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The policy drivers of hiring
transitions

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By Orsetta Causa, Michael Abendschein, Nhung Luu and Maria Chiara Cavalleri

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Abstract/Résumé

Getting on the job ladder: the policy drivers of hiring transitions

This paper delivers new evidence for European countries on the role of a wide range of policies for workers' mobility in terms of hiring transitions into jobs, with an emphasis on differences across socio-economic groups. Labour market transitions are relevant in the current context where the ongoing recovery from the COVID-19 crisis is characterised by labour shortages and at the same time still low employment in a number of countries. The analysis focuses on the probability to transition from unemployment and selected forms of inactivity (e.g. fulfilling domestic tasks, studying) to jobs and from one job to another. Results of this work show the strong association between hiring flows and the business cycle with specific patterns during recoveries, recessions and expansions. The analysis further reveals that a broad range of policies influence hiring transitions, such as labour market policies, taxes and social support programmes but also product market regulations and regulations affecting certain professions. Country-specific priorities will vary depending on context, challenges and social preferences. Yet common policy objectives at the current recovery context are likely to improve the job prospects of the non-employed, especially youth, low-skilled and women, to help the recovery, foster reallocation and to address labour shortages.

JEL classification: E24, E32, J2, J31, J62

Keywords: Labour reallocation, labour transitions, worker flows, job mobility, COVID-19, business cycle, differences across socio-economic groups, cross-country data, policy analysis

Transitions sur le marché du travail vers une mobilité ascendante ? Le rôle des politiques publiques

Cet article fournit une analyse empirique du rôle d'un large éventail de politiques publiques sur les transitions individuelles vers l'emploi dans les pays européens, avec une emphase sur les différences entre groupes socio-économiques. Comprendre les transitions sur le marché du travail et leurs déterminants est important dans le contexte actuel de reprise de la crise du COVID-19, qui se caractérise à la fois par des difficultés d'embauche et une situation de l'emploi encore faible dans un certain nombre de pays. L'analyse couvre la probabilité de sortir du chômage et de diverses formes d'inactivité (e.g. tâches domestiques, études) et d'accéder à l'emploi, ainsi que de changer d'emploi. Les résultats de ce travail montrent que ces flux d'entrée dans l'emploi varient fortement en fonction du cycle économique, notamment dans les périodes d'expansion par rapport aux récessions et aux reprises. Un grand nombre de politiques publiques influence la mobilité vers l'emploi et d'un emploi à l'autre : les politiques liées au marché du travail, à la protection sociale, à la fiscalité du travail, mais aussi les politiques réglementaires sur le marché des biens et des professionnels. Certes, les priorités actuelles varient d'un pays à l'autre en fonction du contexte économique et social, mais un objectif commun et essentiel est celui de faciliter la dynamique de recrutement et les perspectives des individus sans emploi, en particulier les jeunes, les peu qualifiés et les femmes, et ce afin de faciliter la reprise, encourager les réallocations, et réduire les difficultés de recrutement.

Classification JEL: E24, E32, J2, J31, J62

Keywords: Réallocation du travail, transitions sur le marché du travail, flux d'entrée dans l'emploi, mobilité professionnelle, COVID-19, cycle économique, différences entre groupes-socioéconomiques, impact des politiques publiques.

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Getting on the job ladder: the policy drivers of hiring transitions

Orsetta Causa, Michael Abendschein, Nhung Luu, Maria Chiara Cavalleri¹

Introduction and motivation

The mobility of workers in and out of employment and between jobs matters for growth and for inclusiveness. In the dynamic process of firm entry, expansion, contraction and exit, jobs are created and destroyed. Some workers are hired to fill new positions and others to replace previous employees who have left existing jobs. Simultaneously, other workers are dismissed, either because of post suppressions or because their employers decide to replace them with different workers. Moreover, some workers quit their jobs because they have found a different job that better matches their skills and needs. This process of labour reallocation is largely driven by market forces and creative destruction, which tend to expand better opportunities and downsize inefficient activities. A large body of evidence suggests that the firm entry and exit process, as well as the reallocation of workers (and resources more broadly) from declining to expanding businesses, contributes significantly to productivity and output growth (e.g.; (Foster, Haltiwanger and Krizan, 2001^[1]), (Bartelsman, Haltiwanger and Scarpetta, 2013^[2]), (OECD, 2009^[3]), (Bassanini and Garnero, 2012^[4]), (Mcgowan and Andrews, 2015^[5]), (Berlingieri, Blanchenay and Criscuolo, 2017^[6]), (Criscuolo et al., 2021^[7]), (OECD, 2021^[8]), (Engbom, 2022^[9])).²

From the perspective of workers, labour mobility and reallocation is a process through which better job opportunities may be created and seized (e.g. (Postel-Vinay and Robin, 2002^[10]); (Contini and Villosio, 2007^[11])). A growing body of evidence documents that job mobility tends to be associated with earning gains, particularly at the beginning of workers' careers, giving rise to "job ladder effects" ((Haltiwanger and Spletzer, 2020^[12]), (Coleman and Zheng, 2020^[13]), (IMF, 2021^[14]), (Hijzen, Zwysen and Lillehagen, 2021^[15])). Research based on linked employer-employee data (OECD, 2021^[16]), (OECD, 2021^[8]) suggests that job mobility can play an important role in reducing wage inequality. The reason is that job-to-job

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² For comprehensive materials and analysis, see the OECD Global forum on productivity and in particular evidence on the micro drivers of productivity based on linked employer-employee data. See <https://www.oecd.org/global-forum-productivity/> and <https://www.oecd.org/global-forum-productivity/multiprod.htm>.

mobility dampens the transmission of between-firm productivity gaps to wage gaps. As a result, at any given level of productivity dispersion, wage premia dispersion and, hence, overall wage inequality tend to be lower in countries with high levels of job mobility. Going further, recent evidence based on cross-country data shows that wages grow more over the life-cycle in countries where job-to-job mobility is more common (Engbom, 2022^[9]), as a more fluid labour market allows workers to faster relocate to jobs where they can better use their skills, incentivizing the accumulation of skills.

Understanding labour market transitions is crucial in the context where the current recovery from the COVID-19 crisis requires workers' reallocation (see (OECD, 2021^[17]) Chapter 1).³ At the same time, recent analysis suggests a decline in job-matching efficiency in a number of OECD countries, as the job-filling rate tended to increase less than what might have been expected based on its relationship with labour market tightness in the period before the COVID-19 crisis (OECD, 2021^[18]).⁴ Going further, some of the effects of the crisis on the structure of employment may persist, with some sectors and occupations permanently shrinking and others growing, for instance due to pre-existing trends that have been amplified by the pandemic, such as digitalisation, increasing demand for professionals in health care and the urgency of the green transition. Indeed, labour shortages have been intensifying in a number of countries (OECD, 2021^[18]), (Pizzinelli and Shibata, 2022^[19]). This can be seen for example in the evolution of job vacancy rates across European countries, especially in some contact-intensive sectors that have reopened such as accommodation and food (Figure 1).⁵ All of this calls for policies to reduce frictions to workers' transitions and improve the matching between jobseekers and new job openings.

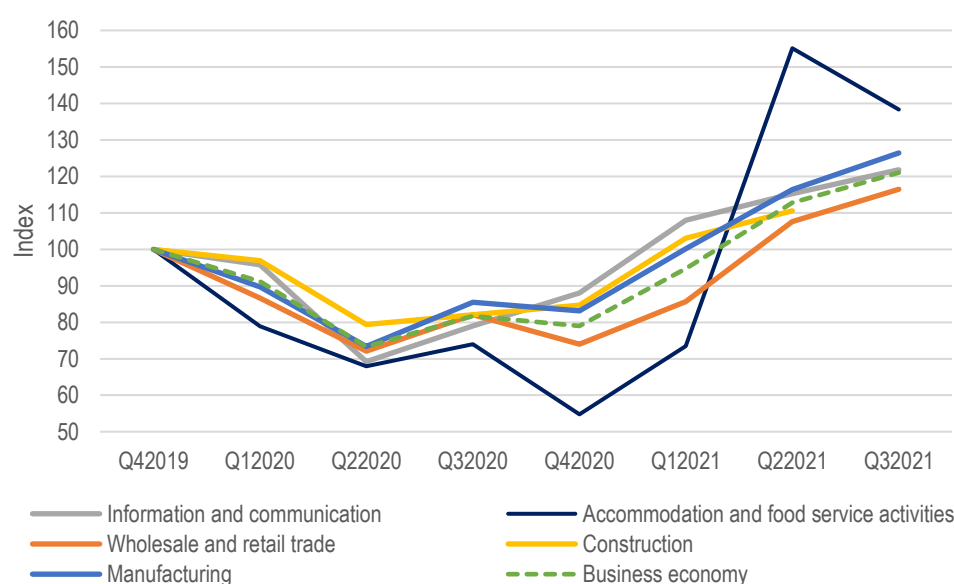
³ (Barrero, Bloom and Davis, 2020^[104]) focus on the experience of the United States and argue that 32 percent to 42 percent of layoff from the COVID-19 pandemic shock are likely to be permanent.

⁴ This may reflect the asymmetric impact of the crisis across sectors with different skill requirements, producing a mismatch between skills of unemployed jobseekers and skills required by employers.

⁵ See (Eurofound, 2021^[99]) for detailed evidence and discussion on European countries. Labour market tightness and shortages are pronounced in the United States, see e.g. (Furman and Powel III, 2021^[96]), (Bunker, 2021^[97]) for a discussion. Aggregate wage pressures remain moderate, but sizeable increases in wages are occurring in some sectors, such as leisure and hospitality in the United States (OECD, 2021^[18]).

Figure 1. Developments in job vacancy rates

Quarterly data, 2019Q4-2021Q3, Index 2019Q4=100, OECD EU average, by industry



Note: Non-seasonally adjusted data. The cross-country average covers the following countries: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, and United Kingdom.

Source: Eurostat.

Against this background, (Causa, Luu and Abendschein, 2021^[20]) delivered new cross-country evidence on workers' transitions and mobility. It showed that labour market transitions vary significantly from one country to another, as summarised in Figure 2. For example, chances of moving from unemployment to job from one quarter to the next are more than twice as high in Denmark and Switzerland than in Italy and Greece; while chances of changing job are around 5 times higher in Sweden than in the Czech Republic.⁶ The scene-setting paper also showed that labour market transitions vary significantly within countries from one socio-economic group to another, underscoring heterogeneity behind the aggregate picture, for instance:

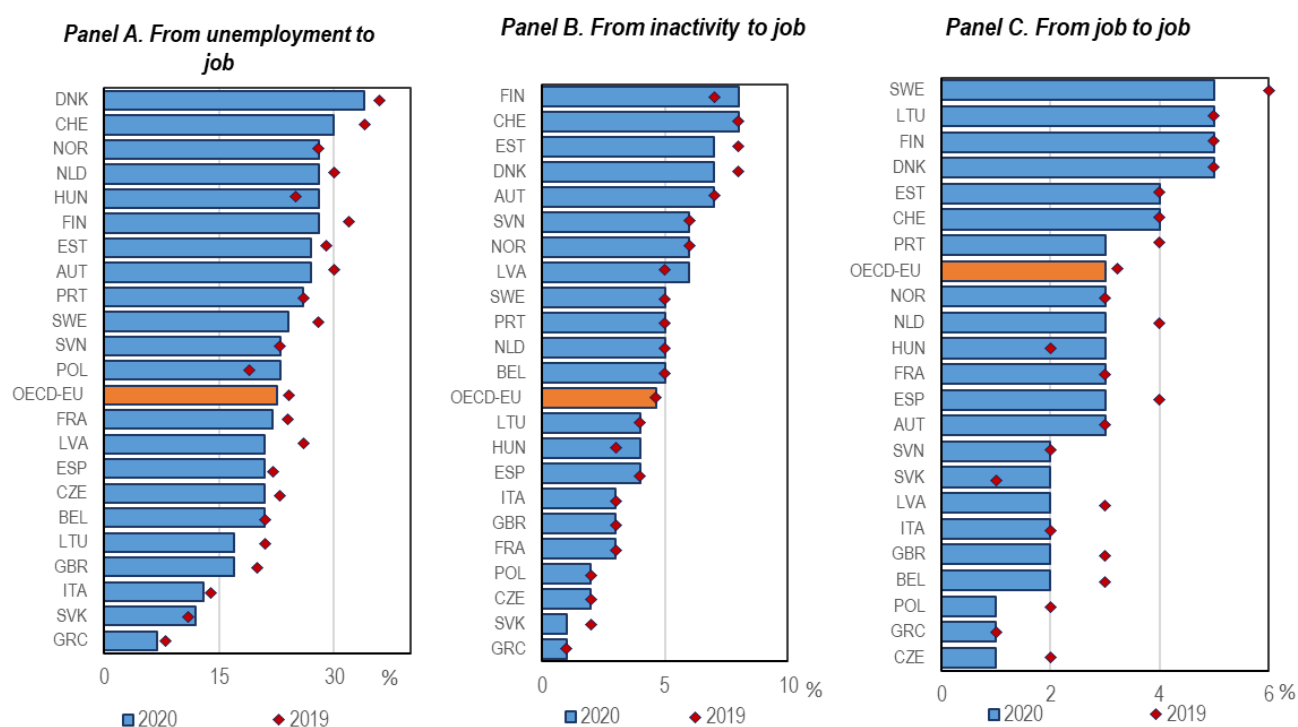
- Women are much more likely than men to move in and out of jobs, which potentially reflects the unequal burden of family-related responsibilities.
- Workers changing job exhibit significantly higher earnings growth than workers staying in the same job, and the benefits of job mobility tend to be stronger for youth, the low-skilled and women⁷.
- Young people are the engine of labour market dynamism: they exhibit much higher levels of hirings from non-employment and job-to-job hirings relative to prime-aged workers, underscoring the importance of job ladders at early stages of workers' careers.

⁶ See also (Berthau et al., 2021^[110]) for recent evidence.

⁷ Such differential effects across socioeconomic groups are particularly salient and well-documented in the case of the United States.

Figure 2. Hiring transition probabilities across European countries: a snapshot

Annual averages of quarterly transitions (%)



Note: Annual averages of quarterly transition probabilities estimated by Eurostat. Transitions from unemployment to job are expressed as share of previously unemployed people, while job-to-job transitions are expressed as share of previously employed persons and transitions from inactivity are expressed as share of previously inactive people.

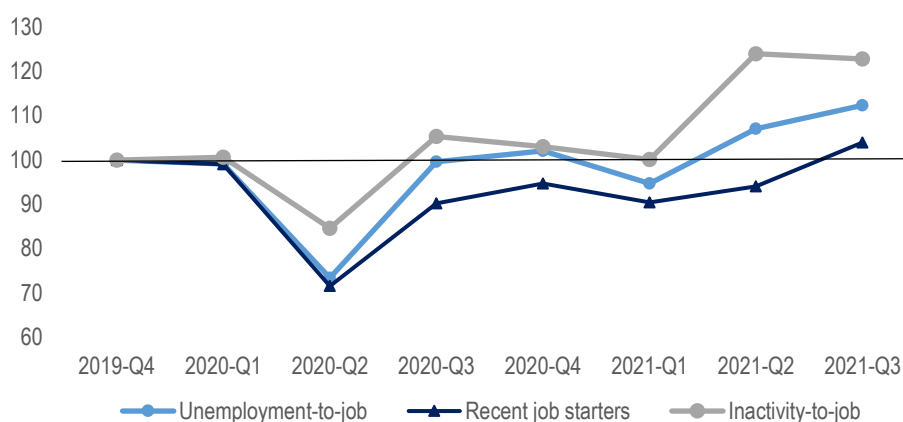
Source: Eurostat. <https://ec.europa.eu/eurostat/web/experimental-statistics/labour-market-transitions>.

