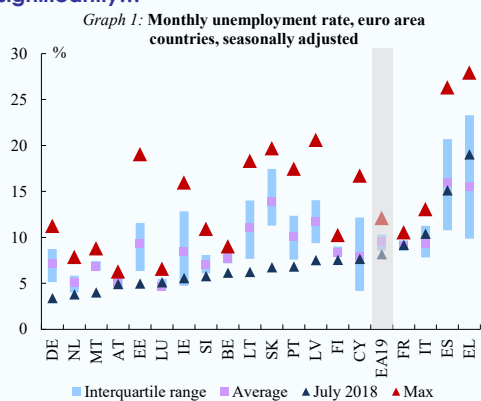


### Box 1.4: Labour market slack in the euro area

The euro area's economic recovery since the Great Recession has been particularly job-rich. The picture at present, however, is somewhat complex, as indicators point to evidence of both underemployment and labour market tightening occurring at the same time. This box examines different concepts of labour-market slack both at the level of the euro area and at the level of Member States. Its aim is to present a granular picture of the degree of un(der)utilised labour potential and its geographical distribution by looking at key country-specific labour-market indicators that go beyond headline unemployment rates.

#### Labour market conditions have improved significantly...



Source: Eurostat. Maximum and average since February 2000.

After more than five years since the beginning of the recovery, the unemployment rate in the euro area is gradually returning to its pre-crisis level and the number of employed persons stands at a record high. In a majority of euro area countries, the unemployment rate is below its long-term average (see Graph 1), but the situation varies considerably between Member States. With supply constraints now apparent in a number of Member States and sectors, a careful monitoring of emerging tensions in labour markets could help to assess the possible emergence of 'speed limits' to GDP growth. Considering the robust rate of employment growth since the start of the recovery and recent signs of labour-market tightening, wage dynamics have been remarkably subdued<sup>(1)</sup>. This observation extends beyond the euro area, in a phenomenon labelled 'wageless' economic growth<sup>(2)</sup>. Many

<sup>(1)</sup> See Vandeplass, A., Arpaia, A., Ruscher, E., Turrini, A., and W. Roeger (2018). 'Wage dynamics in the EMU'. European Commission *Quarterly Report on the Euro Area*, Forthcoming.

<sup>(2)</sup> See OECD (2018). *Employment Outlook*.

reasons have been put forward for the apparent flattening of the Phillips curve, including remaining slack in the labour market, low inflation and productivity growth, monopsonistic power of large corporations<sup>(3)</sup>, changes in wage-bargaining systems, the degree of forward and backward-looking price indexing and downward nominal wage rigidities<sup>(4)</sup>. This debate is, however, beyond the scope of this Box.

The movement of workers from countries with higher unemployment to countries in need of workers could play an important role in cushioning negative labour demand shocks and in smoothing the adjustment process. Yet, despite significant improvements<sup>(5)</sup>, cross-border labour mobility plays a weaker role in the EU than it does in the US. This is likely to result from differences in language and culture, as well as institutional factors hindering labour mobility. The result, however, is that isolated labour demand shocks tend to have stronger and more persistent effects in the EU than in the US<sup>(6)</sup>. Such findings highlight the need for a more detailed assessment of the cyclical position of national labour markets.

#### ...but high underemployment levels remain in some countries...

The underutilisation of labour resources is most commonly measured by the unemployment rate. In most countries, it is now both lower than its average since 2000 and in the lower range of its historical distribution, although Greece, Spain, Italy and Cyprus are obvious exceptions. While highlighting the degree of dispersion of

<sup>(3)</sup> Labour market monopsony is sometimes overlooked due to the assumption of an entirely competitive market with workers paid their marginal product of labour. See Azar, J., Marinescu, I., Steinbaum, M. and B. Taska (2018). 'Concentration in US labour markets: Evidence from online vacancy data'. *Vox CEPR Policy Portal*. June.

<sup>(4)</sup> See Petra, M., Robert, A., Ana, B., Clémence, B. and T. Peter (2017). 'Asymmetric wage adjustment and employment in European firms'. Banque de France *Working Paper Series* 640. September.

