

II. Slack vs. tightness in euro area labour markets: growing mismatch after COVID-19?

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Abstract: This section aims to shed some light on post COVID-19 labour market developments across the euro area, notably on the simultaneous presence of signs of labour market slack and labour market tightness in late 2021. Indicators of labour market slack and mismatch are reviewed and discussed. The Beveridge curve relationship is estimated econometrically across euro area countries to assess if upward shifts took place after the COVID-19 outbreak, indicating a possible reduction in the efficiency of matching between jobs and job-seekers. The results indicate a modest upward shift in the Beveridge curves of the euro area in 2020, partly reversed in 2021. Despite the fact that skill mismatch increased somewhat in the wake of the COVID-19 pandemic, this appears to have had a very minor impact on the efficiency of labour market matching. Overall, the available results suggest that the simultaneous presence of labour market slack and tightness (shortages) was a temporary phenomenon. Labour shortages appear to be driven mainly by the labour market recovery and not by hampered labour market reallocation ⁽²⁷⁾.

II.1. Introduction

As labour markets in the euro area started to recover after being hit by the COVID-19 outbreak, they conveyed mixed signals. While unemployment remained above pre-pandemic levels over much of 2021, labour shortages started to emerge in widening segments of the economy. This section surveys these labour market developments and asks the question whether the coincidence of signals of 'slack' (an excess potential supply of labour as compared to that demanded at prevailing wage conditions) and 'tightness' (the relative abundance of vacancies as compared to the number of job-seekers) are likely to be due to temporary or structural factors (e.g. increasing skills mismatches). A correct reading of these signals is key to modulating the withdrawal of support measures in such a way as to prevent extensive layoffs in sectors hit by temporary shocks, while managing the risk of wage pressures contributing to persistent inflation. ⁽²⁸⁾

The interpretation of labour market data over the pandemic period is complicated by the interplay of containment measures, notably lockdowns and other health-related measures, and of support

measures, notably short-time work schemes (STWs), which helped containing labour shedding during lockdowns. STWs blurred the interpretation of most labour market variables (employment, unemployment, wages) and reduced their cross-country comparability. ⁽²⁹⁾ Containment measures affect not only the incentives for employers to keep workers, but also the incentives of workers to search for jobs or accept job offers. A further difficulty in data interpretation is that COVID-19 may have accelerated pre-existing trends linked, among other things, to a growing relative demand for teleworkable occupations, ⁽³⁰⁾ so that it may not be easy to untangle effects linked only to the pandemic from longer-term trends.

To address these questions, this section surveys labour market developments, including employment, unemployment, and activity rates, in the euro area over the pandemic period in the next subsection. Subsection II.3 focuses on indicators of labour market tightness and shortages, while Subsection II.4 assesses recent developments in the relationship between vacancies and unemployment (the Beveridge curve relationship). Subsection II.5 offers concluding remarks.

⁽²⁷⁾ The authors would like to thank Géraldine Mahieu and an anonymous referee for useful comments and to Maria Chiara Morandini who contributed to an earlier version of this analysis.

⁽²⁸⁾ For a discussion of these schemes, see: IMF (2022), 'Europe's Job Retention Schemes Contained Unemployment, But Challenges Remain' International Monetary Fund, European Department, as well as Ando, S. R. Balakrishnan, B. Gruss, J.-J. Hallaert, L.-B. Fah Jirasavetakul, K. Kirabaeva, N. Klein, A. Lariau, L. Qian Liu, D. Malacrino, H. Qu, A. Solovyeva (2022): 'European Labor Markets and the COVID-19 Pandemic: Fallout and the Path Ahead', IMF Departmental Paper No 2022/004.

⁽²⁹⁾ See, e.g., Koester, G. N. Benatti and A. Vlad (2020). 'Assessing wage dynamics during the COVID-19 pandemic: can data on negotiated wages help?' *ECB Bulletin* 8/2020; and Koester, G. and E. Hahn (2020), 'Developments in compensation per hour and per employee since the start of the Covid-19 pandemic', Box 3 in Anderton et al.: "The impact of the COVID-19 pandemic on the euro area labour market", *ECB Economic Bulletin*, Issue 8/2020.

⁽³⁰⁾ European Commission (2021), 'Labour market and wage developments in Europe: Annual Review 2021', Directorate-General for Employment, Social Affairs, and Inclusion.

II.2. Labour market developments in the euro area in the aftermath of the pandemic

Economic growth in the euro area regained traction in the second half of 2021, helped by progressively increasing vaccination rates and easing policy restrictions. After a contraction by 6.4% in the euro area in 2020, GDP rebounded at a rate of 5.4% in 2021.