One overarching challenge for the recovery is to facilitate hiring dynamics and to minimise long-term unemployment and scarring risks among vulnerable groups who have been hardest hit and face higher risks of scarring from the recession. This is all the more policy-relevant in a context where the ongoing aggregate labour market recovery, illustrated by the rebound of hiring transition probabilities (Figure 3), is not equally distributed across socio-economic groups: in particular, youth have been disproportionately impacted (Figure 4) and face scarring risks.⁸

⁸ (Causa, Luu and Abendschein, 2021_[20]) provide evidence of scarring effects from the 2008 recession.

Figure 3. Developments in selected hiring transition probabilities

Working-age population, 2019Q4-2021Q3, Index 2019Q4=100, OECD EU average

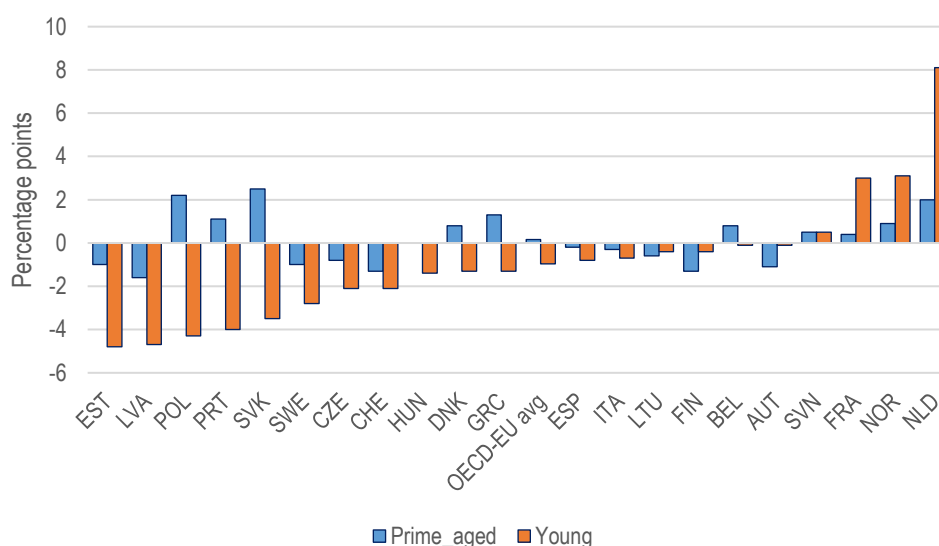


Note: Recent job starters are defined by Eurostat as those persons who have started their employment in the last 3 months before the labour force survey interview. The cross-country average covers the following countries: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Greece, Hungary, Italy, Lithuania, Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, and Switzerland. See Annex for country-specific profiles. Seasonally-adjusted data.

Source: Eurostat. <https://ec.europa.eu/eurostat/web/experimental-statistics/labour-market-transitions> for jobless-to-job transitions and https://ec.europa.eu/eurostat/databrowser/view/lfsi_sta_q/default/table?lang=en for recent job starters.

Figure 4. Developments in employment rates by age group

Percentage point change between 2019Q4 and 2021Q3



Note: Seasonally-adjusted data. The cross-country average covers the following countries: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Greece, Hungary, Italy, Lithuania, Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, and Switzerland.

Source: Eurostat. <https://ec.europa.eu/eurostat/web/lfs/data/database>.

This paper focuses on the role of a wide range of non-policy and policy factors influencing workers' mobility in terms of hiring transitions into jobs,⁹ with an emphasis on differences across socio-economic groups. The objective is to help policymakers support an efficient and inclusive labour market recovery from the COVID-19 crisis while addressing key longstanding structural challenges, such as slowing productivity and the labour market reallocations required by the green transition and digitalisation.

The analysis focuses on the probability to transition from unemployment and from (selected types of) inactivity to jobs and on the probability to transition from one job to another. The paper focuses on European countries based on harmonised cross-country, cross-industry, cross-region and time-series analysis to address the following questions:

- What are the non-policy cyclical and structural drivers of hiring transitions from jobless to job and between jobs and how do they vary across socio-economic groups?

Here, cyclical drivers refer to macro and industry-level economic conditions, e.g. whether the economy is in an expansion, recession, or recovery phase, and industry demand growth. Structural effects refer to industry characteristics at the regional level, e.g. the socio-demographic composition of workers in terms of education, age, gender, along with the prevalence of non-standard (such as temporary) jobs.

- What are the policy drivers of hiring transitions from jobless to job and between jobs and how do they vary across socio-economic groups?
- What policy insights can be drawn at the current juncture, to build a smooth and inclusive recovery from the COVID-19 crisis, helping unemployed getting into quality jobs, enhancing job-to-job reallocations, especially among youth, the low-skilled, and women, who face long-term scarring risks from the crisis and, beyond, to address current labour shortages along with the green and digital transitions?

This analysis covers a broad range of policy areas, including: active labour market policies and unemployment benefits; job and social protection; institutional settings associated with union bargaining; labour taxation; housing-related policies; regulatory barriers to business entry and competition in services -- including occupational entry restrictions; family-related policies.

A framework of analysis is schematised in Figure 5, with the specific focus and issues addressed in this paper indicated by the shaded area.

Key results on the non-policy, cyclical and structural drivers of hiring transitions are:

- Unemployment-to-job and job-to-job transitions are pro-cyclical with respect to macro-level conditions, e.g. more frequent in expansions than recessions. These transitions are also more frequent in industries where demand is growing. Pro-cyclical effects are particularly strong for young people. Hiring transitions, especially out of unemployment, are also responsive to local labour market conditions, e.g. more frequent when regional unemployment is low. Such effects are particularly strong for low-skilled workers.
- Cyclical conditions have different effects on inactivity to-job transitions, depending on the nature of inactivity and on the population most concerned: i) strong effects on transitions from study-to-job, with recession episodes and unemployment spikes making it much harder for young people

⁹ Separations are needed in the process of creative destruction, but clearly more costly for workers, especially for those who are more vulnerable. A comprehensive analysis of labour reallocation including separations to different forms of inactivity and unemployment is out of the scope of this project. This issue can also be addressed with matched employee-employer data, which exist for some countries but do not allow for a cross-country comparative analysis. These data are used in complementary OECD work by (OECD, 2021^[16]). See (Berthau et al., 2021^[110]) for additional recent evidence in this area.

to enter the labour market; and ii) more muted effects on transitions from “fulfilling domestic tasks” to job, with positive effects of recoveries and negative effects from regional unemployment on women’s mobility from inactivity to job.

- Hiring transitions tend to be lower in industries featuring a high share of self-employed workers and higher in industries featuring a higher share of temporary workers. Inactivity-to-job transitions tend to be higher in industries featuring a high share of part-time workers.

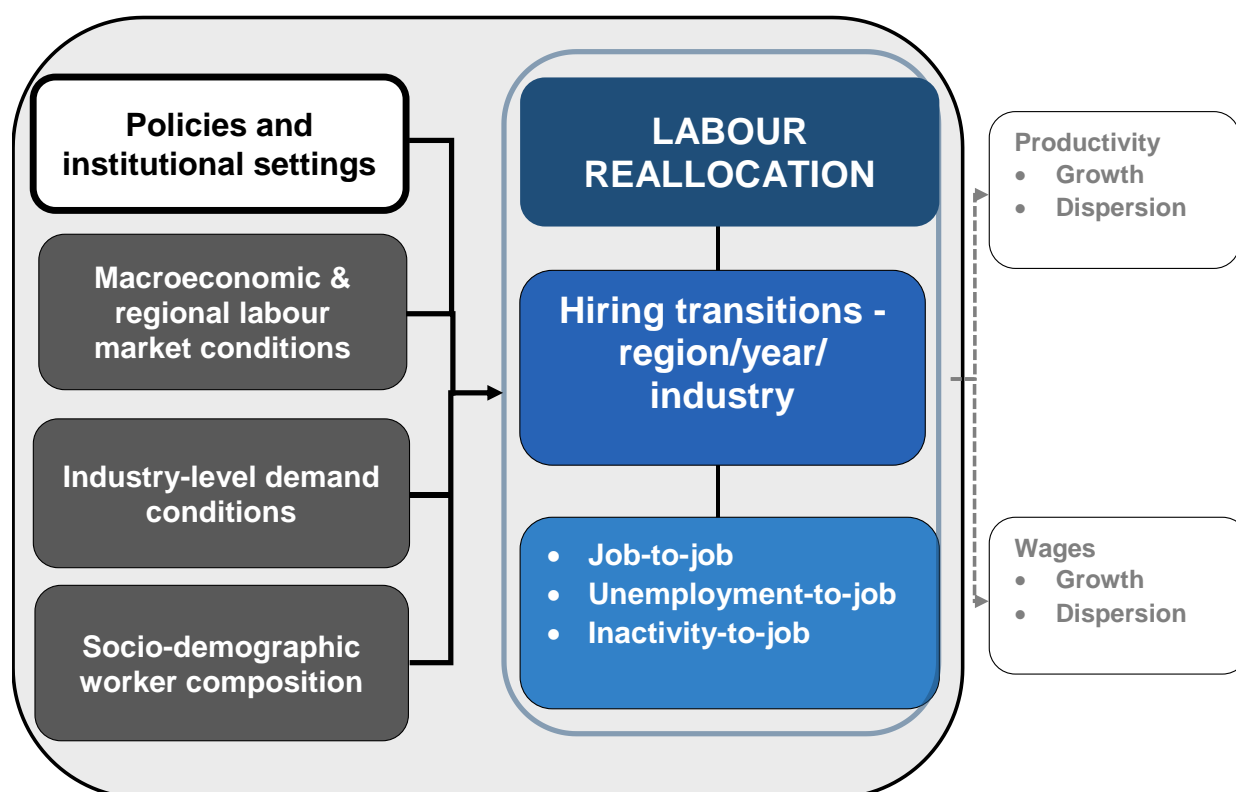
Conditional on cyclical and structural drivers, this paper shows that: i) a large number of policies influence hiring transitions, and ii) policy influence often differs across socio-economic groups. Country-specific priorities will vary depending on context, challenges and social preferences. Of particular relevance for policies are options to improve the job prospects of the non-employed, especially youth, low-skilled and women; facilitate job-to-job transitions to foster reallocation; and address labour shortages. Selected policy results include:

- Active labour market policies, for instance spending on job-search support, apprenticeships and employment incentives, are positively associated with hiring transitions from unemployment to job. Such effects are strongest among low-educated groups. Active labour market policies are also found to help youth transitions from study to job.
- Both active labour market policies and income support for jobseekers exhibit a counter-cyclical stabilisation effect, e.g. being more effective at boosting job-finding probabilities during recessions relative to expansions, including for young people moving from study to job.
- Higher levels of labour tax wedges, especially in the lower-half of the wage distribution, tend to depress job-to-job mobility, particular for the low-skilled and young people; as well as jobless-to-job mobility, including inactivity-to-job mobility for women.
- Family-related policies are found to influence hiring transitions. The larger the difference between the length of maternity and paternity leave, the lower unemployment-to-job and job-to-job transitions among both men and women. Longer paid paternity leave is associated with more job-to-job mobility among women. More generous childcare benefits for low-income families and lone parents are associated with higher unemployment-to-job transitions, especially among the low-skilled.
- More restrictive product market regulations and barriers to entrepreneurship tend to reduce the responsiveness of job-to-job mobility to industry-level demand conditions, particularly among the low-educated and young people. A similar finding applies to stringent occupational entry regulations in personal and professional services. Such policies are also found to dampen the transition of young people from unemployment and from study to job.
- Stringent job protection on regular contracts and large differences in job protection between regular and temporary contracts are associated with lower job-to-job transitions, especially for low-educated workers and for young people.
- Countries where the population is more internally mobile display higher levels of unemployment-to-job, inactivity to-job and job-to-job transitions.
- Countries that receive more inflows of international migrants exhibit significantly more job-to-job mobility, especially among young people and low-educated workers; as well as more inactivity-to-job mobility both for women and for young people.

The rest of this paper is structured as follows. Section 2 provides an overview of the analytical and empirical framework. Section 3 presents baseline results on the non-policy cyclical and structural drivers of hiring transition probabilities for the working-age population and across socio-economic groups. Section 4 delivers selected policy results (while the Annex reports all such results). This is organised by hiring

transition probability, with an emphasis on policy effects for key socio-economic groups. The last section wraps up the evidence gathered in the paper with broad policy considerations that, though to a different degree across countries, may help policymakers navigating the COVID-19 recovery phase.

Figure 5. Framework of analysis



Analytical and empirical framework

Data definitions and sources

Hiring transitions draw on micro-based information about individual labour market status during the survey period and, retrospectively, one year before, covering transitions from unemployment to job, from inactivity to job, and from one job to another. Following the framework developed by (Ward-Warmedinger and Macchiarelli, 2014^[21]) and (Monastiriotes, Macchiarelli and Lampropoulou, 2019^[22]) transition probabilities are expressed relative to initial labour market status: the transition probability from status j to status i is derived as the number of individuals who transited from j to i between the period $t-1$ and t , relative to the number of individuals in status j in the period $t-1$. For example, the transition probability from unemployment to job is the share of unemployed individuals that move into jobs during a given year. In formula:

$$p^{ij} = \Pr(S_t = i | S_{t-1} = j) = \frac{\sum N(S_t=i, S_{t-1}=j)}{\sum N(S_{t-1}=j)} \quad (1)$$

For each hiring transition, more granular metrics can be considered:

- Job-to-job transitions can distinguish between workers who remain in the same industry as their previous job and workers who move to a different industry. The distinction between transitions within and across industries is relevant to analyse patterns of workers' reallocation – e.g. workers

moving from declining to expanding industries. This allows to provide policy-relevant insights on the capacity of countries to adjust to shocks that are asymmetric across industries, which is relevant in the context of the COVID-19 recovery and beyond, and to the capacity of countries to encourage workers' reallocation in the context of the transition to a low-carbon economy. One limitation is, however, the relatively high level of aggregation of the available industry classification (see below), which is likely to under-estimate job mobility between narrowly defined industries.

- Inactivity-to-job transitions can distinguish between different forms of inactivity¹⁰. In this paper, the focus is on inactivity due to carrying out domestic tasks (for women) and inactivity due to education or training (for young people). The remaining categories are inactivity due to retirement and disability, the analysis of which is beyond the scope of this paper given the focus on working-age population.
- Unemployment-to-job and job-to-job transitions can also distinguish between permanent (or open-ended) and temporary (or fixed-term) jobs.

Harmonised hiring transition probabilities are constructed based on individual level data from the European Labour Force Survey (EU-LFS), which ensures full cross-country comparability, reducing potential biases in the econometric identification. The data covers 19 European OECD countries for which microdata is consistently available, from 2000 to 2019.¹¹ Hiring transitions are computed for the working-age population and for selected policy-relevant socio-economic groups, defined by age, gender and educational attainment. EU-LFS data also contains information about workers' region of residence, allowing to measure hiring transitions at the regional level and thus to control for local conditions.¹² As mentioned in the introduction and reported in the literature review in the Annex, many studies have documented patterns and trends in labour market fluidity and job mobility for the United States, including most recently the descriptive paper setting the scene for the current one (Causa, Luu and Abendschein, 2021^[20]) and (Engbom, 2022^[9]).

Hiring transition probabilities are defined at the country- region- year- industry level. For transitions from unemployment or inactivity to job, the industry refers to the one where the individual is being hired (destination). For job-to-job transitions, the industry refers to the one from where the employed individual is moving out (origin), in line with the probabilistic approach. The denominator for each transition – i.e., the population base in the initial working status – is consistently defined at the country-region -year level for the unemployment or inactivity-to-job transitions, while for job-to-job transitions, it is defined at the country-region -year – (origin) industry level.

Baseline analysis: structural and cyclical drivers of hiring transitions

The identification strategy builds on previous empirical literature on labour market transitions (e.g. (Bassanini and Garnero, 2013^[23]), (Escudero, 2018^[24])).¹³ The baseline model, estimated for the various transition probabilities and socio-economic groups, is defined as follows:

¹⁰ EU-LFS data does not allow to identify discouraged workers among the inactive.

