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***Labour market transitions before
and during a severe economic
downturn: some evidence from
micro-economic data***



This supplement to the Quarterly Review provides in-depth analysis of recent labour market and social developments. It was prepared by E. Meyermans from the Employment Analysis and Social Analysis Units in DG EMPL.

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Labour market transitions before and during a severe economic downturn: some evidence from micro-economic data

This supplement provides some empirical evidence on labour market transitions in the European Union before and during the economic downturn that started in 2008¹ – using micro-economic EU SILC data² (for the Member States for which data are available³).

A search and matching model underpinned the empirical analysis of conditional transition probabilities. In such model labour market transitions are triggered by mismatches between reservation wages and productivity. For instance, as an economy goes into recession, the productivity of many matches falls below the required reservation wage, which leads to an upsurge in job destructions and increased inflows into unemployment. At the same time, firms reduce their hiring activities and post fewer vacancies so that the flows from unemployment to employment are reduced. Both effects reduce employment and increase unemployment.

Comparing labour market transitions in the European Union as a whole in 2010 with transitions in 2006, the analysis shows that employment stability declined significantly in 2010 whereby a transition to unemployment was the most important destination on leaving employment; that transitions of men and young people were most strongly affected; and that the stepping-stone function of temporary employment (whereby workers on temporary contracts move up to a permanent contract) reduced notably.

The following charts provide some further details.⁴

Transitions from employment

This section shows estimates of the impact of individual characteristics (i.e. gender, age and skills) on the probability to transit from employment (E) to another labour market state (i.e. self-employment (S), unemployment (U), education (Ed) or inactivity (I)) in 2006 and 2010.

Chart 1 shows the changes in the transition probabilities of the reference groups between 2006 and 2010.⁵ These reference categories are women for gender, 35-54 years old for age, and medium skilled for skill level. The chart shows that the probability to transit from employment to unemployment increased for women by 0.7 percentage point (pps) in 2010 compared with 2006, for 35-54 years old workers by 1.2 pps and for medium-skilled workers by 1.2 ppt. At the same time, the probability to stay employed was for women 0.7 pps lower in 2010 than in 2006, 0.9 pps for 35-54 years old, and 1.1 pps for medium-skilled workers.

¹ I.e., based on the "Study on labour market transitions using micro-data from the Statistics on Income and Living Conditions (SILC)", executed by Rheinisch-Westfälisches Institut für Wirtschaftsforschung (RWI) with funding of the European Union Programme for Employment and Social Solidarity - PROGRESS (2007-2013) (contract VC/2013/0020)

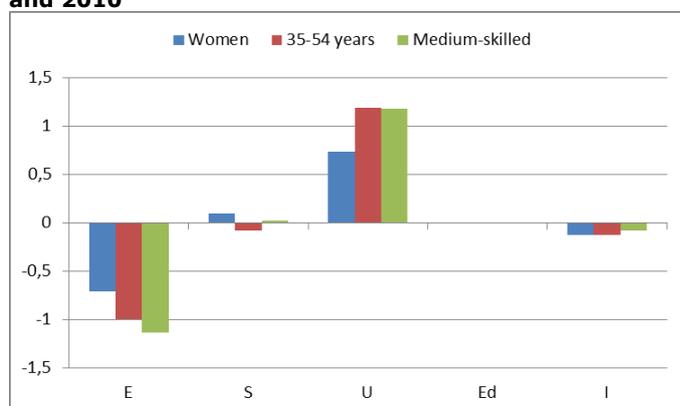
² Applying advanced econometric techniques, i.e., multinomial logit estimation techniques that recognize more than two possible discrete outcomes, *in casu* the labour market states employment, unemployment, self-employment, education and inactivity.

³ 2010 SILC releases not available for Germany, Croatia and Romania, but including Iceland and Norway.

⁴ See RWI (2014) for an elaborated discussion of the estimation results.

⁵ Technically speaking: the values shown in Chart 1 reflect the point estimates of a "crisis dummy" which is 0 in 2006 and 1 in 2010, thereby measuring the impact of the crisis on the transition probability of the reference category, i.e. women, medium skilled, and 35-54 years old.

Chart 1: Change in transition probability from employment for reference categories between 2006 and 2010



Source: RWI (2014, Tables A.6.5, A.6.7 and A.6.9)

Note: E: employment, S: self-employed, U: unemployed, Ed: education, I: inactive

Note: the bars reflect the value of the point estimate of a "crisis dummy" which is 0 in 2006 and 1 in 2010, thereby measuring the impact of the crisis on the transition probability of the reference category, i.e. women, medium skilled, and 35-54 years old.