While working hours contracted to a similar extent as value added over the pandemic, the drop in employment, though significant, was muted by comparison, largely as a result of the extensive policy support provided. By the end of 2021, value added and employment reached their pre-pandemic levels in the euro area, while hours worked lagged somewhat behind. Since hours worked per person have been on a long-term negative trend before the pandemic, it is possible that some of the decrease in hours reflects a permanent shift towards a higher incidence of part-time work or shorter working weeks.

Graph II.1: Output and employment dynamics in the euro area (Q4-2019 = 100)



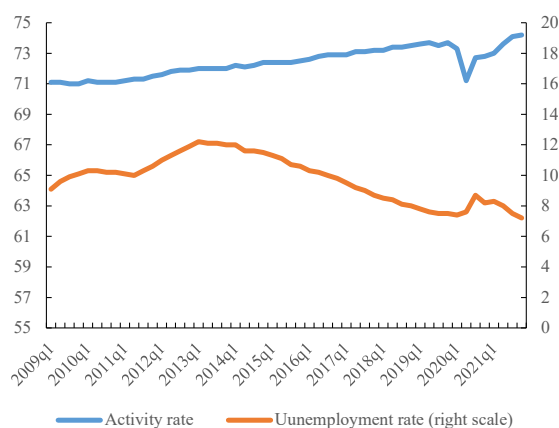
(1) Value added is calculated based on gross value added in chain linked volumes (index 2015=100). Employment, both in hours worked and in persons, is based on domestic concepts. Data are seasonally and calendar adjusted. **Source:** Eurostat, quarterly national accounts data.

Even at the peak of the pandemic in Q2-2020, the increase in unemployment remained significantly below what would have been expected based on the historical relationship between GDP and unemployment (Okun's law).⁽³¹⁾ Contributing

⁽³¹⁾ See European Commission (2020), 'Labour market and wage developments in Europe: Annual Review 2020', Directorate-General for Employment, Social Affairs, and Inclusion.

reasons were not just the short-time work schemes, but also considerable (temporary) outflows to inactivity, as job search was complicated by health concerns, policy restrictions, and care responsibilities. Unemployment in the euro area peaked at 8.7% in Q3-2020. After a slight uptick at the beginning of 2021, it has fallen below pre-pandemic levels by the end of 2021 (at 7.2% in Q4-2021 as compared to 7.4% two years earlier, see Graph II.2).⁽³²⁾ While some people became unemployed, others became (at least temporarily) inactive: the activity rate fell by 2.4 percentage points to reach a low of 71.4% in Q2-2020, before recovering strongly. By Q4-2021, the activity rate in the euro area had surpassed pre-pandemic levels (at 74.4% in Q4-2021).

Graph II.2: Unemployment and activity rates in the euro area



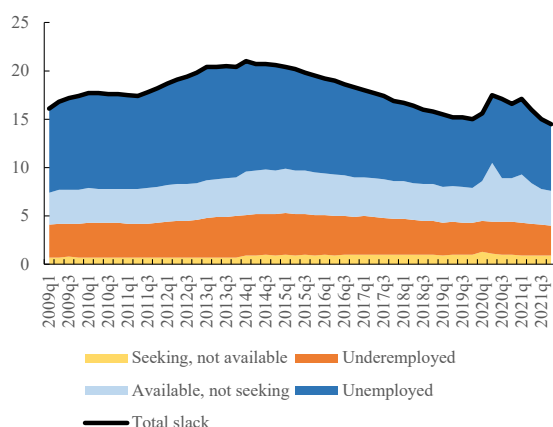
(1) The activity rate is shown for the age group 15-64, while the unemployment rate refers to age group 15-74. Both are seasonally but not calendar adjusted quarterly data. **Source:** Eurostat, Labour Force Survey.

Compared with the unemployment rate, the most widely used slack indicator, the indicator of labour market slack developed by Eurostat allows us to look at a wider notion of labour market underutilisation (or 'unmet need for employment'). The concept of labour market slack includes, in addition to unemployed people, part-time workers who want to work more hours ('underemployed'), people who are available to work but are currently not looking for work, and people who are looking for work but are not immediately available.

⁽³²⁾ Unemployment continued to inch down in monthly data, reaching 7% in December 2021 and 6.8% by April 2022 (seasonally adjusted data).

In Q1-2021, the euro area labour market slack peaked at around 17% of the extended labour force, compared with 21% at its previous peak after the financial crisis in Q1-2014 (Graph II.3).⁽³³⁾ Slack increased both on account of the number of unemployed and of those available to work but not seeking a job. After being very stable through the previous business cycle, the share of those available to work but not seeking increased from 3.4% of the extended labour force in Q4-2019 to 5.8% in Q2-2020. Containment measures and health concerns are likely to have played a role in this. By the end of 2021, this ratio has also returned to its pre-pandemic level in the euro area, after a brief uptick in the first quarter of 2021.