¹¹ Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, the United Kingdom.

¹² Regions are classified based on the NUTS-2 classification, which in general corresponds to large sub-national territorial units. Industries are classified according to the 1-digit NACE classification. The shift to NACE revision 2 classification in 2008 is addressed using official correspondence tables. The annex provides more details on data sources, coverage, and relevant technical aspects.

¹³ This is a partial equilibrium model. Second-order general equilibrium effects cannot be captured in the empirical setting.

$$P_{c,k,m,t}^{ij} = \beta_0 + \beta_1 Z_{c,t}^1 + \beta_2 Z_{c,k,t-1}^2 + \beta_3 Z_{c,m,t-1}^3 + \beta_4 X_{c,k,m,t} + \eta_c + \eta_k + \eta_m + \eta_t + \Pi_{t \geq 2008} \eta_t \eta_m + \epsilon_{c,k,m,t} \quad (2)$$

Where $P_{c,k,m,t}^{ij}$ is the transition probability from labour market status j to i in country c , region k , industry m , and year t , computed according to equation (1).

$Z_{c,t}^1$, $Z_{c,k,t-1}^2$ and $Z_{c,m,t-1}^3$ represent cyclical drivers of labour transitions, capturing different aspects of the business cycle¹⁴. $Z_{c,t}^1$ is a country-level macro indicator composed by three binary variables: *Recovery_{ct}*, *Recession_{ct}*, and *Expansion_{ct}* (the omitted category). The identification of recessions, recoveries and expansions follows common practice in the literature (Cerra and Saxena, 2008^[25]) (Bech, Gambacorta and Kharroubi, 2012^[26]) -- this approach has for instance been recently used by the IMF to study labour market transitions (IMF, 2021^[14]).¹⁵ ¹⁶ Previous studies have widely documented the cyclicity of labour market transitions (Blanchard et al., 1990^[27]), (Haltiwanger, Hyatt and McEntarfer, 2015^[28]), (Hijzen, Zwysen and Lillehagen, 2021^[15]), in particular that both jobless-to-job (both unemployment-to-job and inactivity-to-job transitions) and job-to-job transitions tend to increase during expansions, when labour markets are tight. $Z_{c,k,t-1}^2$ captures region-level labour market conditions, measured by the (lagged) regional unemployment gap, defined as the difference between the previous and the average unemployment rate over the period 2000-2019 for each region. $Z_{c,m,t}^3$ captures industry-specific demand conditions, proxied by the industry-level (lagged) output growth gap, as a negative (positive) demand shock in one industry is expected to trigger workers' reallocation out of (in) that industry. The output growth gap is defined as the difference between the previous and the average output growth rates for each industry over the period 2000-2019.

$X_{c,k,m,t}$ is a vector of standard worker characteristics capturing non-policy structural drivers of labour market transitions. This covers: the share of workers by gender, age, educational attainment, the share of self-employed, part-time, and temporary workers, all expressed in percentage of employment in a given country, region, industry and year.¹⁷

The model is estimated with country, region, industry, and year fixed effects, denoted by η_c , η_k , η_m and η_t , respectively¹⁸. An interaction term between year and industry fixed effects is included to account for a change in the industry classification implemented in 2008. Robust standard errors are clustered at the country-region level.

Policy analysis

The baseline model is augmented with policy variables, introduced one at a time,¹⁹ to shed light on the policy drivers of hiring transition probabilities. The augmented regression model writes as following:

$$P_{c,k,m,t}^{ij} = \beta_0 + \beta_1 X_{c,k,m,t} + \beta_2 Z_{c,t}^1 + \beta_3 Z_{c,k,t-1}^2 + \beta_4 Z_{c,m,t-1}^3 + \gamma \text{POL}_{c,t}$$

¹⁴ The lagged structure of cyclical drivers is meant to capture macroeconomic conditions before transitions take place and to reduce endogeneity problems.

¹⁵ This identification proceeds as following: a recession refers to the window of years with negative GDP growth. A recovery is defined as either the year directly after recessions or the years after a recession while real GDP remains below its previous historical maximum. An expansion refers to the annual period with positive real GDP growth. See Annex for details.

¹⁶ The Annex reports robustness analysis to alternative measures of cyclical conditions, e.g. the country-level output gap.

¹⁷ Regressions for each socio-economic group do not include group-specific controls, e.g. estimates by age do not include the share of workers by age.

¹⁸ The policy identification strategy does not allow incorporating country-year fixed effects.

¹⁹ The Annex reports robustness analysis to multivariate policy scenarios.

$$+ \eta_c + \eta_k + \eta_m + \eta_t + \Pi_{t \geq 2008} \eta_t \eta_m + \epsilon_{c,k,m,t} \quad (3)$$

where $POL_{c,t}$ denotes the policy indicator for country c and year t so that coefficient γ provides an estimate of possible policy effects.

The policy identification strategy is based on cross-country time-series variation with the exception of policy barriers to business entry and entrepreneurship and occupational entry regulations, being only measured on the basis of cross-sectional indicators. In this case, the identification strategy is based on interaction effects with country-industry level time-series demand condition indicators included in the baseline model, allowing to identify the extent to which such policies influence the responsiveness of hiring transitions to industry-level demand conditions and shocks; hence shedding some light on allocative efficiency policy-driven effects. Finally, the analysis is extended to investigate the stabiliser role of unemployment benefits and active labour market policies by introducing an interaction term between the macro-level cyclical variable and the policy in unemployment-to-job transition regressions.

This paper covers the following policy areas:

- **Policy support for jobseekers.** This includes: i) in-kind support, that is, various categories of spending on active labour market programmes, such as job-search support through public employment services (PES), training and apprenticeship, as well as employment incentives; ii) cash support in form of unemployment benefits. The combination of in-kind and cash support aims at supporting jobless-to-job transitions. These policies also aim at playing the role of stabilizers during downturns, by providing income and job-search support to unemployed, but also by providing hiring incentives to firms (e.g. wage subsidies). Recent cross-country work tends to find positive effects of active labour market programmes on jobless-to-job transitions (IMF (2021^[14]), (Escudero, 2018^[24])) in line with previous work on policies to minimise the costs of worker displacement (Andrews and Saia, 2017^[29]) and to encourage transitions into employment (Carcillo and Grubb, 2006^[30]). Countries have indeed recently expanded spending on active labour market policies to support the labour market recovery (see Box 2 and (OECD, 2021^[31])). Existing empirical evidence on the effect of unemployment benefits on unemployment-to-job transitions is mixed and contingent on differences across empirical approaches, data and coverage (Boeri and Macis, 2010^[32]).
- **Job protection legislation.** This includes OECD indicators measuring regulations on the dismissal of workers on regular contracts and the hiring of workers on temporary contracts.^{20 21} Previous papers (Haltiwanger, Scarpetta and Schweiger, 2008^[33]), (Bassanini and Garnero, 2013^[23]) documented that high levels of job protection on regular contracts tend to reduce labour market transitions by i) reducing workers' incentives for job mobility; and ii) reducing firms' incentives to hire from the pool of unemployed. In addition, excessive protection of regular workers can contribute to labour market dualism, in turn hampering job ladder effects, e.g. career prospects of the low-skilled and young people, who tend to be hired on low-quality temporary jobs.
- **Policy barriers to business entry and dynamism, occupational entry regulations.** This includes: i) regulatory barriers to firm entry and competition, measured by OECD indicators on

²⁰ Throughout the paper, the labels "permanent", "open-ended" and "regular" contracts will be used interchangeably, to avoid repetitions. The same applies to the labels "temporary" and "fixed-term" contracts.

²¹ See [OECD Indicators of Employment Protection](#). Employment protection refers to only one dimension of the complex set of factors that influence worker security and firm adaptability. For information on other labour market policies and institutions, see the database. The data do not allow to identify the nature of the previous (origin) contract for job-to-job transitions.

product market regulations,²² and ii) occupational entry regulations in personal and professional services, i.e. qualification requirements, administrative burdens, mobility restrictions, also measured by OECD indicators.²³ Evidence suggests that excessive regulations and barriers to entry tend to dampen job mobility, inter-regional mobility and its responsiveness to labour market shocks (for evidence on the United States, see (Hermansen, 2019^[34]); for cross-country evidence, see (Causa, Abendschein and Cavalleri, 2021^[35])). This has adverse effects on labour market and business dynamism, hence on productivity growth, as well as potentially adverse job ladder effects, by creating obstacles for upward mobility (Calvino, Criscuolo and Verlhac, 2020^[36]).

- **Wage bargaining settings, labour tax wedges and incidence of low-pay.** This includes: i) the structure and coverage of bargaining systems, ii) average and marginal labour tax wedges for various wage levels and iii) the incidence of low-pay, which measures the share of workers earning less than two-thirds of median earnings. Bargaining systems can influence workers' transitions: decentralised wage bargaining may make it easier for firms to hire workers at wages that correspond to their marginal productivity and may also encourage workers' incentives for job mobility by increasing the dispersion of wages ((Cournède, Denk and Garda, 2016^[37]), (Boeri, Cahuc and Zylberberg, 2015^[38])). Consistent with this, recent cross-country evidence finds a negative association between the degree of collective bargaining centralisation and the responsiveness of inter-regional mobility to labour market shocks (Causa, Abendschein and Cavalleri, 2021^[35]). Labour taxation can influence hiring transitions by affecting labour demand by firms as well as labour supply by workers, especially at the bottom of the distribution, where behavioural responses tend to be higher ((Meghir and Phillips, 2010^[39]), (Bassanini et al., 2010^[40])).
- **Housing, geographical mobility and international migration.** This includes: i) rental market regulations; ii) social spending on housing; iii) inter-regional migration; and iv) international migration. Housing policies and conditions have a strong effect on residential and geographical mobility ((Causa, Abendschein and Cavalleri, 2021^[35]), (Causa and Pichelmann, 2020^[41]), (Caldera Sánchez and Andrews, 2011^[42])); hence via this channel on mobility for labour-related reasons. Too stringent rental regulations can also affect labour market transitions, for example when changing job or accepting a job offer implies moving out of a rent-controlled house, in line with recent findings by (Causa, Abendschein and Cavalleri, 2021^[35]), and (Causa and Pichelmann, 2020^[41]). Openness to foreign workers likely influences labour market transitions and dynamism, reflecting a number of channels such as the higher mobility and lower age of migrants relative to natives (Borjas, 2001^[43]).
- **Policy support for families.** This includes childcare support and parental leave policies. Earning gains from a new job after childbirth may be offset by excessive net childcare costs, i.e. high prices in childcare centres, but also inadequate or weakly-designed childcare benefits for families in need of support. The design of parental leave policies, not only the length of allowed leave but also, importantly, the extent to which it differs between mothers and fathers, also likely influences labour supply at the family level in line with descriptive evidence in (Causa, Luu and Abendschein, 2021^[20]). The literature shows that the availability of childcare encourages female labour supply (with no similar effect for males) (Eckhoff Andresen and Havnes, 2019^[44]), (Guner, Kaygusuz and Ventura, 2020^[45]). By contrast, evidence on the effect of the length of parental leave is mixed (Olivetti and Petrongolo, 2017^[46]).

²² [Indicators of Product Market Regulation - OECD.](#)

²³ [Occupational entry regulations \(OER\) and their effects on productivity in services - OECD.](#)

Cyclical and structural drivers of hiring transitions: baseline results

Baseline results on the non-policy cyclical and structural drivers of hiring transitions are presented in Table 1 and in Table 2. A selection of relevant findings for unemployment-to-job hiring transitions follows (Table 1A):

- Cyclical drivers at the macroeconomic and regional level:
 - ✓ Unemployment-to-job transitions are pro-cyclical, especially regarding local labour market conditions: i) chances of moving from unemployment to job are significantly lower during recessions relative to expansions, around 9% lower²⁴, but not significantly so during recoveries; and ii) conditional on macroeconomic conditions, higher levels of unemployment and higher incidence of long-term unemployment at the regional level reduce the chances of moving from unemployment to job.
 - ✓ The negative effects of recessions (relative to expansions) tend to be around 40% stronger for unemployment-to-job transitions among men compared with women. Cyclical effects, in particular in terms of regional unemployment, decline with workers' education level. The estimates suggest that unemployment-to-job transitions among the low-skilled are around 8% lower when the regional unemployment rate is at its maximum relative to its average over the estimation period.
 - ✓ Macro conditions are found to significantly dampen unemployment-to-job transitions towards open-ended contracts, particularly during recessions, a finding that does not apply to transitions towards temporary contracts. Regional labour market conditions are found to matter much more for unemployment-to-job transitions towards temporary relative to open-ended contracts, possibly pointing to buffer effects.
- Cyclical drivers at the industry-level, i.e. demand conditions:
 - ✓ Expansionary demand conditions at the industry-level tend to favour unemployment-to-job transitions within that industry, with somewhat higher effects for young people and for men. The estimates suggest that, for the working-age population, unemployment-to-job transitions in a given industry are around 4% higher when industry demand is buoying than when industry demand is stagnant, while this effect amounts to 10% among youth and 7% among men.
- Structural drivers at the region and industry level: non-standard work
 - ✓ Unemployment-to-job transitions are always lower in industries featuring a high share of self-employed workers.
 - ✓ Unemployment-to-job transitions are higher in industries featuring a higher share of temporary workers, with the exception of transitions towards open-ended jobs, where the opposite result applies.

²⁴ The quantifications are computed by comparing model-implied fitted transition rates in different scenarios. For instance, the difference between estimated transitions rates between expansions and recessions is obtained by comparing fitted transition rates based on a sample where macroeconomic business cycle dummies are set equal to the specific state (expansion/recession).

- ✓ Unemployment-to-job transitions among women are higher in industries featuring a higher share of part-time workers,²⁵ but only for open-ended hirings, as the opposite result applies for temporary hirings (for both men and women).

A selection of relevant findings for inactivity-to-job transitions follows (Table 1B):

- Cyclical drivers at the macroeconomic and regional level:
 - ✓ Transitions from study to job are pro-cyclical: i) chances of moving from study to job are significantly lower during recessions relative to expansions, by around 15%, but not significantly so during recoveries; and ii) conditional on macroeconomic conditions, spikes in unemployment at the regional level reduce the chances of moving from study to job by around 10%.
 - ✓ Cyclical conditions have a limited effect on transitions from fulfilling domestic tasks-to-job, and such effects are significant only for women: i) chances of moving from inactivity to job are significantly higher during recoveries relative to expansions; and ii) conditional on macroeconomic conditions, higher levels of unemployment at the regional level reduce the chances of moving from inactivity to job. The estimates suggest that inactivity-to-job transitions (among women) are around 6% lower when the regional unemployment rate is at its maximum relative to its average over the estimation period.
- Cyclical drivers at the industry-level, i.e. demand conditions:
 - ✓ Expansionary demand conditions at the industry-level tend to favour (both forms of) inactivity-to-job transitions within that industry.
- Structural drivers at the region- and industry-level: non-standard work
 - ✓ Inactivity-to-job transitions (as before, both inactivity to study and to fulfil domestic tasks) are lower in industries featuring a high share of self-employed workers and higher in industries featuring a high share of part-time workers.
 - ✓ Study-to-job transitions are higher in industries featuring a high share of temporary workers.

²⁵ The incidence of part-time is highest in contact-intensive services, such as arts, entertainment and recreation and accommodation and food.