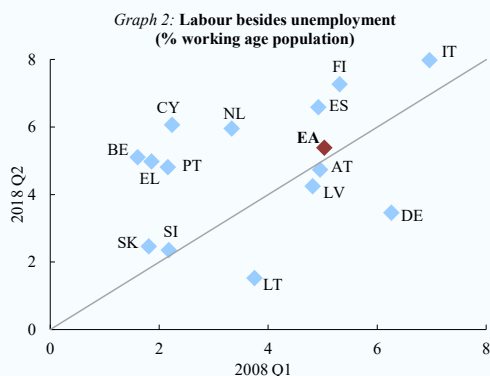
<sup>(5)</sup> Particularly with the crisis, see Jauer, J., Liebig, T., Martin, J. P., and P. A. Puhani (2018). 'Migration as an adjustment mechanism in the crisis? A comparison of Europe and the United States 2006-2016'. IZA Institute of Labor Economics *Discussion Paper* 11328. February.

<sup>(6)</sup> Beyer, R. C. M. and F. Smets (2015). 'Labour market adjustments in Europe and the US: How different?'. *ECB Working Paper Series* 1767. March.

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Box (continued)

unemployment rates across countries –which is also the result of structural labour market features - this measure suggests relatively limited spare capacity, on average.



Source: Eurostat. Underemployed part-time workers; persons available to work but not seeking; and seeking but not immediately

This definition however, makes a rigid distinction between employment and unemployment status, depending on a rather narrow definition of unemployment, which includes only those currently without work, available to begin work within two weeks, and actively seeking work (7). More recently, greater focus has been placed on wider measures of underemployment, which also consider (i) those that are not employed or unemployed but still marginally attached to the labour force (8) as well as (ii) those employed part-time but wishing to work more hours, also named as underemployed part-timers. (9) Despite improving since the start of the recovery in 2013, such measures show that underemployment is still higher than it was 10 years ago in a majority of euro area countries, despite being broadly unchanged for the euro area as a whole (see Graph 2).

Although they provide a richer framework than traditional labour status measures, these survey-based figures should be read with caution. (10) They may be subject to cyclical as well as structural developments, or may depend on factors other than labour-market demand, which complicates their interpretation in terms of labour-market slack. For example, they may depend

(7) See European Commission (DG EMPL) (2018). ‘Labour market and wage developments in Europe. Annual Review 2017.’

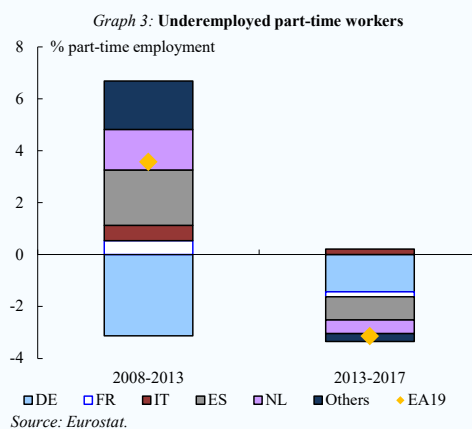
(8) Including those classified as inactive who are not currently seeking work, despite being available (mainly ‘discouraged workers’) and those who are actively seeking work, but are not available to begin work within the next two weeks.

(9) See Eurostat (2018). ‘Underemployment and potential additional labour force statistics’. May.

(10) ECB (2017). ‘Assessing labour market slack’. ECB *Economic Bulletin* 3, pp. 31-5 (Box 3).

on the ability of underemployed part-timers to increase the number of hours worked and the willingness of those currently inactive to participate, given expected lower job-finding probabilities and job-search intensities. In many countries, this additional slack is mostly driven by changes in the number of part-time workers wishing to work additional hours. (11)

As for underemployed part-time work, the picture varies considerably between Member States. It currently represents about a fifth of all part-time workers in the euro area, ranging from about 7% of overall part-time employment in Estonia and 12% in Germany, to close to 60% in Cyprus, 70% in Greece and about 50% in Spain. While sizeable in a number of countries, the current share of underemployed part-time workers is already close to or below 2013 levels in the majority of the cases but still significantly above 2008 levels (year for which quarterly data starts to be available) in Cyprus, Greece, Portugal and Spain. All in all, in the euro area, the increase in the share of underemployed part-time workers has been partly reversed and is now about 0.4 pps. higher than in 2008 (see Graph 3).



Source: Eurostat.

...and a broadly closed labour gap.