Graph II.3: Labour market slack and its components in the euro area



(1) Data are seasonally adjusted, refer to age group 15-74, and are expressed as % of the extended labour force.

Source: Eurostat, Labour Force Survey.

These labour market developments played out in a demographic context in which working-age population was declining in the euro area, by roughly one percent over two years (Graph II.4). This is also an element that sets apart post-pandemic labour market developments from previous business cycles, as working-age population increased between 2000 and 2008 and stagnated between 2008 and 2015, while a slow downward trend set in after that. This also means that despite increased activity rates, the labour force is slightly below its pre-pandemic level.⁽³⁴⁾

⁽³³⁾ The extended labour force includes, in addition to those economically active those who are available to work but not seeking as well as those seeking to work but not available.

⁽³⁴⁾ Reduced mobility and migration flows may have contributed to these demographic trends during the pandemic period.

Graph II.4: Working-age population (age 20-64), labour force and employment in the euro area (2019q4=100)

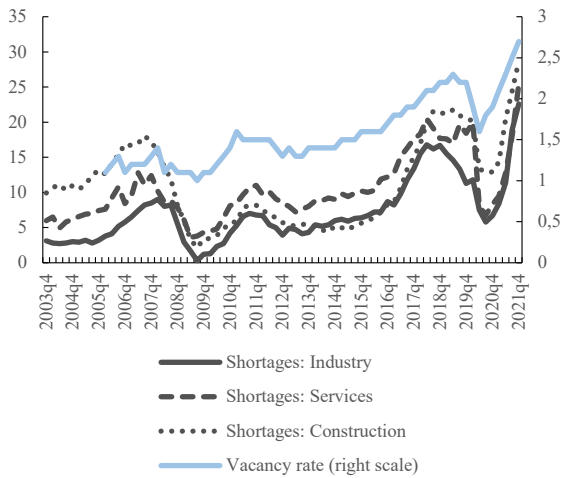


Source: Eurostat, Labour Force Survey.

II.3. Growing tightness amid signs of remaining slack

Both vacancies and reported labour shortages reached historical highs by the end of 2021 (Graph II.5). The pandemic brought a sharp fall in job vacancies in the euro area, followed by a recovery. By the end of 2021, the euro area vacancy rate (with 2,7% of all posts vacant) surpassed its pre-pandemic level, which was itself a historical high (2,3% in Q2-2019). Reported labour shortages show a very similar pattern: a sudden drop in Q2-2020, followed by a dynamic recovery, which led to historical highs by the end of 2021 (with about 25% of employers reporting that labour is a factor limiting production). The patterns are not uniform across sectors. In 2020, labour shortages fell most in services and less so in industry and construction. In contrast, 2021 revealed shortage increases in services at a higher rate than in industry. While the recovery drove up vacancies and shortages, other factors (such as demographic developments) may also have contributed to a longer-term upward tendency in shortage indicators.

Graph II.5: Labour shortages and vacancy rate, euro area

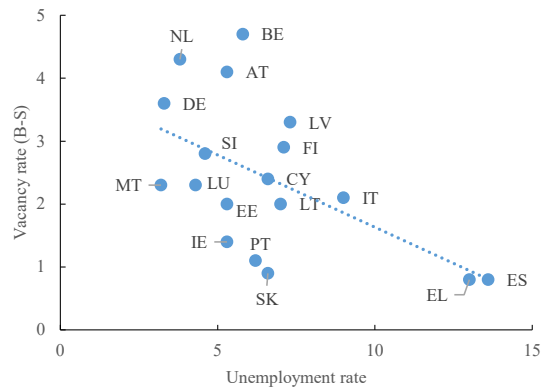


(1) The labour shortage indicators reflect the share of firms reporting labour is a factor limiting their production. The vacancy rate is defined as the ratio of vacant posts to all posts (occupied and vacant), covering industry, construction and services (sectors B to S).
Source: EU Business Survey and Eurostat.

By the end of 2021, there was significant heterogeneity in the labour market situation across the euro area, with some countries showing signs of slack, others of tightness. In particular, a negative relationship could be observed between the unemployment rate and vacancies (Graph II.6).