Table 1. Structural and cyclical drivers of jobless to-job hiring transitions: baseline results

Dependent variable: Hiring transition probabilities for the working-age population and by socio-economic group

Panel A. Unemployment to job

	Unemployment-to-job							
	Working age pop.	15-24	25-54	Low-educ	Med-educ	High-educ	Men	Women
Cyclical variables at the macro & region level								
Recession	-0.21*** (0.04)	-0.25*** (0.06)	-0.24*** (0.05)	-0.14*** (0.04)	-0.18*** (0.04)	-0.16*** (0.06)	-0.22*** (0.04)	-0.13*** (0.04)
Recovery	-0.022 (0.04)	-0.012 (0.07)	-0.035 (0.05)	0.015 (0.05)	0.024 (0.05)	-0.047 (0.08)	0.0100 (0.04)	0.011 (0.04)
Regional-level unemployment gap in pp; lagged	-0.027*** (0.00)	-0.035*** (0.01)	-0.029*** (0.00)	-0.030*** (0.00)	-0.024*** (0.01)	-0.024*** (0.01)	-0.034*** (0.01)	-0.024*** (0.00)
Lagged share of long-term unemp. regional level	-0.011*** (0.00)	-0.025*** (0.00)	-0.012*** (0.00)	-0.011*** (0.00)	-0.012*** (0.00)	-0.0084*** (0.00)	-0.0092*** (0.00)	-0.013*** (0.00)
Demand conditions at the industry level								
Industry-specific output growth gap; lagged	0.0092*** (0.00)	0.039*** (0.00)	0.0069*** (0.00)	0.010*** (0.00)	0.0095*** (0.00)	0.0086*** (0.00)	0.015*** (0.00)	0.0070*** (0.00)
Industry characteristics at the regional level: non-standard work								
Share of workers with temporary contracts	0.036*** (0.00)	0.017*** (0.00)	0.050*** (0.00)	0.0040*** (0.00)	0.030*** (0.00)	0.020*** (0.00)	0.034*** (0.00)	0.018*** (0.00)
Share of part-time workers	0.017*** (0.00)	0.0086*** (0.00)	0.024*** (0.00)	-0.0029** (0.00)	0.0073*** (0.00)	-0.0039 (0.00)	0.0017 (0.00)	0.0011 (0.00)
Share of self-employed workers	-0.013*** (0.00)	-0.0048** (0.00)	-0.014*** (0.00)	-0.0063*** (0.00)	-0.0073*** (0.00)	-0.0076*** (0.00)	-0.015*** (0.00)	-0.0055*** (0.00)
Industry characteristics at the regional level: demographic composition of workers								
Share of workers with below-secondary education	0.013*** (0.00)	0.024*** (0.00)	0.011*** (0.00)				0.014*** (0.00)	0.013*** (0.00)
Share of workers with upper-secondary education	0.0017 (0.00)	0.013*** (0.00)	0.00023 (0.00)				0.0037*** (0.00)	0.00046 (0.00)
Age:<25(%)	0.0057 (0.00)			0.0022* (0.00)	-0.0018 (0.00)	0.0041*** (0.00)	0.014*** (0.00)	0.0054** (0.00)
Age:25-34(%)	0.0073*** (0.00)			0.0061** (0.00)	0.011*** (0.00)	0.012*** (0.00)	0.0062*** (0.00)	0.0045*** (0.00)
Age:>55(%)	-0.0026 (0.00)			0.013*** (0.00)	0.0083*** (0.00)	0.010*** (0.00)	-0.0033** (0.00)	-0.0022 (0.00)
Share of female workers	0.0041** (0.00)	0.0036** (0.00)	0.0031* (0.00)	-0.0020** (0.00)	-0.0055*** (0.00)	-0.0049*** (0.00)		
Constant	0.62** (0.26)	-0.28 (0.43)	1.15*** (0.32)	1.49*** (0.27)	0.82*** (0.24)	1.65*** (0.34)	0.74** (0.29)	1.24*** (0.24)
Observations	44514	30039	42352	42741	44104	43075	44608	43165
R-squared	0.44	0.30	0.37	0.25	0.38	0.20	0.42	0.38
Adjusted R-squared	0.44	0.29	0.37	0.24	0.37	0.20	0.42	0.37

Unemployment to job: open-ended

	Unemployment-to-job: open-ended							
	Working age pop.	15-24	25-54	Low-educ	Med-educ	High-educ	Men	Women
Cyclical variables at the macro & region level								
Recession	-0.16*** (0.03)	-0.13*** (0.04)	-0.17*** (0.04)	-0.12*** (0.03)	-0.17*** (0.03)	-0.10** (0.04)	-0.16*** (0.03)	-0.13*** (0.03)
Recovery	-0.042 (0.03)	-0.013 (0.05)	-0.039 (0.04)	0.0088 (0.04)	-0.045 (0.03)	-0.082 (0.07)	-0.043 (0.03)	-0.028 (0.03)
Regional-level unemployment gap in pp; lagged	-0.00013 (0.00)	-0.0036 (0.01)	-0.0019 (0.00)	-0.00088 (0.00)	0.00081 (0.00)	-0.00031 (0.00)	-0.000064 (0.00)	0.00056 (0.00)
Lagged share of long-term unemp. regional level	-0.0060*** (0.00)	-0.014*** (0.00)	-0.0062*** (0.00)	-0.0076*** (0.00)	-0.0051*** (0.00)	-0.0028 (0.00)	-0.0056*** (0.00)	-0.0065*** (0.00)
Demand conditions at the industry level								
Industry-specific output growth gap; lagged	0.0040*** (0.00)	0.018*** (0.00)	0.0039*** (0.00)	0.0036*** (0.00)	0.0043*** (0.00)	0.0069*** (0.00)	0.0056*** (0.00)	0.0048*** (0.00)
Industry characteristics at the regional level: non-standard work								
Share of workers with temporary contracts	-0.018*** (0.00)	-0.017*** (0.00)	-0.016*** (0.00)	-0.0062*** (0.00)	-0.015*** (0.00)	-0.011*** (0.00)	-0.015*** (0.00)	-0.010*** (0.00)
Share of part-time workers	0.013*** (0.00)	0.0092*** (0.00)	0.016*** (0.00)	0.0059*** (0.00)	0.0099*** (0.00)	0.0068*** (0.00)	0.0087*** (0.00)	0.0058*** (0.00)
Share of self-employed workers	-0.017*** (0.00)	-0.017*** (0.00)	-0.017*** (0.00)	-0.0066*** (0.00)	-0.011*** (0.00)	-0.012*** (0.00)	-0.015*** (0.00)	-0.0078*** (0.00)
Industry characteristics at the regional level: demographic composition of workers								
Share of workers with below-secondary education	0.0041*** (0.00)	0.0049*** (0.00)	0.0033*** (0.00)				0.0028*** (0.00)	0.0015* (0.00)
Share of workers with upper-secondary education	-0.00047 (0.00)	0.0022* (0.00)	-0.00091 (0.00)				0.000098 (0.00)	-0.0021*** (0.00)
Age:<25(%)	0.018*** (0.00)			-0.0012 (0.00)	-0.0030*** (0.00)	0.0010 (0.00)	0.016*** (0.00)	0.013*** (0.00)
Age:25-34(%)	0.0040*** (0.00)			0.0061*** (0.00)	0.015*** (0.00)	0.012*** (0.00)	0.0048*** (0.00)	0.0023*** (0.00)
Age:>55(%)	0.00078 (0.00)			0.0050*** (0.00)	0.0033*** (0.00)	0.0055*** (0.00)	-0.00033 (0.00)	0.00081 (0.00)
Share of female workers	0.00074 (0.00)	0.000019 (0.00)	0.00021 (0.00)	0.000067 (0.00)	-0.0017* (0.00)	-0.0028** (0.00)		
Constant	1.24*** (0.14)	1.79*** (0.26)	1.76*** (0.19)	0.96*** (0.16)	1.12*** (0.16)	1.55*** (0.23)	1.33*** (0.16)	1.29*** (0.15)
Observations	44514	30039	42352	42743	44105	43079	44609	43166
R-squared	0.39	0.22	0.28	0.19	0.31	0.13	0.32	0.31
Adjusted R-squared	0.39	0.22	0.28	0.19	0.31	0.13	0.32	0.31

Unemployment to job: temporary

	Unemployment-to-job: temporary							
	Working age pop.	15-24	25-54	Low-educ	Med-educ	High-educ	Men	Women
Cyclical variables at the macro & region level								
Recession	-0.016 (0.02)	-0.092** (0.04)	-0.040* (0.02)	0.018 (0.03)	0.017 (0.03)	-0.011 (0.05)	0.0045 (0.02)	0.012 (0.02)
Recovery	0.023 (0.03)	-0.0022 (0.06)	-0.00029 (0.03)	0.0043 (0.03)	0.031 (0.04)	0.095* (0.06)	0.066* (0.03)	0.033 (0.03)
Regional-level unemployment gap in pp; lagged	-0.028*** (0.00)	-0.033*** (0.01)	-0.026*** (0.00)	-0.029*** (0.00)	-0.028*** (0.00)	-0.024*** (0.01)	-0.034*** (0.00)	-0.026*** (0.00)
Lagged share of long-term unemp. regional level	-0.0041*** (0.00)	-0.0093*** (0.00)	-0.0045*** (0.00)	-0.0028** (0.00)	-0.0036** (0.00)	-0.0048** (0.00)	-0.0023 (0.00)	-0.0058*** (0.00)
Demand conditions at the industry level								
Industry-specific output growth gap; lagged	0.0049*** (0.00)	0.020*** (0.00)	0.0025*** (0.00)	0.0063*** (0.00)	0.0043*** (0.00)	0.0035* (0.00)	0.0084*** (0.00)	0.0022** (0.00)
Industry characteristics at the regional level: non-standard work								
Share of workers with temporary contracts	0.055*** (0.00)	0.035*** (0.00)	0.066*** (0.00)	0.010*** (0.00)	0.046*** (0.00)	0.032*** (0.01)	0.049*** (0.00)	0.028*** (0.00)
Share of part-time workers	0.0034* (0.00)	-0.0011 (0.00)	0.0066*** (0.00)	-0.0091*** (0.00)	-0.0014 (0.00)	-0.010** (0.00)	-0.0073*** (0.00)	-0.0044*** (0.00)
Share of self-employed workers	-0.0025* (0.00)	0.00033 (0.00)	-0.0044*** (0.00)	-0.0037*** (0.00)	-0.0021** (0.00)	-0.0031*** (0.00)	-0.0055*** (0.00)	-0.0023** (0.00)
Industry characteristics at the regional level: demographic composition of workers								
Share of workers with below-secondary education	0.0087*** (0.00)	0.019*** (0.00)	0.0085*** (0.00)				0.011*** (0.00)	0.011*** (0.00)
Share of workers with upper-secondary education	0.0028*** (0.00)	0.010*** (0.00)	0.0023** (0.00)				0.0038*** (0.00)	0.0030*** (0.00)
Age:<25(%)	-0.012*** (0.00)			0.0030*** (0.00)	0.0017* (0.00)	0.0038*** (0.00)	-0.0030 (0.00)	-0.0076*** (0.00)
Age:25-34(%)	0.0022** (0.00)			-0.00042 (0.00)	-0.0063*** (0.00)	-0.0013 (0.00)	0.000063 (0.00)	0.0018*** (0.00)
Age:>55(%)	-0.0032*** (0.00)			0.0070*** (0.00)	0.0027** (0.00)	0.0035*** (0.00)	-0.0027** (0.00)	-0.0027*** (0.00)
Share of female workers	0.0025*** (0.00)	0.0030*** (0.00)	0.0026** (0.00)	-0.0021*** (0.00)	-0.0038*** (0.00)	-0.00080 (0.00)		
Constant	-0.56*** (0.17)	-2.50*** (0.31)	-0.47** (0.19)	0.53*** (0.19)	-0.28 (0.18)	0.27 (0.21)	-0.52*** (0.19)	-0.014 (0.16)
Observations	44514	30039	42352	42742	44107	43079	44608	43165
R-squared	0.37	0.28	0.33	0.20	0.28	0.16	0.33	0.29
Adjusted R-squared	0.37	0.27	0.33	0.20	0.27	0.15	0.33	0.29

Panel B. Inactivity study/training to job, Inactivity fulfilling domestic tasks to job

	Inactivity for study/training-to-job		Inactivity fulfilling domestic tasks-to-job	
	15-24	25-54	Men	Women
Cyclical variables at the macro & region level				
Recession	-0.070*** (0.02)	-0.087* (0.04)	-0.096 (0.10)	0.026 (0.02)
Recovery	-0.0055 (0.02)	-0.084 (0.06)	0.12 (0.12)	0.074*** (0.02)
Regional-level unemployment gap in pp; lagged	-0.017*** (0.00)	-0.017** (0.01)	0.0023 (0.01)	-0.0067*** (0.00)
Demand conditions at the industry level				
Industry-specific output growth gap; lagged	0.0045*** (0.00)	0.013*** (0.00)	0.011*** (0.00)	0.0026*** (0.00)
Industry characteristics at the regional level: non-standard work				
Share of workers with temporary contracts	0.0029*** (0.00)	0.033*** (0.00)	-0.0017 (0.00)	0.0013 (0.00)
Share of part-time workers	0.015*** (0.00)	0.056*** (0.00)	0.0069*** (0.00)	0.0048*** (0.00)
Share of self-employed workers	-0.0017** (0.00)	-0.0010 (0.00)	-0.0039* (0.00)	-0.0023*** (0.00)
Industry characteristics at the regional level: demographic composition of worker				
Share of workers with below-secondary education	-0.00041 (0.00)	0.0030 (0.00)	0.0017 (0.00)	0.0042*** (0.00)
Share of workers with upper-secondary education	-0.0024*** (0.00)	-0.0071*** (0.00)	-0.0051*** (0.00)	0.00017 (0.00)
Age:<25(%)			0.0014 (0.00)	0.0012 (0.00)
Age:25-34(%)			0.0069*** (0.00)	0.0030*** (0.00)
Age:>55(%)			-0.0010 (0.00)	0.00073 (0.00)
Share of female workers	-0.00036 (0.00)	-0.0025 (0.00)		
Constant	0.43*** (0.16)	-0.18 (0.34)	-0.062 (0.28)	-0.63*** (0.14)
Observations	30118	42394	38319	42985
R-squared	0.49	0.21	0.06	0.24
Adjusted R-squared	0.49	0.20	0.06	0.24

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: See text and Annex for the definition of annual transition probabilities and for the identification of expansions, recoveries and recessions. All estimates include fixed effects at the country, region, industry and year level as well as an interaction between industry fixed effects and the year 2008 fixed effect to control for the change in industry classification effective as of 2008. The regional classification is based on NUTS-2 and the industry classification is based on NACE-Rev.2. Standard errors are clustered at the regional level. The sample includes the following 19 European countries: AUT, BEL, CHE, CZE, DEU, DNK, ESP, FIN, FRA, GBR, GRC, HUN, ITA, NOR, POL, PRT, SVK, SVN, SWE.

Source: OECD estimates based on EULFS data. See annex for details on data sources.

A selection of relevant findings for job-to-job transitions follows (Table 2)

- Cyclical drivers at the macroeconomic and regional level:
 - ✓ Job-to-job transitions are highly pro-cyclical, particularly in terms of adverse effects from macroeconomic recessions and from recoveries (relative to expansions). Conditional on macroeconomic conditions, the effect of regional labour market conditions (i.e. regional unemployment rates) is less systematically significant.
 - ✓ Recession episodes weigh disproportionately on young people's job-to-job transitions. The estimates suggest that job-to-job transitions for the whole working-age population

are around 7% lower during recessions than during expansions, and 11% lower for young people. Higher levels of regional unemployment weigh disproportionately on low-educated workers' job-to-job transitions. The estimates suggest that job-to-job transitions for high-educated workers are around 1.5% lower when unemployment is at its peak relative to its average over the estimation period, while it is 7% lower for low-educated workers.