To make a more detailed assessment of the cyclical position of the euro area's labour market, one can also take stock of estimates resulting from the European Commission's common methodology for

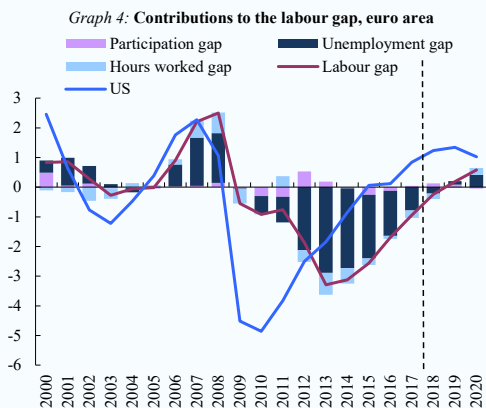
(11) Measuring the willingness of workers to vary their hours at the current pay rate, it has been argued that underemployment in most European countries has not returned to its pre-recession levels, with the main exception being Germany. Bell, D. N. F., and D. G. Blanchflower (2018). ‘Underemployment in the US and Europe’. NBER *Working Paper* 24927. August.

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Box (continued)

assessing the output gap. These provide a breakdown of the potential output of the economy into its TFP, net capital stock and its various labour market components. The potential labour supply builds on estimates of (i) the non-accelerating inflation (i.e. wage) rate of unemployment; (ii) the trend participation rate; and (iii) trend hours worked per person employed. Each of these measures helps to identify possible sources of labour market tightness or slack in national labour markets.

According to these estimates, the labour market response to the crisis reached its lowest point in terms of underutilised labour potential in 2013 (see Graph 4). Nearly 90% of the labour market slack in 2013 was due to the unemployment gap – i.e. the difference between the observed unemployment rate and the estimated non-accelerating wage rate of unemployment (NAWRU)<sup>(12)</sup> – with the remaining 10% due to the hours worked and participation rate gaps.



The estimates also suggest that after four years of above-potential average GDP growth rates in the euro area, the crisis-related slack in the labour market has been broadly removed, with the labour gap close to zero. Compared to the US, labour supply in the euro area is thus converging to its potential level with a three- year delay, offering a preview into a possible cyclical path for the euro area labour market.

One important insight is that the euro area NAWRU is estimated to be lower than in the

<sup>(12)</sup> See D’Auria, F., Denis, C., Havik, K., Mc Morrow, K., Planas, C., Raciborski, R., Röger, W. and A. Rossi (2014). ‘The production function methodology for calculating potential growth rates and output gaps’. European Economy, *Economic Papers* 420. July.

pre-crisis period, standing at around 8.5% in 2017 after peaking at 9.5% in 2009.<sup>(13)</sup> While not constituting a floor for the unemployment rate, such estimates highlight that inflationary pressures are expected to start building up at comparatively lower levels of unemployment. Notable exceptions are Greece and Spain, where estimates are higher and still above average, as well as Cyprus and Italy, where previously below-average estimates have increased and are now higher than the euro area aggregate.

Although the euro area unemployment gap can be seen as slightly negative, the same cannot be said for all its members (see Graph 5). As of 2017, it was estimated to be negative and below average in five euro area countries, and most significantly in Greece, Cyprus and Italy. At the same time, positive gaps of about 1 pp. are signaled in Lithuania, Slovakia and Ireland.



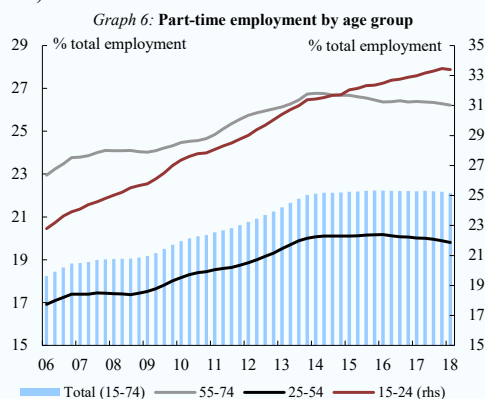
While a majority of countries does not show a large reservoir of untapped labour potential, it emerges that the euro area gap is being weighed down by a sizeable unemployment gap in Greece (which stands out at around -6 pps.), followed by Cyprus, Italy, Finland and Spain (close to -1 pp.). According to the Autumn Forecast, in 2018 the distribution is expected to look more skewed due to rapidly closing gaps in both Cyprus and Spain, with only three countries showing unemployment rates above their estimated NAWRUs (notably Greece, Italy and Finland). This assessment confirms the view that any remaining pockets of slack in the labour market are set to shrink in both number and size.