- Some countries show comparatively low unemployment rates and high vacancy rates hinting at comparatively tight labour markets (e.g., in Austria, Belgium, Germany, the Netherlands).
- In other countries, the situation is the opposite: comparatively high unemployment rates and low vacancy rates, suggesting labour market slack (e.g., in Greece and Spain and, to a lesser extent, Italy).
- In other countries, the situation is intermediate. A group of Member States displays comparatively low levels of both unemployment and vacancy rates (Ireland, Portugal, Slovakia) while another group displays relatively high levels of both (e.g., Finland, Latvia).

Graph II.6: Vacancies and unemployment across countries in the euro area, Q4-2021



(1) Seasonally adjusted data. The vacancy rate covers industry, construction and services (sectors B-S). Data on vacancies is missing for France.

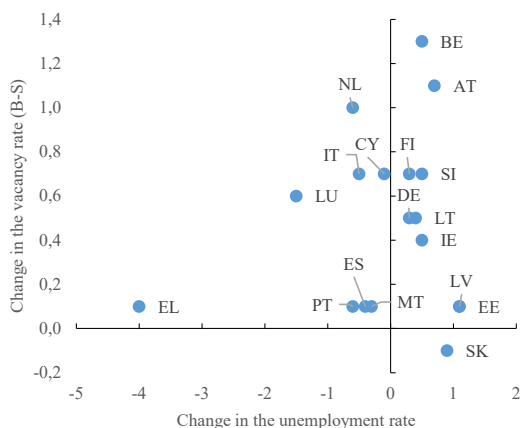
Source: Eurostat.

Regarding cross-country patterns of changes in unemployment and job vacancies across the euro area countries after the COVID-19 outbreak, some labour markets have become tighter, while others have observed a higher vacancy rate despite unemployment not yet having returned to pre-pandemic levels.

- By the end of 2021, labour markets appear to be tighter than pre-pandemic in eight countries where unemployment fell and vacancies rose (Cyprus, Greece, Italy, Luxembourg, Malta, the Netherlands, Portugal, and Spain in the upper left quadrant of Graph II.7). Some countries exhibit this pattern with a relatively small increase in vacancies (Greece, Malta, Portugal, Spain) or a small decrease in unemployment (Cyprus).
- In contrast, the labour market in Slovakia exhibited, at the end of 2021, somewhat higher unemployment and somewhat lower vacancies than pre-pandemic (lower right quadrant of Graph II.7).
- In turn, both unemployment and vacancy rates increased in nine countries (Austria, Belgium, Estonia, Finland, Germany, Ireland, Latvia, Lithuania, Slovenia in the upper left quadrant of Graph II.7). The rise in unemployment is relatively small in Germany, Finland and Lithuania but also in most other countries it is below one percentage point. In turn, in Estonia and Latvia, the increase in vacancies is relatively small.

- This means that, while unemployment, employment and activity rates in the euro area returned to pre-pandemic levels, some countries are characterised by remaining labour market slack and a concurrent increase in labour market tightness.

Graph II.7: **Vacancies and unemployment across the euro area, change over Q4-2019-Q4-2021, percentage points**



(1) Seasonally adjusted data. The vacancy rate covers industry, construction and services (sectors B-S). Data on vacancies is missing for France.

Source: Eurostat.

significantly at the COVID-19 outbreak in Q2-2020, while unemployment increased in the third quarter. Since then, shortages have increased continuously, while unemployment has followed the developments of the pandemic: improving in Q4-2020, suffering a setback in Q1-2021 and improving since then. This pattern is in line with the experience of past business cycles: while vacancies are a leading indicator of the business cycle, unemployment moves with some lag. Negative shocks to labour demand are therefore followed by typical counter-clockwise movements in the vacancy-unemployment space. However, while after the 2008 financial crisis the variation in vacancies was relatively contained compared with unemployment, the opposite could be said in the aftermath of COVID-19. The change in unemployment was moderate and short-lived, while labour shortages showed large fluctuations.

While there was a clear upward shift in the euro area Beveridge curve after the 2008 financial crisis, a similar shift is not observed in the aftermath of COVID-19 from the simple inspection of the Beveridge curve in Graph II.8, i.e., the graphical inspection of the Beveridge curve is not sufficient to conclude whether a deterioration of labour market matching took place.

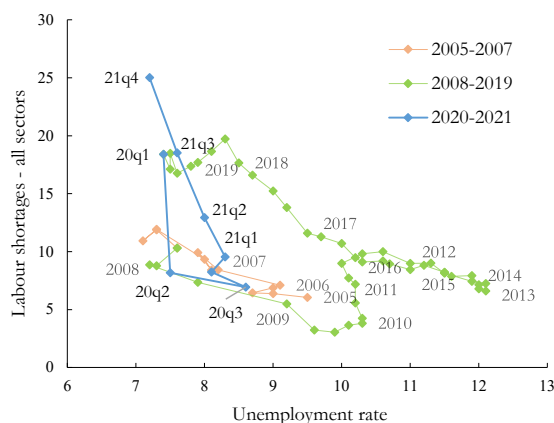
II.4. Has labour market matching deteriorated?