- ✓ Macro conditions are found to impact job-to-job transitions within industries, not (statistically significantly) across industries. Effects are stronger for transitions towards open-ended relative to temporary contracts for all socio-economic groups except young people. By contrast with macro conditions, regional unemployment conditions matter more for job-to-job transitions across than within industries.
- Cyclical drivers at the industry-level, i.e. demand conditions:
 - ✓ Expansionary demand conditions at the industry-level encourage job-to-job mobility within that industry. The estimates suggest that job-to-job transitions in a given industry are around 6% higher when industry demand is buoying (i.e. when industry output growth is equal to its maximum over the estimation period relative to equal to its average over the estimation period). Regarding cross-industry mobility, the comparison between "origin" and "destination" estimates suggests that workers tend to move out of declining-demand industries into growing-demand industries though the destination effect is much weaker than the origin effect.²⁶
 - ✓ Low-skilled workers, relative to high-skilled workers, are found to be less responsive to industry-level demand conditions, while they are more responsive to macro and especially regional unemployment conditions.
- Structural drivers at the region- and industry-level: non-standard work
 - ✓ Job-to-job transitions are always lower in industries featuring a high share of self-employed workers.
 - ✓ Job-to-job transitions are higher in industries featuring a higher share of temporary workers, with the exception of transition towards open-ended jobs, where the opposite result applies.
 - ✓ By contrast, the effect of part-time work on job-to-job transitions is weaker and differentiated across gender, e.g.: i) industries with higher incidence of part-time work feature lower job-to-job transitions among women, not among men; and ii) industries with higher incidence of part-time work feature lower job-to-job transitions towards temporary jobs among men and women, and higher job-to-job transitions towards open-ended jobs among men, not among women.

²⁶ For cross-industry job-to-job mobility, the "origin" industry is the one associated with the job in the previous year, while the "destination" industry is the one associated with the job in the current year.

Table 2. Structural and cyclical drivers of job-to-job hiring transitions: baseline results

Dependent variable: Hiring transition probabilities for the working-age population and by socio-economic group

Panel A. Job-to-job

	Job-to-job							
	Working age pop.	15-24	25-54	Low-educ	Med-educ educ	High- educ	Men	Women
Cyclical variables at the macro & region level								
Recession	-0.57*** (0.11)	-1.90*** (0.39)	-0.54*** (0.13)	-0.57*** (0.17)	-0.49*** (0.11)	-0.26* (0.14)	-0.44*** (0.11)	-0.31** (0.12)
Recovery	-0.38*** (0.12)	-0.38 (0.49)	-0.46*** (0.13)	-0.22 (0.21)	-0.41*** (0.14)	-0.38* (0.20)	-0.31*** (0.12)	-0.18 (0.16)
Regional-level unemployment gap in pp; lagged	-0.039** (0.02)	-0.12*** (0.04)	-0.036* (0.02)	-0.12*** (0.03)	-0.052*** (0.02)	-0.037* (0.02)	-0.028* (0.02)	-0.073*** (0.02)
Demand conditions at the industry level								
Industry-specific output growth gap; lagged	0.015** (0.01)	0.077*** (0.02)	0.014** (0.01)	0.0060 (0.01)	-0.0045 (0.01)	0.023*** (0.01)	0.0089 (0.01)	0.0018 (0.01)
Industry characteristics at the regional level: non-standard work								
Share of workers with temporary contracts	0.16*** (0.01)	0.14*** (0.01)	0.21*** (0.01)	0.051*** (0.01)	0.13*** (0.01)	0.081*** (0.02)	0.14*** (0.01)	0.11*** (0.01)
Share of part-time workers	0.015* (0.01)	-0.010 (0.01)	0.0043 (0.01)	-0.045*** (0.01)	-0.00053 (0.00)	-0.0034 (0.01)	0.0042 (0.01)	-0.016*** (0.00)
Share of self-employed workers	-0.038*** (0.01)	-0.0040 (0.01)	-0.033*** (0.01)	-0.035*** (0.00)	-0.021*** (0.00)	-0.022*** (0.00)	-0.032*** (0.00)	-0.025*** (0.01)
Industry characteristics at the regional level: demographic composition of workers								
Share of workers with below-secondary education	0.011* (0.01)	-0.036*** (0.01)	0.013** (0.01)				0.0096* (0.01)	0.0081 (0.01)
Share of workers with upper-secondary education	-0.012** (0.01)	-0.024*** (0.01)	-0.019*** (0.01)				-0.0095** (0.00)	-0.0081* (0.00)
Age:<25(%)	0.059*** (0.01)			0.0030 (0.00)	-0.0045 (0.00)	0.0060 (0.00)	0.071*** (0.01)	0.064*** (0.01)
Age:25-34(%)	0.028*** (0.01)			0.037*** (0.01)	0.084*** (0.01)	0.12*** (0.01)	0.025*** (0.01)	0.025*** (0.00)
Age:>55(%)	-0.0040 (0.01)			0.041*** (0.01)	0.019*** (0.00)	0.032*** (0.00)	-0.0060 (0.01)	-0.015** (0.01)
Share of female workers	0.0028 (0.01)	0.0054 (0.01)	0.0019 (0.00)	-0.010*** (0.00)	-0.014** (0.01)	-0.016** (0.01)		
Constant	4.77*** (0.72)	18.5*** (1.55)	6.81*** (0.64)	6.07*** (0.75)	4.81*** (0.64)	3.18*** (0.81)	4.70*** (0.58)	4.65*** (0.75)
Observations	44612	30118	42468	42546	44083	43091	44650	43157
R-squared	0.37	0.13	0.35	0.18	0.32	0.20	0.29	0.18
Adjusted R-squared	0.37	0.13	0.35	0.18	0.32	0.19	0.29	0.18

Job-to-job: other sector (by destination)

	Job-to-job: same sector							
	Working age pop.	15-24	25-54	Low-educ	Med-educ	High-educ	Men	Women
Cyclical variables at the macro & region level								
Recession	-0.57*** (0.09)	-1.99*** (0.34)	-0.56*** (0.12)	-0.57*** (0.15)	-0.55*** (0.10)	-0.46*** (0.12)	-0.47*** (0.10)	-0.38*** (0.11)
Recovery	-0.47*** (0.12)	-0.81* (0.46)	-0.52*** (0.12)	-0.40** (0.19)	-0.44*** (0.13)	-0.53*** (0.16)	-0.32*** (0.11)	-0.34** (0.14)
Regional-level unemployment gap in pp; lagged	0.0031 (0.01)	0.058 (0.04)	0.0073 (0.02)	-0.041** (0.02)	0.010 (0.01)	0.023 (0.02)	0.017 (0.01)	-0.0039 (0.01)
Demand conditions at the industry level								
Industry-specific output growth gap; lagged	0.030*** (0.01)	0.099*** (0.02)	0.027*** (0.01)	0.020 (0.01)	0.019*** (0.01)	0.040*** (0.01)	0.024*** (0.01)	0.035*** (0.01)
Industry characteristics at the regional level: non-standard work								
Share of workers with temporary contracts	0.14*** (0.01)	0.099*** (0.01)	0.19*** (0.01)	0.060*** (0.01)	0.13*** (0.01)	0.093*** (0.02)	0.14*** (0.01)	0.10*** (0.01)
Share of part-time workers	-0.0034 (0.01)	-0.032*** (0.01)	-0.0053 (0.01)	-0.053*** (0.01)	-0.0082 (0.00)	-0.025* (0.01)	-0.010 (0.01)	-0.026*** (0.01)
Share of self-employed workers	-0.024*** (0.00)	-0.012 (0.01)	-0.024*** (0.00)	-0.028*** (0.01)	-0.018*** (0.00)	-0.018*** (0.00)	-0.024*** (0.00)	-0.020*** (0.01)
Industry characteristics at the regional level: demographic composition of workers								
Share of workers with below-secondary education	0.016*** (0.00)	-0.015 (0.01)	0.017*** (0.00)				0.011** (0.00)	0.017*** (0.01)
Share of workers with upper-secondary education	-0.013*** (0.00)	-0.0065 (0.01)	-0.016*** (0.00)				-0.012*** (0.00)	-0.0091* (0.00)
Age:<25(%)	0.021* (0.01)			0.0021 (0.00)	-0.0094** (0.00)	-0.00085 (0.00)	0.047*** (0.01)	0.043*** (0.01)
Age:25-34(%)	0.026*** (0.00)			0.039*** (0.01)	0.042*** (0.01)	0.089*** (0.02)	0.033*** (0.01)	0.023*** (0.01)
Age:>55(%)	-0.014** (0.01)			0.042*** (0.01)	0.028*** (0.01)	0.037*** (0.01)	-0.016** (0.01)	-0.021*** (0.00)
Share of female workers	-0.00088 (0.00)	0.0082 (0.01)	-0.0015 (0.00)	-0.010** (0.00)	-0.012** (0.01)	-0.011** (0.00)		
Constant	4.35*** (0.54)	14.0*** (1.43)	4.78*** (0.56)	6.02*** (1.08)	4.13*** (0.56)	4.17*** (0.62)	4.23*** (0.54)	5.18*** (0.77)
Observations	44612	30118	42468	42646	44124	43165	44650	43157
R-squared	0.35	0.11	0.33	0.15	0.26	0.13	0.29	0.18
Adjusted R-squared	0.35	0.11	0.33	0.14	0.26	0.13	0.29	0.18

Job-to-job: other sector (by origin)

	Job-to-job: other sector															
	Working age pop. (by origin)	Working age pop. (by destination)	15-24 (by origin)	25-54 (by origin)	15-24 (by destination)	25-54 (by destination)	Low-educ Med-educ High- educ (by origin)	Low-educ Med-educ High- educ (by destination)	Men (by origin)	Women (by origin)	Men (by destination)	Women (by destination)				
Cyclical variables at the macro & region level																
Recession	0.0022 (0.07)	0.078 (0.07)	0.097 (0.21)	0.017 (0.06)	-0.18 (0.15)	0.12* (0.07)	-0.094 (0.10)	0.033 (0.07)	0.13 (0.11)	-0.14 (0.12)	0.18** (0.09)	0.25** (0.11)	0.037 (0.07)	0.085 (0.09)	0.21** (0.08)	-0.016 (0.11)
Recovery	0.093 (0.08)	0.033 (0.09)	0.43 (0.29)	0.057 (0.09)	0.030 (0.21)	0.011 (0.09)	0.091 (0.11)	-0.012 (0.10)	0.056 (0.12)	-0.054 (0.13)	0.10 (0.11)	-0.17 (0.13)	-0.033 (0.08)	0.14 (0.12)	0.012 (0.10)	-0.081 (0.11)
Regional-level unemployment gap in pp; lagged	-0.042*** (0.01)	-0.031*** (0.01)	-0.18*** (0.03)	-0.044*** (0.01)	-0.10*** (0.02)	-0.036*** (0.01)	-0.061*** (0.01)	-0.055*** (0.01)	-0.037*** (0.01)	-0.041*** (0.01)	-0.034*** (0.01)	-0.0011 (0.01)	-0.033*** (0.01)	-0.058*** (0.01)	-0.026*** (0.01)	-0.029*** (0.01)
Demand conditions at the industry level																
Industry-specific output growth gap; lagged	-0.015*** (0.00)	0.0063 (0.00)	-0.022** (0.01)	-0.012*** (0.00)	-0.011 (0.01)	0.0084** (0.00)	-0.0040 (0.01)	-0.022*** (0.00)	-0.011* (0.01)	0.016** (0.01)	0.0048 (0.01)	0.018*** (0.01)	-0.014*** (0.00)	-0.016** (0.01)	0.012*** (0.00)	0.0020 (0.01)
Industry characteristics at the regional level: non-standard work																
Share of workers with temporary contracts	0.017*** (0.00)	0.064*** (0.01)	0.038*** (0.00)	0.023*** (0.01)	0.037*** (0.00)	0.078*** (0.01)	0.0028 (0.00)	0.014*** (0.00)	0.025*** (0.01)	0.019*** (0.00)	0.068*** (0.01)	0.056*** (0.01)	0.017*** (0.01)	0.026*** (0.01)	0.066*** (0.01)	0.047*** (0.01)
Share of part-time workers	0.018*** (0.01)	0.0075 (0.01)	0.021*** (0.01)	0.0096** (0.00)	-0.011** (0.00)	-0.0015 (0.00)	-0.0023 (0.00)	0.0069* (0.00)	0.0054 (0.00)	-0.016*** (0.00)	-0.0099*** (0.00)	-0.014 (0.01)	0.015** (0.01)	0.0077* (0.00)	-0.011** (0.00)	-0.0062 (0.00)
Share of self-employed workers	-0.014*** (0.00)	-0.0099** (0.00)	0.0082 (0.01)	-0.0097*** (0.00)	0.0011 (0.01)	-0.0052* (0.00)	-0.0051* (0.00)	-0.0069*** (0.00)	-0.0018 (0.00)	-0.0033 (0.00)	-0.0059 (0.00)	-0.0070* (0.00)	-0.0072** (0.00)	-0.0072** (0.00)	-0.0019 (0.00)	-0.0026 (0.00)
Industry characteristics at the regional level: demographic composition of workers																
Share of workers with below-secondary education	-0.0049 (0.00)	-0.0025 (0.00)	-0.021*** (0.01)	-0.0038 (0.00)	-0.0046 (0.01)	-0.0040 (0.00)							-0.0010 (0.00)	-0.0084* (0.00)	-0.0027 (0.00)	-0.012*** (0.00)
Share of workers with upper-secondary education	0.00038 (0.00)	0.00083 (0.00)	-0.018*** (0.01)	-0.0025 (0.00)	0.0066 (0.00)	-0.0026 (0.00)							-0.0037 (0.00)	-0.0057* (0.00)	0.0016 (0.00)	-0.0051 (0.00)
Age:<25(%)	0.038*** (0.01)	0.041*** (0.01)					0.00088 (0.00)	0.0027 (0.00)	0.0070* (0.00)	0.012** (0.01)	0.043*** (0.01)	0.041** (0.02)	0.031*** (0.01)	0.025*** (0.01)	0.040*** (0.01)	0.041*** (0.01)
Age:25-34(%)	0.0020 (0.00)	0.020*** (0.01)					0.013*** (0.00)	0.035*** (0.01)	0.051*** (0.01)	0.033*** (0.01)	0.020*** (0.01)	0.015*** (0.00)	-0.0039 (0.00)	0.0073* (0.00)	0.020*** (0.01)	0.013** (0.01)
Age:>55(%)	0.010 (0.01)	0.0033 (0.01)					0.0042 (0.00)	-0.0011 (0.00)	0.0054* (0.00)	-0.0076** (0.00)	-0.010** (0.00)	-0.0036 (0.00)	0.011 (0.01)	-0.0022 (0.00)	-0.0053 (0.01)	-0.013*** (0.00)
Share of female workers	0.0037 (0.00)	0.0068 (0.00)	-0.0027 (0.00)	0.0035 (0.00)	0.011*** (0.00)	0.0043 (0.00)	-0.0014 (0.00)	-0.0030 (0.01)	-0.0058 (0.01)	0.0012 (0.00)	-0.00083 (0.00)	0.0048 (0.00)				
Constant	0.43 (0.48)	-0.63 (0.50)	4.45*** (1.01)	2.03*** (0.46)	0.081 (0.74)	1.01** (0.50)	-0.29 (0.43)	0.69* (0.41)	-0.44 (0.44)	-1.05*** (0.43)	-0.19 (0.48)	0.037 (0.49)	0.46 (0.44)	-0.25 (0.57)	-0.70 (0.50)	0.38 (0.62)
Observations	44612	44612	30118	42468	30118	42468	42646	44124	43165	42881	44230	43323	44650	43157	44720	43313
R-squared	0.19	0.18	0.11	0.17	0.13	0.17	0.06	0.12	0.11	0.06	0.12	0.08	0.13	0.13	0.12	0.10
Adjusted R-squared	0.19	0.17	0.10	0.17	0.12	0.17	0.06	0.12	0.11	0.05	0.11	0.08	0.13	0.13	0.12	0.10

