-2)	0.018	0.065	0.077 ***	0.085 **	-0.142 **	0.034 *	0.267 **
Specification based on the output gap							
UNR(-1)	-0.388 ***	-0.308 ***	-0.380 ***	-0.285 ***	-0.237 **	-0.019	-0.418 ***
CYCLE	-0.001	0.088 *	0.040	0.053	0.139 **	0.000	-0.004
CYCLE(-1)	0.009	0.101	0.063 **	0.045	0.249 ***	0.068 ***	0.091
CYCLE(-2)	0.018	0.061	0.079 ***	0.071 *	-0.155 **	0.028	0.322 ***
	SWE	USA					
Specification based on the deviation of real GDP from trend ³							
UNR(-1)	-0.040	-0.203 ***					
CYCLE	0.052	0.123 ***					
CYCLE(-1)	0.073 **	0.063 ***					
CYCLE(-2)	0.017	0.025					
Specification based on the output gap							
UNR(-1)	-0.035	-0.223 ***					
CYCLE	0.037	0.023					
CYCLE(-1)	0.071 **	0.093 ***					
CYCLE(-2)	0.011	0.023					

Note: * p<0.10, ** p<0.05, *** p<0.01.

1. All variables are first-differenced.

2. 50+ for France.

3. Relative deviation of real GDP from its long-term trend computed by using a Hodrick-Prescott filter with a β parameter of 1600, as usually applied to quarterly data.

Source: Authors' estimations based on data from the OECD Labour Force Statistics and Economic Outlook 92 databases; INSEE.

WORKING PAPERS

The full series of Economics Department Working Papers can be consulted at www.oecd.org/eco/workingpapers/

1026. *Moving towards a single labour contract: pros, cons and mixed feelings*
(February 2013) by Nicolas Lepage-Saucier, Juliette Schleich and Etienne Wasmer
1025. *Boosting productivity in Australia*
(January 2013) by Vassiliki Koutsogeorgopoulou and Omar Barbiero
1024. *Housing, financial and capital taxation policies to ensure robust growth in Sweden*
(January 2013) by Müge Adalet McGowan
1023. *Labour market and social policies to foster more inclusive growth in Sweden*
(January 2013) by Stéphanie Jamet, Thomas Chalaux and Vincent Koen
1022. *Educational attainment and labour market outcomes in South Africa, 1994-2010*
(January 2013) by Nicola Branson and Murray Leibbrandt
1021. *Education quality and labour market outcomes in South Africa*
(January 2013) by Nicola Branson and Murray Leibbrandt
1020. *Do policies that reduce unemployment raise its volatility? Evidence from OECD countries*
(January 2013) by Alain de Serres and Fabrice Murtin
1019. *Slovakia: A catching up euro area member in and out of the crisis*
(January 2013) by Jarko Fidrmuc, Caroline Klein, Robert Price and Andreas Wörgötter
1018. *Improving the fiscal framework to enhance growth in an era of fiscal consolidation in Slovakia*
(January 2013) by Caroline Klein, Robert Price and Andreas Wörgötter
1017. *Investing efficiently in education and active labour market policies in Slovakia*
(January 2013) by Caroline Klein
1016. *The performance of road transport infrastructure and its links to policies*
(January 2013) by Henrik Braconier, Mauro Pisu and Debra Bloch
1015. *The US labour market recovery following the great recession*
(January 2013) by Wendy Dunn
1014. *Why do Russian firms use fixed-term and agency work contracts?*
(December 2012) by Larisa Smirnykh and Andreas Wörgötter
1013. *The Equity implications of fiscal consolidation*
(December 2012) by Lukasz Rawdanowicz, Eckhard Wurzel and Ane Kathrine Christensen
1012. *The Dutch labour market: preparing for the future*
(December 2012) by Mathijs Gerritsen and Jens Høj

1011. *Reforming policies for the business sector to harvest the benefits of globalisation in the Netherlands*
(December 2012) by Mathijs Gerritsen and Jens Høj
1010. *Health care reform and long-term care in the Netherlands*
(December 2012) by Erik Schut, Stéphane Sorbe and Jens Høj
1009. *Enhancing the inclusiveness of the labour market in Belgium*
(December 2012) by Jens Høj
1008. *Reducing poverty in Estonia through activation and better targeting*
(December 2012) by Sarah Flèche and Artur Radziwill
1007. *Matching skills and jobs in Estonia*
(December 2012) by Lilas Demmou
1006. *Debt and macroeconomic stability: An overview of the literature and some empirics*
(December 2012) by Douglas Sutherland and Peter Hoeller
1005. *Debt and macroeconomic stability: Debt and the business cycle*
(December 2012) by Volker Ziemann
1004. *Debt and macroeconomic stability: Case studies*
(December 2012) by Rossana Merola
1003. *Debt and macroeconomic stability*
(December 2012) by Douglas Sutherland, Peter Hoeller, Rossana Merola and Volker Ziemann
1002. *Reducing greenhouse gas emissions in a cost effective way in Switzerland.*
(December 2012) by Anita Wölfl and Patrizio Sicari
1001. *Strengthening innovation in the United States*
(November 2012) by David Carey, Christopher Hill and Brian Kahin
1000. *Long-term growth scenarios*
(January 2013) by Åsa Johansson, Yvan Guillemette, Fabrice Murtin, David Turner, Giuseppe Nicoletti, Christine de la Maisonneuve, Philip Bagnoli, Guillaume Bousquet and Francesca Spinelli
999. *Selected aspects of household savings in Germany – evidence from micro-data*
(November 2012) by Christina Kolerus, Isabell Koske and Felix Hüfner
998. *Improving the tax system in Indonesia*
(November 2012) by Jens Arnold
997. *Unleashing business innovation in Canada*
(November 2012) by Alexandra Bibbee
996. *Public policy and resource allocation: evidence from firms in OECD countries*
(October 2012) by Dan Andrews and Federico Cingano