Note: only statistically significant estimates for E and U.

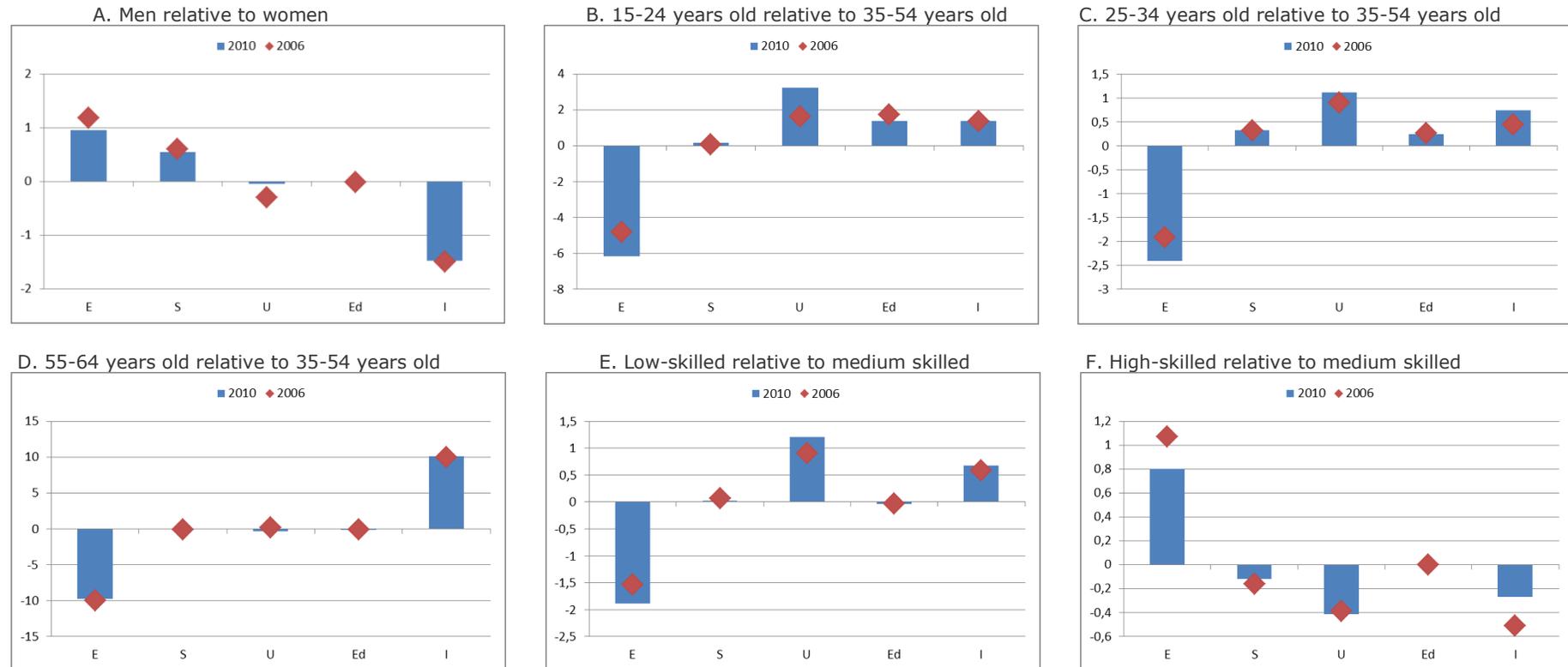
Chart 2 shows transition probabilities from employment for the other groups of workers (relative to the reference category): the blue bars show the transition probabilities in 2010, while the red stars show the probabilities in 2006. All individual covariates that were included in the regression analysis have intuitive signs and are significant in most cases. The estimation results can be summarised as follows.

In 2010, employed men were 0.9 pps more likely to remain employed than women, compared to 1.2 pps in 2006. Men were about 1.5 pps less likely to become inactive than women in 2010 – which is almost the same as in 2006, see Chart 2.A. Here it should be noted that these estimates are corrected for individual and occupational characteristics of the employees, which implies that they take into account the often stronger sensitivity of men's job opportunities to the business cycle. In other words, the estimated convergence of probability in employment stability may reflect structural changes in labour market behaviour – such as a decrease in discrimination against female workers.

In 2010, the probability to remain employed was highest for those aged between 35 and 54 years and lowest for those aged between 55 and 64 years, see Charts 2.B, 1.C and 2.D. The probability of making a transition from employment to unemployment was highest for the youngest cohort (aged 15-24) in both periods, even increasing by 1.6 pps (compared to the 35-54 cohort) between 2006 and 2010.