Panel B. Job-to-job: open-ended

	Job-to-job: open-ended							
	Working age pop.	15-24	25-54	Low-educ	Med-educ	High-educ	Men	Women
Cyclical variables at the macro & region level								
Recession	-0.33*** (0.07)	-0.54** (0.24)	-0.33*** (0.08)	-0.28** (0.11)	-0.31*** (0.08)	-0.20* (0.11)	-0.31*** (0.08)	-0.16** (0.08)
Recovery	-0.31*** (0.07)	0.12 (0.30)	-0.37*** (0.09)	-0.19 (0.12)	-0.28*** (0.09)	-0.28* (0.17)	-0.29*** (0.08)	-0.17* (0.10)
Regional-level unemployment gap in pp; lagged	-0.0096 (0.01)	-0.047** (0.02)	-0.014* (0.01)	-0.036*** (0.01)	-0.018** (0.01)	-0.011 (0.01)	-0.0063 (0.01)	-0.024** (0.01)
Demand conditions at the industry level								
Industry-specific output growth gap; lagged	0.0040 (0.01)	0.044** (0.02)	0.0080* (0.00)	0.0040 (0.01)	-0.0051 (0.00)	0.022*** (0.01)	0.00014 (0.01)	0.0077 (0.01)
Industry characteristics at the regional level: non-standard work								
Share of workers with temporary contracts	-0.048*** (0.00)	-0.075*** (0.01)	-0.027*** (0.00)	-0.014*** (0.00)	-0.036*** (0.00)	-0.026*** (0.01)	-0.045*** (0.00)	-0.014 (0.01)
Share of part-time workers	0.017*** (0.00)	-0.0045 (0.01)	0.0083* (0.01)	0.012*** (0.00)	0.016*** (0.00)	0.023*** (0.01)	0.031*** (0.01)	0.0086 (0.01)
Share of self-employed workers	-0.048*** (0.00)	-0.10*** (0.01)	-0.047*** (0.00)	-0.028*** (0.00)	-0.031*** (0.00)	-0.035*** (0.00)	-0.044*** (0.00)	-0.025*** (0.00)
Industry characteristics at the regional level: demographic composition of workers								
Share of workers with below-secondary education	-0.00039 (0.00)	-0.017** (0.01)	0.0021 (0.00)				0.00046 (0.00)	-0.0021 (0.00)
Share of workers with upper-secondary education	-0.012*** (0.00)	-0.016*** (0.01)	-0.015*** (0.00)				-0.0074** (0.00)	-0.012*** (0.00)
Age:<25(%)	0.078*** (0.01)			-0.0038* (0.00)	-0.010*** (0.00)	0.0030 (0.00)	0.071*** (0.01)	0.053*** (0.01)
Age:25-34(%)	0.028*** (0.00)			0.014** (0.01)	0.062*** (0.01)	0.062*** (0.01)	0.021*** (0.00)	0.017*** (0.00)
Age:>55(%)	-0.0025 (0.01)			0.019*** (0.00)	0.015*** (0.00)	0.019*** (0.00)	-0.0087* (0.01)	-0.0091** (0.00)
Share of female workers	0.00050 (0.00)	0.0026 (0.01)	-0.0012 (0.00)	-0.0077*** (0.00)	-0.011** (0.00)	-0.012*** (0.00)		
Constant	4.64*** (0.50)	15.0*** (0.95)	6.33*** (0.44)	4.38*** (0.53)	3.97*** (0.38)	2.01*** (0.46)	4.68*** (0.38)	3.37*** (0.55)
Observations	44612	30118	42468	42605	44103	43138	44640	43124
R-squared	0.38	0.19	0.35	0.17	0.33	0.19	0.32	0.26
Adjusted R-squared	0.38	0.18	0.35	0.17	0.32	0.19	0.32	0.26

Job-to-job: temporary

	Job-to-job: temporary							
	Working age pop.	15-24	25-54	Low-educ	Med-educ	High-educ	Men	Women
Cyclical variables at the macro & region level								
Recession	-0.18*** (0.06)	-1.18*** (0.24)	-0.13* (0.08)	-0.18* (0.11)	-0.12* (0.06)	0.027 (0.07)	-0.092 (0.07)	-0.063 (0.06)
Recovery	-0.041 (0.08)	-0.37 (0.32)	-0.061 (0.08)	-0.0056 (0.16)	-0.052 (0.10)	-0.050 (0.11)	-0.015 (0.07)	0.043 (0.10)
Regional-level unemployment gap in pp; lagged	-0.031** (0.01)	-0.092*** (0.03)	-0.024 (0.02)	-0.081*** (0.02)	-0.037*** (0.01)	-0.032** (0.02)	-0.024** (0.01)	-0.048*** (0.01)
Demand conditions at the industry level								
Industry-specific output growth gap; lagged	0.011*** (0.00)	0.037** (0.01)	0.0059 (0.00)	0.0065 (0.01)	0.0021 (0.00)	0.0035 (0.00)	0.010** (0.00)	-0.00025 (0.01)
Industry characteristics at the regional level: non-standard work								
Share of workers with temporary contracts	0.20*** (0.01)	0.21*** (0.01)	0.23*** (0.01)	0.066*** (0.01)	0.16*** (0.01)	0.099*** (0.02)	0.18*** (0.01)	0.12*** (0.01)
Share of part-time workers	-0.0037 (0.00)	-0.0059 (0.01)	-0.0042 (0.01)	-0.058*** (0.00)	-0.013*** (0.00)	-0.025* (0.01)	-0.027*** (0.01)	-0.023*** (0.01)
Share of self-employed workers	-0.012*** (0.00)	-0.00086 (0.01)	-0.0069** (0.00)	-0.023*** (0.00)	-0.0079*** (0.00)	-0.0072*** (0.00)	-0.010*** (0.00)	-0.014*** (0.00)
Industry characteristics at the regional level: demographic composition of workers								
Share of workers with below-secondary education	0.011*** (0.00)	-0.017** (0.01)	0.0097*** (0.00)				0.011*** (0.00)	0.011** (0.00)
Share of workers with upper-secondary education	0.00058 (0.00)	-0.0098 (0.01)	-0.0012 (0.00)				-0.0012 (0.00)	0.0034 (0.00)
Age:<25(%)	-0.027*** (0.01)			0.0073*** (0.00)	0.0057** (0.00)	0.0025 (0.00)	-0.0099 (0.01)	0.0073 (0.01)
Age:25-34(%)	-0.0021 (0.00)			0.025*** (0.01)	0.0068 (0.01)	0.042*** (0.01)	0.00022 (0.00)	0.0081** (0.00)
Age:>55(%)	0.0022 (0.01)			0.018*** (0.00)	0.0016 (0.00)	0.0095** (0.00)	0.0061 (0.00)	-0.0044 (0.00)
Share of female workers	0.0041 (0.00)	0.0077 (0.00)	0.0050* (0.00)	-0.00075 (0.00)	-0.0049 (0.00)	-0.0031 (0.00)		
Constant	0.65* (0.39)	0.64 (1.15)	0.67* (0.36)	2.59*** (0.56)	0.90** (0.38)	1.44*** (0.45)	0.89** (0.42)	1.18*** (0.44)
Observations	44612	30118	42468	42600	44106	43130	44641	43142
R-squared	0.39	0.26	0.40	0.18	0.31	0.19	0.32	0.25
Adjusted R-squared	0.39	0.26	0.39	0.18	0.31	0.18	0.32	0.24

Note: See text and Annex for the definition of annual transition probabilities and for the identification of expansions, recoveries and recessions. All estimates include fixed effects at the country, region, industry and year level as well as an interaction between industry fixed effects and the year 2008 fixed effect to control for the change in industry classification effective as of 2008. The regional classification is based on NUTS-2 and the industry classification is based on NACE-Rev.2. Standard errors are clustered at the regional level. The sample includes the following 19 European countries: AUT, BEL, CHE, CZE, DEU, DNK, ESP, FIN, FRA, GBR, GRC, HUN, ITA, NOR, POL, PRT, SVK, SVN, SWE.

Source: OECD estimates. See Annex for details on data sources.

Most results from this baseline analysis are broadly in line with existing literature on labour market transitions, in particular: i) the marked pro-cyclicality of unemployment-to-job transitions, with recession episodes and adverse local labour market conditions significantly reducing chances of exiting unemployment, especially among low- and medium-skilled workers ((Speer, 2016^[47]), (Shimer, 2012^[48]), (Hall, 2005^[49])); ii) the pro-cyclicality of job-to-job transitions and its disproportionate adverse impact on young people's ability to climb the job ladder ((Bjelland et al., 2011^[50]), (Hijzen, Zwysen and Lillehagen, 2021^[15]), see also (Causa, Luu and Abendschein, 2021^[20])); iii) the larger effect of recession episodes on men relative to women labour market transitions, as documented in the literature on past recessions (

(Bachmann et al., 2015^[51]), (Verick, 2009^[52]);²⁷ and iv) again on gender, the findings regarding women's transition from inactivity to job across the macro-cycle may reflect pre-COVID-19 evidence according to which women have tended to enter the labour market to compensate for their partner's job or income losses ((Landivar, 2012^[53]), (Kongar and Berik, 2014^[54])).

This analysis complements previous literature by delivering new insights relevant for policy design: i) the finding that bad macro-conditions significantly reduce job-to-job mobility within but not across industries could reflect workers' cross-industry reallocation as part of "cleansing effects" from recessions ((Hijzen, Zwysen and Lillehagen, 2021^[15]), (Caballero and Hammour, 1991^[55])); ii) the finding that hiring transition probabilities are generally higher in industries featuring higher incidence of temporary work –except transitions towards open-ended jobs (see also (Hijzen, Mondauto and Scarpetta, 2017^[56])). This raises possible tensions between encouraging mobility into jobs but at the same time considering the quality of such jobs in terms of e.g. social protection, pay and working conditions ((OECD, 2019^[57]), (OECD, 2021^[58])); iii) the finding of gender-specific effects associated with part-time work, potentially reflecting the sorting of women in jobs in industries featuring high part-time and low mobility prospects ((Ciminelli, Schwellnus and Stadler, 2021^[59]), (Criscuolo et al., 2021^[60])); and, iv) the finding that industry demand conditions are significant drivers of labour market transitions within and across industries, a signal of efficiency in workers' reallocation (OECD, 2009^[3]), which, however, is weaker in the case of low-skilled workers, especially regarding job switches.

Policy drivers of hiring transitions

This section presents a selection of policy results, the complete set of which is reported in the annex. This is organised by transition: jobless-to-job, (i.e. unemployment to-job and inactivity to-job) (Table 3) and job-to-job (Table 5). Beyond the total working-age population, the focus is on key policy target groups: low-educated workers, youth and women. The section then delivers illustrative policy simulations. The selection criterion for simulations is timeliness and a related sense of prioritisation: in a nutshell, based on the evidence delivered by the empirical analysis, the idea is trying to identify those policy approaches that would be most effective today to achieve a smooth and inclusive labour market recovery from the COVID-19 crisis. While priorities vary depending on country context, one common challenge is to support transitions from unemployment and inactivity to job and encourage job-to-job reallocations, especially among socio-economic groups that face high scarring risks; while, moving away from the pandemic recovery, to address labour shortages and support the green and digital transformations.

The simulation exercise proceeds as follows. The direction of the policy change is chosen so that the hiring transition probability effect is positive. In order to propose relatively realistic reform scenarios, avoid 'one-size-fits-all' solutions, while at the same time remain simple, the simulations consider two benchmark cases depending on countries' relative starting point: 1) the median of OECD countries, with the policy gap being closed for countries below (above) this benchmark; and 2) the upper (lower) quartile of OECD countries, with the policy gap being closed for countries below (above) this benchmark, but above (below) the median. This is a highly stylised way to consider cross-country heterogeneity. Policy packages need to be fine-tuned at the country-level, taking into account country-specific context, social preferences, policy objectives and political economy and implementation constraints. To complement the empirical evidence drawn from the cross-country analysis, Box 2 reports some examples of relevant and concrete policy actions undertaken by countries to support hiring dynamics during the crisis and recovery.

²⁷ The COVID-19 recession has been different in this respect: it initially impacted women disproportionately, in part driven by their over-representation in contact-intensive jobs. Employment and unemployment have been subsequently recovering for both men and women, in a "gender-neutral" way (Cortes and Forsythe, 2020^[101]). However, transitions from job and unemployment to inactivity have been rising more among women, accentuating gender gaps (Causa, Luu and Abendschein, 2021^[20]).

Jobless-to-job transitions

Table 3 presents a selection of results on the policy drivers of jobless-to-job transitions

Table 3. Policy drivers of jobless-to-job hiring transitions: selected results

Dependent variable: Hiring transition probabilities for the working-age population, young people, low-skilled workers and women

	Unemployment to job				Inactivity fulfilling domestic tasks to job	Inactivity study/training to job
	Working age pop.	Low-edu	Youth	Women	Women	Youth
ALMP spending per GDP per unemployed						
PES and administration	0.42***	0.57***	0.52*	0.49***	-0.095	0.19***
Training	-0.094**	0.053	-0.079	0.070**	0.012	0.19***
Apprenticeship	2.95***	3.14***	3.20***	2.25***	0.97***	0.57**
Employment incentives	0.60***	0.78***	0.98***	0.65***	0.22**	0.29***
Sheltered and supported employment and rehabilitation	0.18*	0.27**	0.29	0.32**	0.035	0.060**
Direct job creation	0.19***	0.37***	0.33***	0.17***	0.040**	0.064***
Total active measures	0.076***	0.17***	0.16***	0.15***	0.023	0.094***
Interaction with macroeconomic conditions						
PES and administration	0.42***	0.55***	0.52*	0.48***	-0.10	0.18***
PES and administration # recession	0.14**	0.32***	0.28**	0.23***	0.077	0.10***
PES and administration # recovery	0.27***	0.37***	0.42***	0.27***	0.10	0.012
Training	-0.13***	-0.021	-0.17*	0.016	-0.015	0.17***
Training # recession	0.081*	0.18***	0.21***	0.12**	0.048*	0.041**
Training # recovery	0.097***	0.13*	0.22***	0.10***	0.071**	0.0067
Apprenticeship	2.89***	3.00***	2.94***	2.15***	0.94***	0.35*
Apprenticeship # recession	0.30	0.79	1.46*	0.45	0.13	-0.18
Apprenticeship # recovery	0.053	-0.59	-0.041	0.42	0.069	0.81***
Employment incentives	0.58***	0.77***	0.98***	0.65***	0.22**	0.30***
Employment incentives # recession	0.23***	0.41***	0.47***	0.34***	0.16**	0.039
Employment incentives # recovery	0.22***	0.24***	0.36***	0.22***	0.12	-0.085***
Sheltered and supported employment and rehabilitation	0.22**	0.29***	0.36*	0.34***	0.047	0.051*
Sheltered and supported employment and rehabilitation # recession	0.15***	0.22***	0.20***	0.18***	0.036	0.066***
Sheltered and supported employment and rehabilitation # recovery	0.30***	0.37***	0.43***	0.32***	0.093**	0.016
Direct job creation	0.18***	0.37***	0.34***	0.16***	0.038	0.071***
Direct job creation # recession	-0.049	0.13	0.38	-0.082	-0.072	0.22***
Direct job creation # recovery	-0.016	0.044	0.19	0.0074	-0.0023	0.036
Total active measures	0.073***	0.16***	0.16***	0.14***	0.020	0.092***
Total active measures # recession	0.019	0.051***	0.057**	0.036**	0.013	0.021***
Total active measures # recovery	0.038***	0.058***	0.082***	0.044***	0.023*	0.0071
UB replacement rates						
100 AW; av unemployment spell	-0.018***	-0.016***	-0.023***	-0.0049	-0.0015	-0.0043**
67 AW; av unemployment spell	-0.018***	-0.016***	-0.025***	-0.0049	-0.0037	-0.0025
Minimum Wage; av unemployment spell	0.011***	0.0027	0.0035	0.019***	-0.00048	-0.0021
Interaction with macroeconomic conditions						
100 AW; av unemployment spell	-0.019***	-0.017***	-0.025***	-0.0063*	-0.0023	-0.0043**
100 AW; av unemployment spell # recession	0.011***	0.010***	0.022***	0.012***	0.0062***	-0.000031
100 AW; av unemployment spell # recovery	0.011***	0.0098***	0.013***	0.012***	0.0072***	-0.00008
67 AW; av unemployment spell	-0.018***	-0.015***	-0.023***	-0.0043	-0.0035	-0.0024
67 AW; av unemployment spell # recession	0.012***	0.011***	0.021***	0.013***	0.0056**	0.00033
67 AW; av unemployment spell # recovery	0.012***	0.011***	0.014***	0.012***	0.0065***	-0.001
Minimum Wage; av unemployment spell	0.010***	0.0024	0.0024	0.018***	-0.00090	-0.0022
Minimum Wage; av unemployment spell # recession	0.0049*	0.00090	0.0067	0.0068**	0.0034***	-0.00058
Minimum Wage; av unemployment spell # recovery	-0.0053*	-0.014***	-0.030***	-0.0019	-0.00064	-0.0061***