II.4.1. Evolution of unemployment and vacancies for the euro-area aggregate

The relationship between job vacancies and unemployment is often used to assess the efficiency of matching between labour supply and demand. Over the business cycle, vacancies and unemployment exhibit a negative relationship, known as 'Beveridge curve': in good times there are many job vacancies while unemployment is low, while the opposite happens during bad times. That said, vacancies and unemployment might also move in the same direction. This could occur for temporary reasons, as it may take time for vacancies to be filled in a recovery. However, if the shift is persistent, it could indicate a changed ability of the labour market to match job-seekers with posted jobs, i.e., it may signal changes in matching efficiency.

Graph II.8 shows the Beveridge curve for the euro area aggregate using labour market shortages as a proxy for vacancies. Shortages dropped

Graph II.8: **The Beveridge curve for the euro area 2005-2021**



(1) The indicator of labour shortages is defined as the share of firms reporting that labour is a factor limiting production. It is a weighted average (based on value-added weights) of sectoral indicators on manufacturing, services and construction.

Source: EU Business Survey and Eurostat.

II.4.2. Estimating the Beveridge curve on a panel of euro area countries

To be able to identify possible shifts in Beveridge curves based on evidence from a larger sample, the relationship was estimated across a panel of euro area countries using quarterly data. To obtain longer time series, vacancies are proxied by labour shortages (the Beveridge curve is qualitatively similar based on both indicators). The analysis of the behaviour of time trends and regression residuals from such estimation may be exploited to gauge Beveridge curve shifts. This approach is similar to that applied by Consolo and Dias da Silva (2019, p. 76), who estimate a Beveridge curve relationship for the euro area aggregate and use the residual as a proxy for matching efficiency. ⁽³⁵⁾

Previous studies using panel methods have estimated the Beveridge curve across regions in specific countries. ⁽³⁶⁾ In contrast to this strand of literature, this analysis explicitly takes account of residual autocorrelation, and estimates regressions parameters using the Prais-Winsten feasible GLS estimator (FGLS), besides OLS, to address the induced bias. Other recent approaches dealt with the econometric issue of autocorrelation by including the lagged dependent variable in the estimation or by using co-integration techniques. ⁽³⁷⁾

Table II.1 summarises the regression results. Columns (1) to (3) report results from OLS regressions, while columns (4) to (6) report results from FGLS regressions. With the latter, the estimation procedure allows for country-specific first-order autocorrelation in the disturbances and standard errors take into account the heteroskedasticity of the data.

⁽³⁵⁾ See: Consolo, A. and A. Dias da Silva (2019), 'The euro area labour market through the lens of the Beveridge curve'. *ECB Economic Bulletin* 4/2019, 66-86.

⁽³⁶⁾ Börsch-Supan, A.H. (1991), 'Panel data analysis of the Beveridge Curve: Is there a macroeconomic relation between the rate of unemployment and the vacancy rate?' *Economica* Vol. 58, 279-297; Wall, H.J. and G. Zoega (2002), 'The British Beveridge curve: A tale of ten regions', *Oxford Bulletin of Economics and Statistics*, Vol. 64, 257-276; and Valletta, R.G. (2005), 'Why Has the U.S. Beveridge Curve Shifted Back? New Evidence Using Regional Data,' Federal Reserve Bank of San Francisco Working Paper 2005-25.

⁽³⁷⁾ Bonthuis, B., V. Jarvis, and J. Vanhala (2013), 'Shifts in euro area Beveridge curves and their determinants'. *IZA Journal of Labor Policy* 5:20; Ebeke C. and G. Everaert (2014), 'Unemployment and Structural Unemployment in the Baltics'. IMF Working Paper 14/153; Bova, E., J. Tovar Jalles, C. Kolerus (2018), 'Shifting the Beveridge curve: What affects labour market matching?' *International Labour Review*, Vol. 157, No. 2.

The dependent variable is the unemployment rate. All specifications include among the explanatory variables the labour shortages as a proxy for vacancies, the square of labour shortages to control for the non-linearity of the relationship, and country fixed effects. Specifications (3) and (6) also include time effects to pick up joint movements of Beveridge curves across the EU.