Finally, the employment stability of the low-skilled decreased by 0.4 pps compared to the medium skilled between 2006 and 2010, see Charts 2.E. At the same time, their probability to become unemployed or inactive increased, up from respectively 0.9 pps and 0.6 ppt. in 2006 to respectively 1.2 pps and 0.7 pps in 2010. Not surprisingly, the high-skilled workers had a lower probability to become unemployed or inactive than their medium-skilled and low-skilled counterparts in 2010 – albeit that it was less pronounced than in 2006, see Chart 2.F.

Chart 2: Probability of transition from employment in 2006 and 2010 (scales vary)



Source: RWI (2014, Table A.6.13 and Table A.6.15)

Note: E: employment, S: self-employed, U: unemployed, Ed: education, I: inactive

Transitions from unemployment

Charts 3 shows to what extent individual characteristics affected the probability to transit from unemployment into another labour market state in 2006 and 2010. Changes in the transition probabilities from unemployment for reference categories between 2006 and 2010 are not shown as they did not include statistically significant estimates.

Unemployed men were 4.9 pps more likely to remain unemployed than women in 2010 (up from 0.5 pps in 2006). Nevertheless, an unemployed man was about 3 pps more likely to find a job than a woman in 2010 (but down from 6.7 pps in 2006), and also 9.3 pps less likely to become inactive (about the same as in 2006).

In 2010, young persons were about 8 ppt. more likely to make a transition from unemployment to employment than the 35-54 years cohort, while older persons were about 17.5 ppt. less likely than the 35-54 years cohort. Nevertheless, for the young cohort this probability decreased by about 4 pps between 2006 and 2010, while it increased for the older workers by about 2.5 pps.

In 2010, the low skilled were 7.4 pps more likely to remain unemployed than the medium-skilled (about the same as in 2006), but they were still 6.3 pps less likely to transit from unemployment to employment than the medium skilled (compared to 8.8 pps 2006), see Charts 3.E. By contrast, unemployed high skilled workers experienced a strong increase in their probability to stay unemployed (compared to the medium skilled), while their probability to get employed also decreased, down by 2 pps between 2006 and 2010.

Transition from temporary employment

Charts 4 shows to what extent individual characteristics affect the probability to transit from temporary employment to another labour market state (including permanent employment). Most estimated coefficients display intuitive tendencies, but several are not statistically significant.⁶

Men were about 2 ppt. more likely to move from temporary to permanent employment than women in 2010, compared to 3.4 pps in 2006, see Chart 4.A. They were also about 2 ppt. less likely to become inactive in 2010, compared to 2.6 pps in 2006. Again, it should be noted that these estimates are net of job characteristics, so that the change in the estimated parameter values may indicate structural changes such as less discrimination against female workers.

In 2010, the youngest and oldest age cohorts were respectively 3.2 and 8.0 ppt. less likely to remain in temporary employment than the middle-aged group, compared to respectively 1.5 ppt. and 4.0 pps in 2006, see Chart 4.B. Young workers on a temporary contract were about 1.4 ppt. more likely to move into education than the 35-54 years old in 2010, compared to 3.3 ppt. in 2006; and they were also about 3.6 ppt. more likely to transit to unemployment than the 35-54 years old.⁷ The oldest workers on a temporary contract were about 11.9 pps more likely to become inactive than the 35-54 years old in 2010, compared with 9.8 pps in 2006.

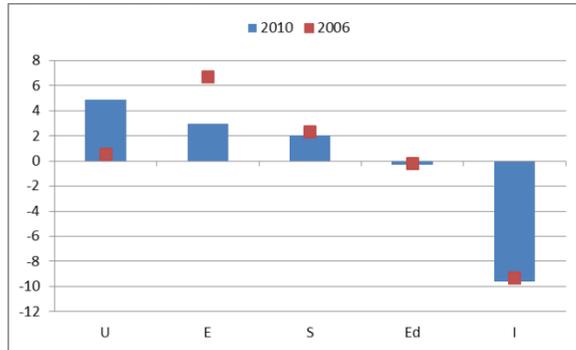
Chart 4.E to 4.F show that low-skilled workers on a temporary contact were 2.9 pps less likely to move to a permanent-contract job than medium-skilled workers in 2010, compared to 4.7 pps in 2006. However, they were also 4.8 ppt. more likely to become unemployed than the medium-skilled workers in 2010, compared to 2.9. pps in 2006. Finally, in 2010 the high-skilled workers on a temporary contract were more likely to remain on temporary contracts and less likely to transit into unemployment and inactivity than the other skill groups – though these differences in probability have decreased notably between 2006 and 2010.