<sup>(13)</sup> With ECFIN's NAWRU estimates currently at lower levels than those estimated by the OECD and IMF.

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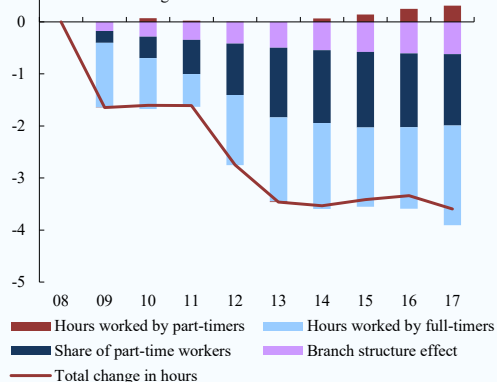
'Hours worked' is another measure of labour supply and of the 'intensive' use of labour in the production process. Changes in the number of hours worked can be explained by the share of part-time work (see Graph 6), employment creation in sectors with fewer than average hours worked, or changing working patterns (i.e. maximum weekly hours).



Source: Eurostat.

For the euro area as a whole, average hours worked per employee remain below its pre-crisis level. According to Commission's estimates, trend hours worked have stabilised over recent years, with no indication that its secular decline will be reversed anytime soon. Hours worked have fluctuated around a declining trend – with economic upturns linked to a stabilisation of the trend, not an upward movement. A shift-share decomposition of changes in hours worked confirms the role of some structural factors – namely employment creation in sectors with below-average working hours and an increasing share of part-time employment (see Graph 7). All in all, in 2018, hours worked per person employed are estimated to be close to trend in the euro area and across most Member States.

**Graph 7: Average hours worked per person employed, euro area cumulative change**



Source: Own calculations.

Finally, the euro area participation rate also is estimated to be close to its trend level with either

positive or negative deviations being very limited in size across countries (around 0.5 pps. or less). The responsiveness of participation to slack usually follows stylized mechanisms. Job search is determined, among other factors, by job security, with a lower job-loss risk (typical of a tightening labour market) stimulating those outside the labour force to look for jobs. At the same time, increasing flows into unemployment and rising job scarcity discourages non-active working-age individuals from engaging actively in the market.<sup>(14)</sup> Nevertheless, participation gaps are estimated to have been rather limited during the crisis years – having a low impact on labour underutilisation.

### Crisis legacies weigh on prime-age workers...

One of the usual critiques of methodologies such as the one employed in the previous analysis, is that they do not consider possible participation and unemployment gaps emerging from different age cohorts, skill groups, or gender groups, as they rely on average headline figures. The employment rate has the advantage of offering the same degree of granularity as the unemployment rate, while taking into account the impact of participation rates of specific groups of workers by comparing employment against the working age population, not the labour force (see Graph 8).<sup>(15)</sup>

The unemployment rate of young cohorts (15-24) typically show a higher sensitivity to changing cyclical conditions. Between 2007 and 2013, the euro area youth unemployment rate increased at twice the pace as the overall unemployment rate. This higher pro-cyclicality reflects a lower level of job-specific skills, lower job security and other social considerations, reflected in a higher proportion of temporary and part-time contracts. Despite declining as the economic expansion progressed,<sup>(16)</sup> the youth unemployment rate in 2017 was still above pre-crisis levels in around 2/3

<sup>(14)</sup> Chalom, R., Karahan, F., Pilosoph, L. and G. Topa (2018). 'Whither labour force participation?'. Federal Reserve Bank of New York, *Liberty Street Economics*. September.

<sup>(15)</sup> The unemployment rate can fall without a rise in employment if unemployed workers leave the labour force. See Donovan, S. (2015). 'An overview of the employment-population ratio'. Congressional Research Service. May.