In specifications (2) and (5) two additional explanatory variables are added which may shift Beveridge curves. The first potential shifter is an indicator of macroeconomic skills mismatch, defined as relative dispersion of employment rates across the three main skill groups (low, medium and high qualifications). ⁽³⁸⁾ The greater the discrepancies between the employment rates of various skills groups the higher the indicator. The hypothesis is that labour market matching could be less smooth (implying higher unemployment at a given level of vacancies or shortages) at times when there is a greater imbalance between the skills demanded and supplied. The second potential shifter controls for the effects of possible sectoral mismatch: it is calculated as the dispersion (coefficient of variation) of the three sectoral components of the labour shortage indicator (i.e., industry, services and construction). The greater the difference across labour shortages reported in the three sectors, the higher is the indicator. The hypothesis is that labour market matching could be less smooth at times when labour shortages are concentrated in some sectors only.

Both mismatch indicators are shown in Graph II.9. It is apparent that while the skills mismatch indicator increased somewhat over the pandemic, this increase was small as compared to historical developments, in particular the sharp rise after 2008. The sectoral dispersion of labour shortages increased significantly over the pandemic, to a degree comparable to the recession of 2009, before falling again to historically average levels over 2021. ⁽³⁹⁾

⁽³⁸⁾ For the definition of the indicator, see Kiss and Vandeplas (2015); the relationship of this indicator with matching efficiency has been analysed by European Commission (2013) and Arpaia et al. (2014).

⁽³⁹⁾ A similar conclusion has been reached by IMF analysts using a different methodology. "Sectoral job mismatch also played a role, but it rose less, and less durably, than it did after the 2008–09 global financial crisis". See: Duval, R., Y. Ji, L. Li, M. Oikonomou, C. Pizzinelli, I. Shibata, A. Sozzi, and M. M. Tavares, (2022) 'Labor market tightness in advanced economies', IMF Staff Discussion Notes 2022/1.

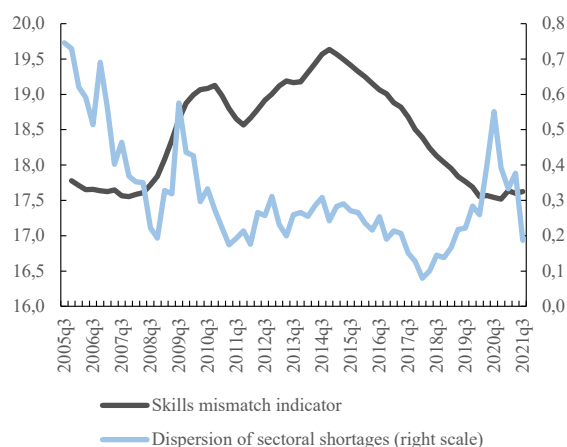
Table II.1: Estimation of the Beveridge curve, euro area countries

	(1)	(2)	(3)	(4)	(5)	(6)
	OLS country effects	OLS, additional variables	OLS, time effects added	FGLS country effects	FGLS, additional variables	FGLS, time effects added
Dependent variable:	Unemployment rate					
Labour shortages, all sectors	-0.423*** (0.108)	-0.337*** (0.108)	-0.254** (0.119)	-0.122*** (0.016)	-0.121*** (0.015)	-0.053*** (0.014)
Labour shortages squared	0.007*** (0.002)	0.005** (0.002)	0.005** (0.002)	0.001*** (0.000)	0.002*** (0.000)	0.001*** (0.000)
Skills mismatch indicator		0.453** (0.189)	0.567** (0.231)		0.077*** (0.024)	0.042* (0.021)
Sectoral dispersion of labour shortages		-0.028 (0.034)	-0.046 (0.049)		-0.004 (0.010)	-0.002 (0.011)
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Period effects	No	No	Yes	No	No	Yes
Observations	1,221	1,215	1,215	1,221	1,215	1,215
R-squared	0.687	0.729	0.795	.	.	.
Number of countries	19	19	19	19	19	19

(1) Robust standard errors in parentheses. Asterisks mark estimated coefficients that are statistically significant at the 10% (*), 5% (**) and 1% (***) level. (2) Labour shortages: the % of firms reporting that labour is a factor limiting production (industry, services and construction). The sectoral dispersion of shortages is the coefficient of variation of the three sectoral components. Finally, the skills mismatch indicator is the relative dispersion of employment rates by skills levels.

Source: Authors' calculations.

Graph II.9: Skills mismatch indicator and dispersion of sectoral shortages, euro area



(1) The skills mismatch indicator is defined as the relative dispersion of employment rates by qualification level. The dispersion of sectoral shortages is defined as the coefficient of variation of labour shortages in, respectively: industry, construction, and services.

Source: EU Business Survey and Eurostat.