⁶ 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. Change in transition probability from temporary employment for the reference categories between 2006 and 2010 is not shown because they did not include significant estimates.

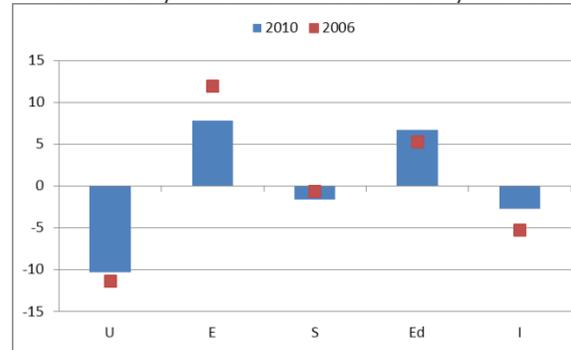
⁷ No significant estimate for 2006.

Chart 3: Probability of transition from unemployment in 2006 and 2010 (scales vary)

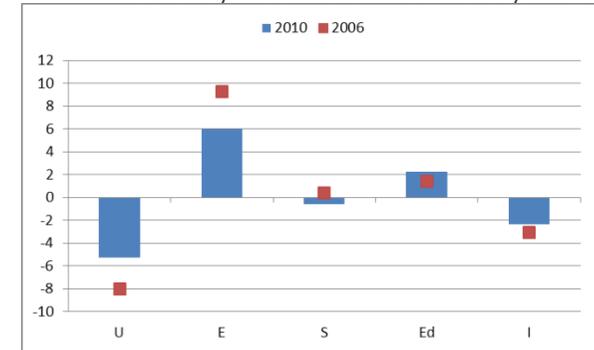
A. Men relative to women



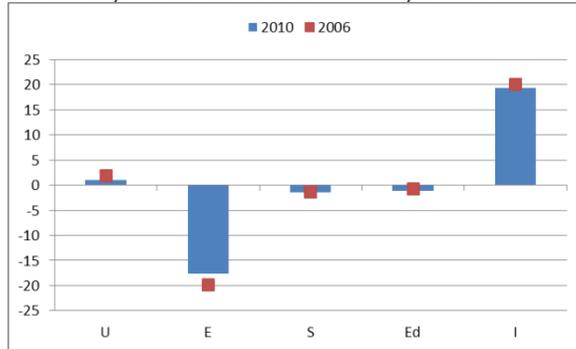
B. 15-24 years old relative to 35-54 years old



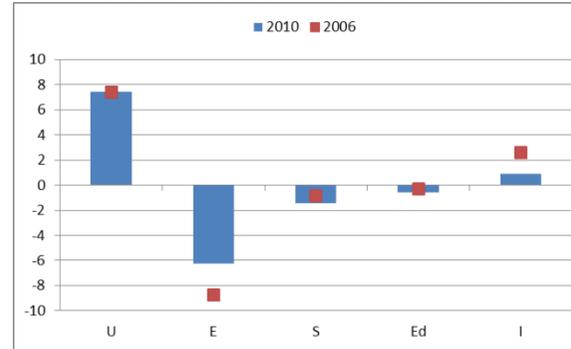
C. 25-34 years old relative to 35-54 years old



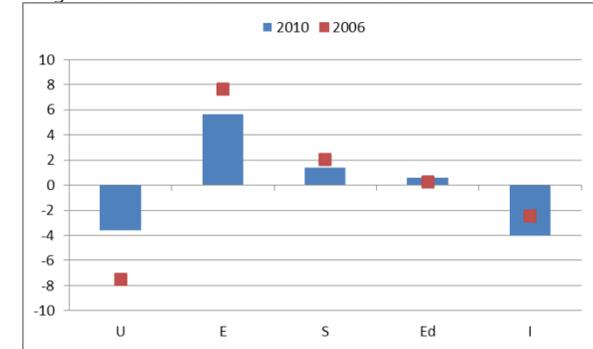
D. 55-64 years old relative to 35-54 years old