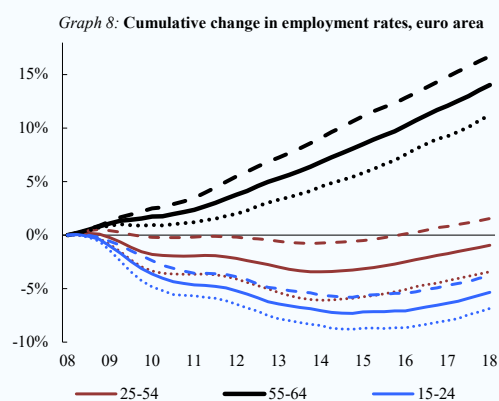
<sup>(16)</sup> Also explained by a reduced size of this age group due to smaller new cohorts and immigration flows, and a move towards higher educational attainment and training, rather than job creation. See Qu, H. and H. Schoelermann (2018). 'Youth unemployment during the euro area economic recovery'. *IMF Country Report* 18/224, July.

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Box (continued)

of the euro area countries and ranged between 43.6% in Greece and 6.8% in Germany.

At the same time, the euro area youth employment rate stood at 32.3% in 2017, above the trough of 30.8% reached in 2015 but below the peak of 37.7% in 2007. When unrelated to higher participation in education, prolonged out-of-work periods can have lasting impacts on skills and incomes due to hysteresis effects eroding human capital. <sup>(17)</sup> It is also costly to productivity through lower innovation, as highly-productive firms tend to expand while hiring younger people, and on knowledge diffusion, through lower mobility and job-switching.



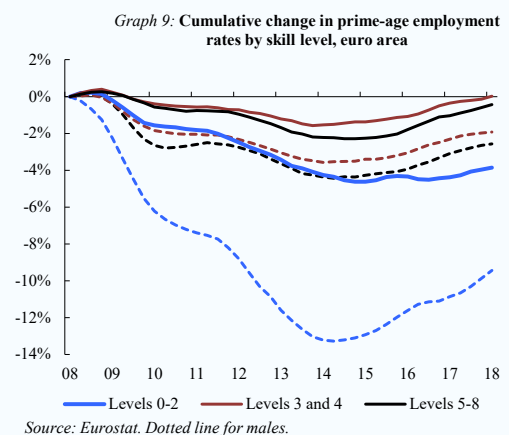
The impact of the crisis has been particularly hard on younger people with less than upper secondary education for whom the employment rate has stabilised at a lower level since 2014 (around -10 pps.). Only for those with higher levels of education has the employment rate being edging up to, or neared pre-crisis levels.

Prime-age cohorts (25-54) are particularly relevant, as their labour market participation remains mostly unaffected by their schooling and retirement decisions. Contrary to the overall employment rate, the euro area prime-age employment rate is still slightly below its 2007 level, but continues to increase, amid differentiated developments between males and females. Despite recovering since 2013, the employment rate of males is still 3.3 pps. below its 2008 level, whereas it is 0.8 pps. above for females; in line with a trend-increase in female participation across age groups.

<sup>(17)</sup> See Draghi, M. (2017). ‘Youth unemployment in the euro area’. Speech at Trinity College, Dublin, 22 September.

...with those with lower skill levels struggling to catch up...

The crisis-impact on prime-age employment rates has also been heterogeneous across skill-levels <sup>(18)</sup> (see Graph 9). Taking a closer look at the data shows that by 2017, those with less than lower secondary education had an employment rate around 6 pps. lower than by 2007 – which compares with around -1 pp. for those with higher skill levels. At the same time, the impact for low-qualified males has been more than twice as large as that for females (around -10% and -4%, respectively). Evidence of remaining gaps in low-qualified prime-age male employment rates can be found in most countries (see Graph 10), ranging from -18% in Greece, -17% in Cyprus and -13% in Spain to around 10% in Ireland, Italy, France, Belgium, Netherlands, Austria or Finland. Notable exceptions include Slovakia (+15%), Estonia (+6%), and Germany (broadly unchanged).



The impact of such gaps is non-negligible – prime-age males with lower education levels account for around 8% of euro area total employment. Nevertheless, it is still unclear the extent to which such gaps will prove to be structural in nature. Much depends on the geographical and skill matching efficiency of the labour market. <sup>(19)</sup> Indeed, with the dispersion across euro area countries on a declining trend since at least 2005, the employment rate may tend to stabilise at a lower level compared to the pre-crisis period.

<sup>(18)</sup> Less than lower secondary education (levels 0-2), upper secondary and post-secondary non-tertiary education (3 and 4) and tertiary education (5-8).