The regression analysis confirms the expected negative and convex relationship between unemployment and vacancies. This finding is significant and robust with respect to alternative specifications and alternative estimation methods. The magnitude of the coefficients however seem to

depend on the specification, as the Beveridge curve appears to become less steeply negative once time effects and mismatch indicators are included. Moreover, the estimations by means of feasible GLS indicate that OLS estimates are affected by bias, as the slope of the Beveridge curve drops considerably. This factor, which was neglected in previous literature, need to be taken into account. In our specific application, the bias could also affect the estimation of time trends and therefore the assessment of whether the Beveridge curve has shifted over time.

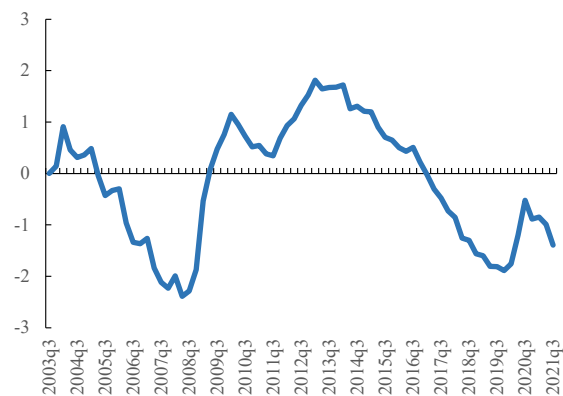
Turning to the other explanatory variables, Table II.1 suggests that skills mismatch is associated with higher unemployment at a given level of labour shortages or vacancies and therefore, potentially, with less efficient labour market matching.⁽⁴⁰⁾ By contrast, the dispersion of labour shortages across sectors does not appear to have an effect. This result is robust to the methods used and the specifications chosen.

⁽⁴⁰⁾ An alternative explanation is that changes in skills mismatches may be temporary effects of cyclical developments, and may not always reflect on matching efficiency.

The time effects estimated in these regressions can be interpreted as unemployment developments not explained by labour shortages or the other explanatory variables. They are related to shifts of the Beveridge curve, as opposed to movements along the curve. Time effects can thus be interpreted as joint movements in the position of Beveridge curves across euro area Member States.

Graph II.10 shows the estimated time effects from specification (6) in Table II.1. Between the 2008 financial crisis and the COVID outbreak, the estimated time effects broadly follow the joint movements in unemployment rates across the euro area, with an upward swing in the aftermath of the financial crisis, and a continuous improvement between 2013 and 2019. Time effects in the aftermath of the COVID outbreak show a relatively moderate increase, followed by a downward trajectory in 2021. By Q3- 2021, the time effects are close to historical lows seen in 2008, suggesting that Beveridge curves in the euro area do not suggest a high degree of matching inefficiency by historical standards.

Graph II.10: Joint movements of euro area Beveridge curves: estimated time effects



(1) Based on a GLS specification (6) reported in Table II.1.

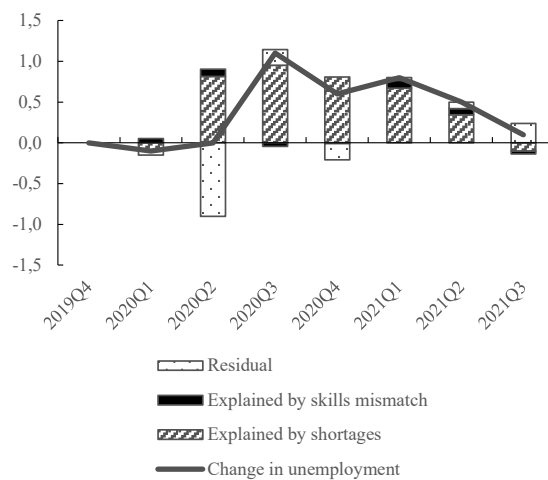
Source: Authors' calculations.

The evolution of the time effects may reflect shifts in matching efficiency, on top of those captured by the mismatch indicators, although shifts in Beveridge curves may occur for other reasons. In any case, the variation in matching efficiency associated with the mismatch indicators is quite

limited, linked to their moderate variation and lack of significance in the case of sectoral mismatch. ⁽⁴⁾

This is supported by evidence from estimating the contribution of the various explanatory variables to unemployment developments, based on the panel estimation. Graph II.11 shows cumulative changes in euro area unemployment compared with the pre-pandemic situation in Q4-2019 distinguishing the fraction of these changes associated with different drivers. The most relevant driver is labour shortages, while the contribution of skills mismatch is very limited. Despite some worsening of skill mismatch after the COVID-19 outbreak, its magnitude is insufficient to explain much of the variation in unemployment, while the immediate fall in vacancies after the pandemic appears to be a much more relevant driver of unemployment. Finally, the negative residual in Q2-2020 is consistent with the notion that job retention schemes significantly dampened the increase in unemployment as compared to what would have been expected based on the fall in vacancies.