	Unemployment to job				Inactivity fulfilling domestic tasks to job	Inactivity study/training to job
	Working age pop.	Low-edu	Youth	Women	Women	Youth
Wage bargaining settings, labour tax wedges and incidence of low-pay						
Collective bargaining decentralisation	0.11	0.35***	0.17	0.12	-0.031	0.22***
Incidence of low pay	-0.023*	-0.029	-0.0083	-0.020	0.0016	-0.011
Average tax wedge 67% AW	-0.036***	-0.025**	-0.041**	-0.018**	-0.028**	0.0091**
Marginal tax wedge 67% AW	-0.015***	-0.013*	-0.00048	-0.0094*	-0.018***	-0.0044*
Average tax wedge 100% AW	-0.028***	-0.041***	-0.052***	-0.021***	-0.019***	0.0028
Marginal tax wedge 100% AW	-0.013***	-0.017***	-0.016***	-0.0071**	-0.0018	-0.00055
Job protection legislation						
Job protection on regular contracts (individual and collective dismissals);	0.028	-0.27**	-0.12	-0.15	-0.039	-0.042
Job protection on regular contracts (individual dismissals)	-0.0013	-0.23**	-0.039	-0.12	-0.058	-0.069**
Job protection on temporary contracts	-0.015	-0.19	-0.11	-0.14	0.38***	0.23***
Difference between Job protection on regular and temporary contracts	0.0051	-0.086	0.013	-0.031	-0.19***	-0.13***
Barriers to business entry and competition, occupational entry regulations						
PMR - aggregate X Industry-specific output growth gap	0.00014	-0.017***	-0.025*	-0.0083*	-0.0033	-0.012***
PMR - barriers to entrepreneurship X Industry-specific output growth gap	0.0014	-0.0031	0.0013	-0.0059	-0.0060***	-0.0051**
OER - personal and professional services X Industry-specific output growth gap	-0.0025	-0.013***	-0.030**	-0.0099**	0.00036	-0.0092***
OER - personal services - mobility restrictions X Industry-specific output growth gap	-0.086***	-0.10***	-0.28***	-0.050***	-0.0062	-0.022***
OER - professional services - mobility restrictions X Industry-specific output growth gap	0.012**	0.00065	0.023	0.0050	0.0078	-0.011***
Policy support for families						
Childcare benefits: couple (first earner 67%AW, second earner minimum wage)	0.066***	0.086***		0.068***	-0.0039	
Childcare benefits: lone parent (minimum wage)	0.022***	0.034***		0.022**	-0.0011	
Proportion of children aged 0-2 enrolled in formal childcare and pre-school	-0.0022	-0.0018		-0.0030	-0.0059***	
Length of paid maternity and parental leave	-0.0039***	-0.0051**		-0.0024**	0.00049	
Length of paid paternity and parental leave	-0.0040	-0.0037		-0.0019	-0.0021	
Difference between length of paid maternity and paternity leave	-0.0028***	-0.0038*		-0.0018*	0.00084	
Housing, geographical mobility and international migration						
Rent control	-0.42***	-0.31**	-0.67***	-0.25**	-0.76***	-0.030
Social spending on housing	0.26*	-0.0100	0.13	0.24	-0.22*	-0.056
Country-level inter-regional in-migration rate (% pop t-1)	0.29***	0.41***	0.28**	0.15**	0.081***	0.071***
Country-level international in-migration (% pop t-1)	0.11*	0.12*	-0.0096	0.085	0.14***	0.10***

Note: The baseline specification presented in Tables 1-2 is augmented with policy indicators, one at a time. This table summarises the results by reporting policy effects estimates. The annex reports detailed regression results and a variety of robustness tests.

Source: OECD estimates. See Annex for details on data sources.

Relevant results from estimates on active labour market policies and unemployment benefits can be summarised as follows:

- Active labour market policies,²⁸ both total spending and major spending categories, from job-search support (PES and administration) to apprenticeship and wage subsidies (employment incentives), are all found to significantly boost transition probabilities from unemployment to job. These positive effects are estimated to be stronger for low-educated workers.
- Active labour market policies, across all categories of spending, tend to boost transitions from study to job among young people.
- The effects of unemployment benefits are estimated to depend on the level of jobseekers' previous wages: replacement rates for workers earning more than two-thirds of the average wage are negatively associated with transitions from unemployment to job while replacement rates for workers earning the minimum wage are positively associated with transitions from unemployment to job.

Extensions to uncover the possible differential effects of policies to support jobseekers throughout major macroeconomic cycles deliver the following insights:

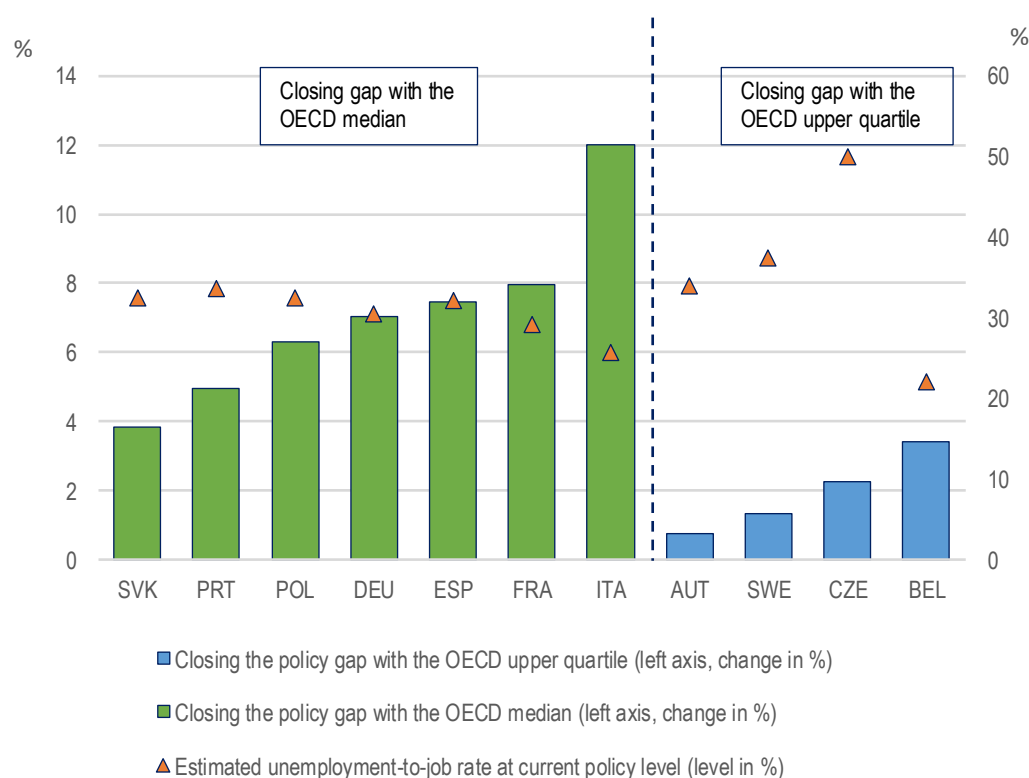
²⁸ The measures refer to spending in total and per category/programme relative to GDP per unemployed, as standard in the literature. Results are robust to omitting the normalisation by the number of unemployed.

- Almost all active labour market policies (in terms of spending categories) are found to have stronger traction on job-finding probabilities during downturns relative to expansions.
- Active labour market policies also exhibit counter-cyclical effects for transitions from study to job among young people, boosting such transitions relatively more during downturns than expansions, for example in the area of training and apprenticeship. Similarly, women's transitions from inactivity to fulfil domestic tasks to job are generally more responsive to active labour market policies in downturns.
- The estimated effects of unemployment benefit replacement rates for workers earning more than two-thirds of the average are found to depend on the cycle, that is, negative during expansions but less negative or even positive during downturns and recoveries (relative to expansions).

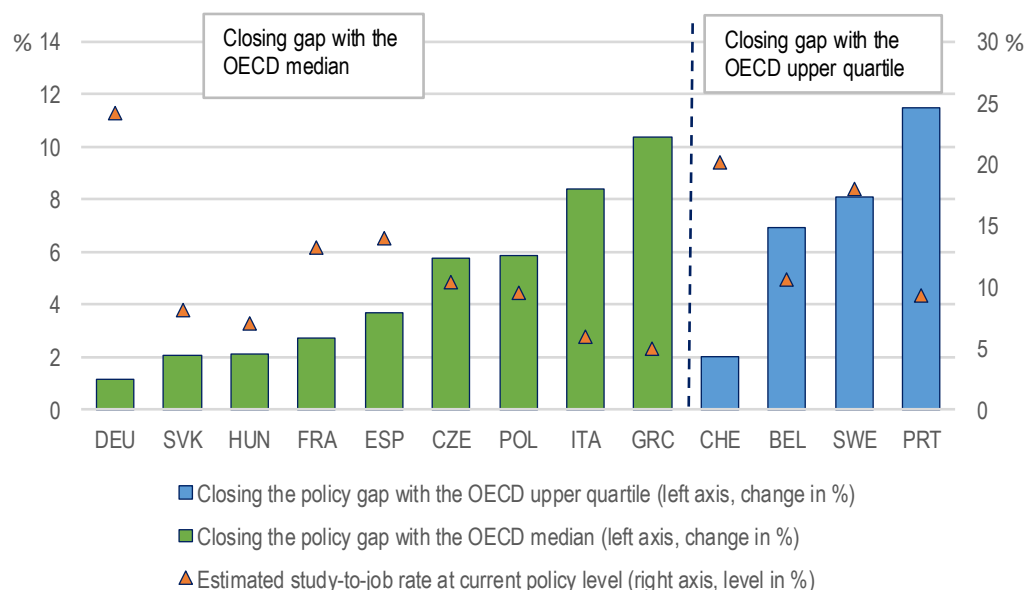
In the current context, well-functioning and well-targeted active labour market policies are key for the labour market recovery and to reduce scarring risks, everywhere but in particular in countries where current policy settings in this area are relatively weak. This point is illustrated by means of illustrative policy simulations in Figure 6, featuring two stylised scenarios: i) Stepping-up total spending on active labour market policies, effects of unemployment-to-job transitions for the working-age population; ii) Stepping-up spending on training, effects of study-to-job transitions for young people.

Figure 6. Stepping-up active labour market policies

Panel A. Stepping-up total spending on active labour market policies, effects of unemployment-to-job transitions for the working-age population



Panel B. Stepping-up spending on training, effects of study-to-job transitions for young people



Note: Based on the latest available year for every country. The simulations consider two benchmark cases depending on countries' relative starting point: 1) the median of OECD countries, with the policy gap being closed for countries below this benchmark, 2) the upper quartile of OECD countries, with the policy gap being closed for countries below this benchmark but above the median. Total spending on active labour market policies is not available for Greece and the United Kingdom.

Source: OECD calculations, see Annex for data sources.

Active labour market policy reform scenarios suggest substantive policy-driven unemployment-to-job transition gains in Italy, France and Spain. These countries tend to feature relatively high unemployment rates, especially among young people and the low-skilled, as well as high incidence of long-term unemployment. Increasing efforts on training programmes may help young people get on the job ladder and reduce long-term damage from those that entered the labour market during the pandemic, in particular in countries where transitions from study to job are difficult, such as Greece, Italy and Portugal.

Key findings on labour tax wedges²⁹ and low-pay are:

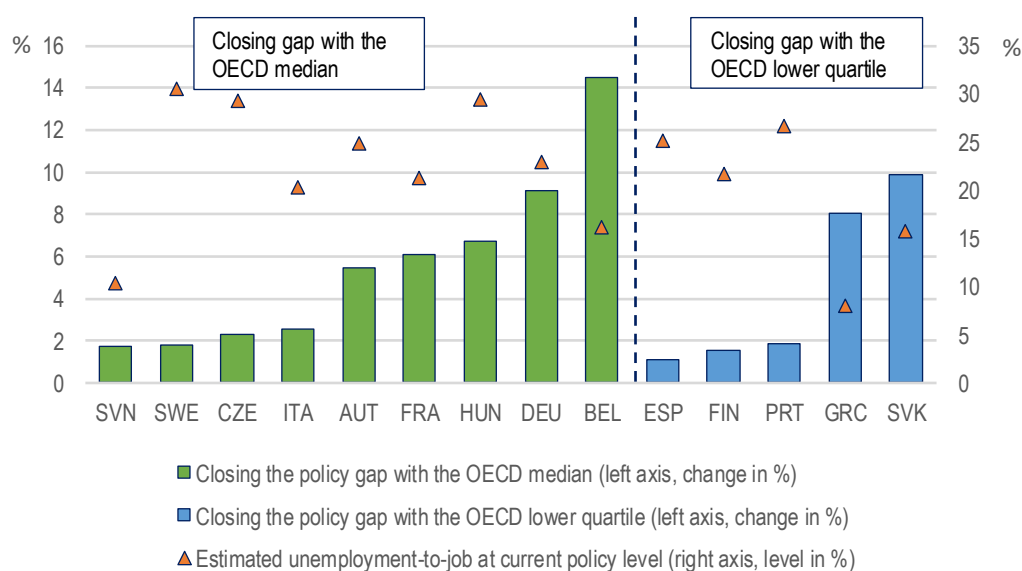
- High levels of average and marginal labour tax wedges, both at average wages and at 67% of average wages, are found to depress unemployment-to-job mobility; as well as inactivity to fulfil domestic tasks to-job transitions for women.
- High incidence of low-pay is associated with low transitions from unemployment to job.

Reforms to reduce labour tax wedges can be instrumental for the labour market recovery by encouraging hiring transitions from jobless to job, and durably so in countries where labour is relatively heavily taxed. Illustrative simulations show that reducing the labour tax wedge in the lower-part of the wage distribution would increase the probabilities to move from unemployment to job among the low-skilled (Figure 7). The scenarios consistently point to major gains in countries where labour taxation is relatively high, particularly Belgium and Germany. Focusing on low-wage earners delivers larger gains, given higher supply and demand elasticities at the bottom of the distribution. Reforms in this area can be costly in the short-run but can be part of broader policy packages to shift from e.g. labour to property or environmental taxes, taking into account progressivity and efficiency considerations.

²⁹ The results on labour taxes are robust to estimating jointly the effects of average and marginal tax wedges.

Figure 7. Reducing the labour tax wedge in the lower-part of the wage distribution

Effects on transitions from unemployment to job for low-skilled workers



Note: Labour tax wedge at 67% of the average wage.

Source: OECD calculations, see Annex for data sources.