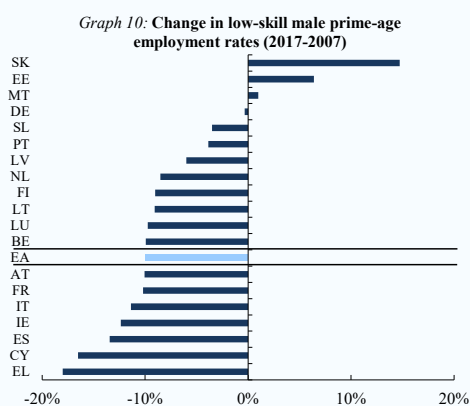
<sup>(19)</sup> Prime-age male labour force participation has been showing a declining trend in other advanced economies. For the US see Valletta, R. and N. Barlow (2018). ‘The prime-age workforce and labor market polarization’. Federal Reserve Bank of San Francisco, *Economic Letter* 21, September.

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Box (continued)

### ...while net employment gains are mostly among senior workers...

The number of employed individuals aged 55-64 was broadly unaffected by the crisis years, and has followed an upward trend, with the employment rate rising from 34.1% in 2000 to 57.1% in 2017. This has been driven by a rising participation rate, as older people extend their working lives in line with reforms introduced in pension systems (e.g. rising pension ages) and improving educational levels. Indeed, it emerges that net employment gains since 2008 can be almost entirely attributed to individuals in this age group.



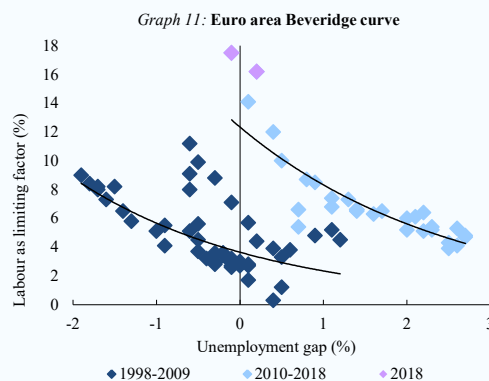
Source: Eurostat, authors' calculations.

### ...with evidence of a lower matching efficiency.

As the unemployment rate has trended lower, labour market shortages have also begun to appear in some countries and industries. This has been particularly evident in survey-based measures where participants detail the factors limiting their production output. In general, assessments of labour shortages decline during recessions and recover during expansions, showing high cyclicity and correlation across sectors.

Estimates of the Beveridge curve, however, hint at an outward shift and higher steepness of the curve over 2013-2017 and a deterioration of matching mechanisms (see Graph 11). Such evidence is testament to the possibility of shortages arising at higher levels of unemployment and under intense recruitment needs.<sup>(20)</sup> Such pressures may prevent the reabsorption of those displaced from some permanently downsized sectors and create incentives for increasing working hours of those already employed.

<sup>(20)</sup> Drumetz, F. and R. Lecat (2018). 'Is the French labour market under pressure?'. Banque de France, *Eco Notepad*. June.



Source: Eurostat, DG ECFIN. Unemployment gap based on NAWRU estimates interpolated to a quarterly frequency.

All in all, the outward shift of the euro area's Beveridge curve during the sovereign debt crisis can be plausibly explained by the magnitude of job destruction in some countries combined with reduced job-finding rates and longer spells of unemployment. At the same time, the sizeable downsizing of the construction and real estate sectors likely contributed to lower skill and geographical matching efficiency.<sup>(21)</sup> Indeed, the skills of workers employed in these sectors may not be easily adaptable to the labour demand emerging in other growing sectors – increasing the need for retraining and activation policies, a medium-term challenge which creates short-term frictions.

Overall, it is arguable that, despite possible measurement uncertainty, most evidence shows a diminishing and relatively limited degree of slack at the aggregate level. Despite the expected closure of the unemployment gap, there remain some important 'pockets' of untapped capacity (be it at country, gender, age or skill level) as exemplified by still-high youth unemployment. The lower level of working hours compared to the pre-crisis period does not necessarily reflect slack, and is not expected to be reversed, as it has to be seen as part of a long-term downward trend. The observed outward shift of the Beveridge curve since 2008 is consistent with evidence of labour shortages (as reported in surveys) arising at comparatively higher levels of unemployment due to lower matching efficiency (e.g. skills mismatch). Such shortages are also compatible with the prevalence of lower employment rates than before the crisis among those with lower skills, which together with lower matching efficiency, amplifies frictions in job-to-job transitions between different sectors.

<sup>(21)</sup> See Draghi, M. (2014), *ibid.*