Graph II.11: Factors explaining unemployment developments based on the estimations: euro area, 2020Q1-2021Q3



(1) Calculations based on GLS specification similar to column (5) reported in Table II.1 (sectoral mismatch excluded).

Source: Authors' calculations.

⁽⁴⁾ Estimates of the time effects from a specification of the Beveridge curve without mismatch indicators follow a qualitatively similar path over the post-COVID-19 period.

II.5. Conclusion

Euro area labour markets were heavily hit by the COVID-19 pandemic. As soon as the recovery started, labour shortages quickly emerged, while indicators of labour market slack fell more gradually, resulting in signals of labour market tightness among remaining slack. By the end of 2021, employment, unemployment, and activity rates have returned to pre-pandemic levels in the euro area while job vacancies and labour market shortages stand at historical highs. However, in some Member States, shortages and signs of slack were still co-existing.

The analysis presented in this section suggests that the simultaneous presence of tightness and slack was not the result of a major deterioration in the matching efficiency of euro area labour markets. The econometric analysis indicates only a modest upward shift of Beveridge curves in 2020, partly reversed in 2021. This means that, historically, the position of Beveridge curves appears to be relatively low. Despite the fact that skill mismatch has somewhat increased in the wake of the pandemic, this appears to have had a very minor impact on labour market matching. The Beveridge curve estimation indicates that this variable explains little of the cumulated unemployment changes in the aftermath of COVID-19. Moreover, while the economic impacts of the pandemic had a marked sectoral character, these proved mostly transitory, as witnessed by the return of the dispersion of sectoral labour shortages to pre-pandemic levels.

Overall, the findings suggest that the simultaneous presence of labour market slack and shortages was temporary in the euro area. ⁽⁴²⁾ A number of considerations can explain their temporary coexistence in 2021. The removal of containment measures led to a very sudden increase in labour demand in a context where the labour force was less reactive than usual. In particular, health risk concerns are likely to have held back some people from taking up jobs or even searching, while restrictions and containment measures may have hampered labour mobility, not only within countries but also across borders. Vacancy rates reacted rapidly both at the start of the lockdown and with the labour market recovery, while

unemployment moved with lags. While containment and support measures (such as short-time work schemes) may have postponed some workers' decisions to seek a job in another firm or sector, this does not appear to have led to labour market mismatches. Structural reasons may have contributed to increasing labour market shortages, in particular demographic developments as the working-age population is on a declining path in the euro area. These developments were likely exacerbated by a slowdown of mobility and migration flows during the pandemic.

While the bulk of the evidence suggests that the concurrent signs of slack and shortages post-COVID-19 were not mainly associated with worsening structural labour market mismatches, increasing mismatches cannot be ruled out going forward. The COVID-19 pandemic may have compounded structural trends affecting euro area labour markets which would imply challenges for labour market matching. In particular, shifts in the relative skills demand of the euro area economy have likely been accelerated by the COVID-19 shock, including the increased relative demand for teleworkable occupations and non-routine tasks, and for skills used intensively in low-emission activities. ⁽⁴³⁾ The concerns that remaining short-time work schemes could slow down labour reallocation and worsen job matching are probably overstated, since as of January 2022 only an estimated 1.5% of jobs in the euro area are supported by such schemes, down from a peak of 20% in April 2020. ⁽⁴⁴⁾

In a tight labour market characterised by labour shortages, policy can support the activation of groups that face barriers to work. Measures can aim to make work pay (e.g., for low wage and second earners), provide affordable and quality childcare and long-term care, and support the labour market integration of people with a migration background. In light of an ageing labour force, policy can also strengthen incentives for workers to continue working at an older age, and support employers in hiring older workers.

Policy should focus on supporting labour market reallocation in line with the Commission recommendation for effective active support to employment following the COVID-19 crisis

⁽⁴²⁾ Such evidence is in line with recent analyses for advanced economies. See, e.g., Duval, et al., 2022, op. cit..

⁽⁴³⁾ See European Commission, 2021, op. cit.

⁽⁴⁴⁾ See ECB Economic Bulletins 2021/8 and 2020/8, respectively.

(EASE). This is notably the case should evidence of labour market mismatch grow stronger.⁽⁴⁵⁾ Targeted education and training would help the creation of skills in short supply, therefore easing

labour shortages in fast-growing economic activities. Strengthening public employment services would help improve the labour market matching process.

⁽⁴⁵⁾ European Commission, Recommendation on effective active support to employment following the COVID-19 crisis (EASE), C(2021) 1372 final, 4 March 2021.