E. Low-skilled relative to medium skilled



F. High-skilled relative to medium skilled

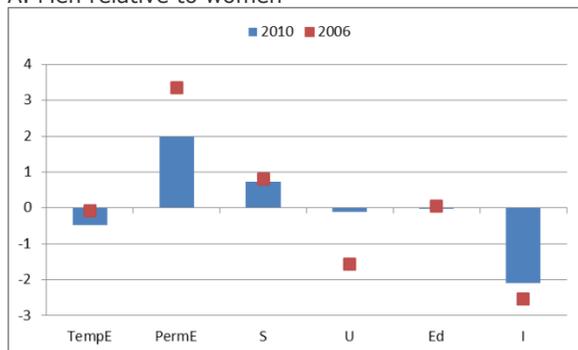


Source: RWI (2014, Table A.6.61 and Table A.6.63)

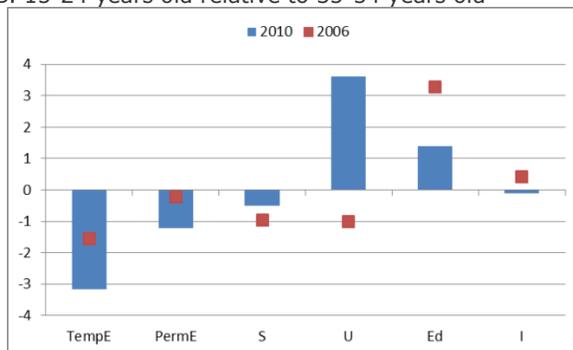
Note: E: employment, S: self-employed, U: unemployed, Ed: education, I: inactive

Chart 4: Probability of transition from temporary employment in 2006 and 2010 (scales vary)

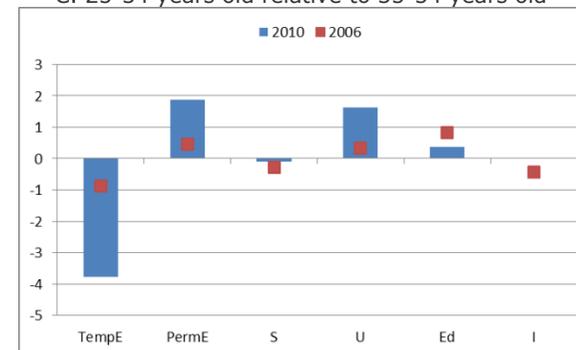
A. Men relative to women



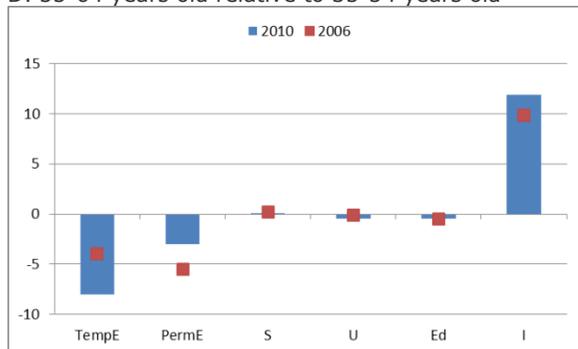
B. 15-24 years old relative to 35-54 years old



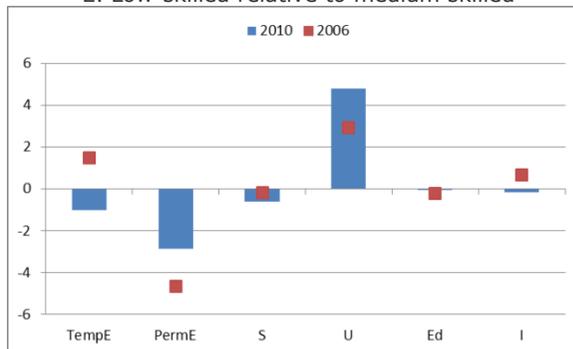
C. 25-34 years old relative to 35-54 years old



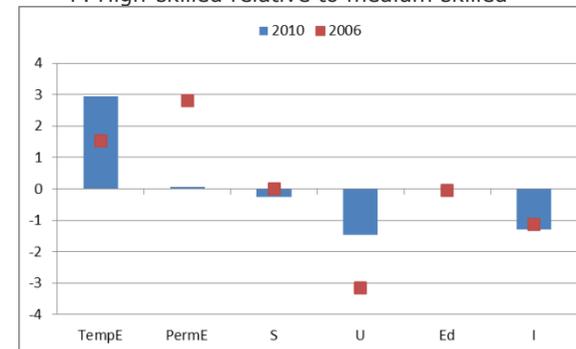
D. 55-64 years old relative to 35-54 years old



E. Low-skilled relative to medium skilled



F. High-skilled relative to medium skilled



Source: RWI (2014, Table A.6.31 and Table A.6.31)

Note: E: employment, S: self-employed, U: unemployed, Ed: education, I: inactive