Job protection legislation is also associated with jobless-to-job-mobility across countries:

- Higher levels of job protection on regular contracts are found to depress unemployment-to-job transitions among low-educated workers.
- Larger gaps in job protection between regular and temporary jobs lead to lower levels of unemployment-to-regular contract job transitions for low-educated workers. Higher levels of job protection on temporary contracts are found to depress unemployment-to-temporary job transitions among low-educated workers.
- Larger gaps in job protection between regular and temporary jobs depress transition probabilities from study to job among young people and from inactivity to job for women. Higher levels of job protection for temporary contracts are found to increase chances of moving from inactivity to fulfil domestic tasks to job among women and from study to job among young people.

The analysis of product market regulations and occupational entry restrictions delivers the following insights:^{30 31}

- More restrictive product market regulations reduce the responsiveness of unemployment-to-job mobility to industry-level demand conditions among the low-educated, women and young people. The effects of occupational entry regulations also are generally negative (with the exception of

³⁰As explained before, due to the time-invariant nature of the policy indicators, the approach adopted here is based on interaction effects with the industry output growth gap. This allows to tentatively assess the extent to which regulatory policies influence the responsiveness of labour market transitions to industry-level demand conditions and shocks.

³¹ The results on occupational entry regulations are broadly stable if the empirical analysis is restricted to the industries covered by the underlying indicators.

mobility restrictions on personal services). The effects of occupational requirements vary across socio-economic groups and tend to be more pronounced among the low-educated, women and young people.

- Policy barriers to business entry and occupational entry regulations are also found to systematically impact the transition of young people from study to jobs by dampening the responsiveness to industry demand conditions.

Relevant findings on policy support for families can be summarised as follows:

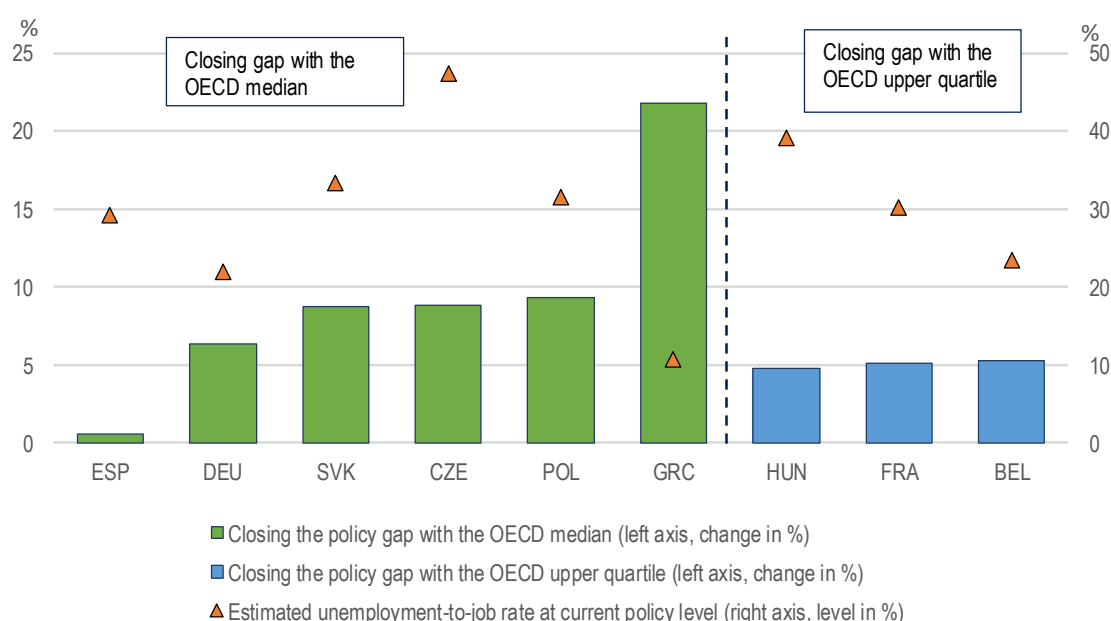
- Childcare benefits are found to significantly support unemployment-to-job transitions, especially among the low-skilled.
- Parental leave policies also influence unemployment-to-job transitions: longer leaves, especially for mothers, are associated with lower unemployment-to-job transitions. Unemployment-to-job transitions are higher where gaps between the length of maternity and paternity leave are smaller.

Stepping-up childcare benefits, especially if targeted at vulnerable families, is likely to support the recovery and reduce scarring risks, especially by helping mothers, not least lone mothers, accessing jobs. This is tentatively illustrated in Figure 8, whereby a scenario of an increase in childcare benefits for low-income lone parents would deliver large hiring gains for women in countries where women face more obstacles to move into jobs, such as Greece and Germany.

Figure 8. Increasing childcare benefits for lone parents at the minimum wage

Effects on transitions from unemployment to-job for women

Effects on transitions from unemployment to-job for women



Note: Childcare benefits in percent of average wage. Social assistance and housing benefits included. Single parent with two children and earnings at minimum wage. Data not available for Austria, Denmark, Finland, Italy, Norway, Sweden and Switzerland.

Source: OECD calculations, see Annex for data sources.

Results on housing policies, the geographical mobility of the workforce and international migration include:

- Strict rent control is associated with lower unemployment-to-job transitions across most socio-economic groups, with somewhat stronger effects for young people; as well as lower inactivity-to-job transitions among women. Social spending on housing is positively associated with unemployment-to-job transitions in the working-age population, but the result does not hold for target socio-economic groups expected to benefit more from social spending on housing.
- Countries where the population is more internally mobile display higher levels of unemployment-to-job transitions, in particular among the low-skilled, as well as inactivity-to-job transitions among youth and women. Countries that receive a higher proportion of international migrants display higher inactivity-to-job transitions among youth and women.

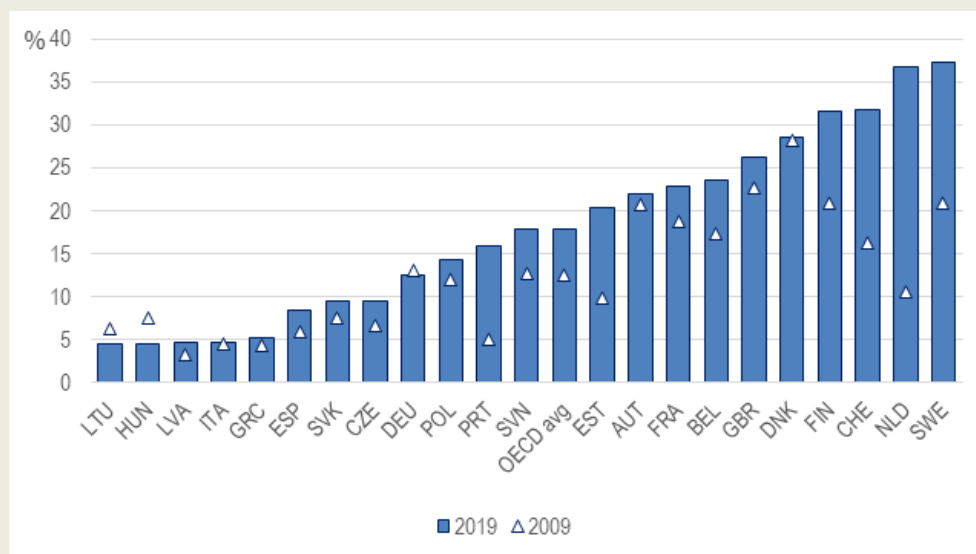
Geographical mobility may become less concerning for labour mobility and labour market dynamism in the context of increasing teleworking, a trend pre-dating the COVID-19 crisis (Figure 9) yet amplified during the pandemic as a result of lockdowns and social distancing. This trend is very likely to persist as part of the digital transformation, and in this context future work is needed to explore the facets and consequences of teleworking for growth, inclusiveness and sustainability ((Adrian et al., 2021^[61]), (Barrero, Bloom and Davis, 2021^[62])). To shed some preliminary light on this issue, Box 1 provides an illustrative empirical exercise on the link between teleworking and hiring transitions. The results suggest that countries where teleworking is more frequent enjoy higher levels of unemployment-to job and job-to-job mobility, all else being equal. Importantly, this effect increases steeply with workers' education, and in fact it is not significant among low-educated workers. Women and youth transitions from inactivity/study to job are also found to increase with the incidence of teleworking.

Box 1. Teleworking and labour market transitions: stylised facts and preliminary analysis

The health and economic crisis related to the COVID-19 pandemic and the required physical distancing measures induced many firms to introduce telework on a large scale. This is likely to catalyse wider adoption of teleworking practices also after the crisis, with a wide range of impacts and uncertain net effects on productivity, labour market dynamics and workers' well-being (Crisuolo et al., 2021^[63]). Theoretical priors and previous work suggest that the generalisation of telework could be beneficial for labour market mobility and also for well-being as workers declare preferring to keep teleworking arrangements in the post-crisis context (Barrero, Bloom and Davis, 2021^[62]). Indeed, remote working offers great flexibility in working time and place, more autonomy and better work-life balance, which could result in higher labour participation of people with mobility constraints, for instance women with care responsibilities, older people or people living in remote areas ((Adrian et al., 2021^[61]), (OECD, 2021^[18]), (Samek Lodovici et al., 2021^[64])).

Teleworking was on the rise before the onset of the COVID-19 pandemic in the majority of European countries (Figure 9). However, its incidence varies substantially across countries, from e.g. less than 5% of workers teleworking usually or occasionally in Lithuania to almost 40% in Sweden, partly reflecting differences in industrial structure (Milasi, González-Vázquez and Fernández-Macías, 2021^[65]). Pre-pandemic evidence shows that teleworking is unevenly distributed across workers and firms, being typically less frequent among low-skilled workers (OECD, 2020^[66]). One reason for this is their relatively high concentration in occupations and industries that rely heavily on human contact and interaction, such as hotels and restaurants or construction (Causa, Luu and Abendschein, 2021^[20]). This raises the risk that wider adoption of teleworking post COVID-19 crisis may contribute to a greater fragmentation of workforce and a widening social inequality.

Figure 9. Developments in teleworking over the pre-COVID-19 pandemic decade, 2009-2019.



Note: The incidence of teleworking is measured by the share of workers who declare to usually or occasionally telework.

Source: EU-LFS data, OECD calculations.

Table 4. The effect of teleworking on labour market transitions: preliminary results

Panel A: Job-to-job transitions

Job-to-job							Job-to-job: same sector							Job-to-job: other sector						
Low-educ	Mid-educ	High-educ	Youth	Prime-aged	Women	Men	Low-educ	Mid-educ	High-educ	Youth	Prime-aged	Women	Men	Low-educ	Mid-educ	High-educ	Youth	Prime-aged	Women	Men
	+	+	+	+	+	+	+	+	+	+	+	+	+		-	-	-			-
	(**)	(***)	(***)	(***)	(***)	(*)	(*)	(***)	(***)	(***)	(*)	(***)	(**)		(*)	(*)	(**)			(*)

Panel B: Jobless-to-job transitions

Unemployment-to-job							Inactivity fulfilling domestic tasks-to-job	Study/training-to-job
Low-educ	Mid-educ	High-educ	Youth	Prime-aged	Women	Men	Women	Youth
	+	+	+	+	+	+	+	+
	(***)	(***)	(***)	(***)	(***)	(*)	(***)	(**)

Note: The symbol + (-) refers to a positive (negative) association between telework and the transition. Levels of significance are reported in the parenthesis. Cells highlighted in blue refer to the socio-demographic group with the biggest regression coefficients in a comparison exercise across education level, age, and gender. For example, the estimated responsiveness of unemployment-to-job transition to telework is relatively higher for women than it is for men.

Source: OECD estimates. See Annex for details on data sources.

To shed some light on the link between teleworking and labour market mobility, the baseline model is augmented with the country-level share of workers who declare that they work remotely on a regular or occasional basis. The results indicate

a significantly positive association between the incidence of teleworking and transitions from job to job, from unemployment to job and from inactivity to job (Table 4).

This may suggest that the possibility to work remotely increases the pool of firms and workers in the labour market and thus potentially their matching. Going further, the positive effect of teleworking on job-to-job mobility seems to be driven by mobility within industries. Greater prevalence of remote working tends to reduce job mobility across industries.

The benefits and scope of teleworking are unevenly distributed across socio-economic groups. The positive effects on mobility between jobs and from unemployment to job increase strongly with workers' education: effects are strongest for the high-skilled and statistically insignificant for the low-skilled. Teleworking effects are also found to vary across age groups and gender, being relatively stronger for young people and for women. Finally, the diffusion of telework tends to facilitate transitions out of inactivity among women fulfilling domestic tasks and young people in education.

To give a purely illustrative order of magnitude, the estimates imply that a one cross-country standard deviation increase in the incidence of telework is associated with an increase in job-to-job transitions by around 9% for high-skilled workers compared to no significant change for the low-skilled. The effect is even stronger for women, whose propensity to change job increases by around 11%, compared to 7% for men. With regards to youth, chances to move from study to job are estimated to increase by around 6%.

These results indicate that teleworking arrangements have the potential to enhance labour market dynamism, productivity and workers' well-being. Public policies are crucial to ensure that new efficient teleworking methods benefit a majority of workers, which requires enabling conditions in e.g. digital infrastructure, skills and managerial practices.

Job-to-job transitions

Table 5 presents a selection of results on the policy drivers of job-to-job transitions.

Relevant results from estimates on job protection legislation can be summarised as follows:

- Higher job protection on regular contracts is associated with lower job-to-job transitions, both within and across industries. Such effects are significantly stronger for low-educated workers and for young people.
- Negative effects of job protection on regular contracts are found for both transitions to regular contracts and to temporary contracts for the working-age population, but not for all socio-economic groups. In particular, among youth, higher job protection on regular contracts is associated with significantly lower transitions to regular contracts, but not to temporary contracts.
- Higher job protection on temporary contracts is associated with higher job-to-job transitions within industries and less across industries. Such effects are somewhat stronger for the low-educated workers and for women. Higher job protection on temporary contracts is also associated with higher transitions to open-ended contracts, in particular for low-educated workers.
- Large differences in job protection between regular and temporary contracts are found to lower job-to-job transitions, both within and across industries, and into regular or temporary jobs.

Table 5. Policy drivers of job-to-job hiring transitions: selected results

Dependent variable: Hiring transition probabilities for the working-age population, young people, low-skilled workers and women

Panel A

	Job-to-job				Job-to-job: same sector				Job-to-job: other sector				Job-to-job: open-ended				Job-to-job: temporary			
	Working age pop.	Low-edu	Youth	Women	Working age pop.	Low-edu	Youth	Women	Working age pop.	Low-edu	Youth	Women	Working age pop.	Low-edu	Youth	Women	Working age pop.	Low-edu	Youth	Women
Job protection legislation																				
Job protection on regular contracts (individual and collective dismissals)	-0.32	-1.22**	-2.71**	-0.20	0.098	-0.67*	-0.92	0.34	-0.42**	-0.64**	-1.79***	-0.59**	-0.36*	-0.60*	-2.41***	-0.16	-0.28*	-0.91***	-0.26	-0.28
Job protection on regular contracts (individual dismissals)	-0.58**	-1.54***	-2.77***	-0.62**	-0.051	-0.80***	-0.94	0.083	-0.53***	-0.79***	-1.83***	-0.74***	-0.49***	-0.95***	-2.37***	-0.37	-0.31***	-0.83***	-0.27	-0.39**
Job protection on temporary contracts	0.68*	2.10***	0.66	0.92**	1.18***	2.02***	1.43	1.18***	-0.49**	0.061	-0.77	-0.38	0.75***	1.72***	1.34	0.82***	-0.15	0.38	-0.56	0.032
Difference between job protection on regular and temporary contracts	-0.68***	-1.91***	-2.21***	-0.80***	-0.50***	-1.36***	-1.19*	-0.41**	-0.17	-0.58***	-1.02**	-0.36**	-0.64***	-1.35***	-2.17***	-0.58***	-0.16*	-0.73***	0.011	-0.29*
Barriers to business entry and competition, occupational entry regulations																				
PMR - aggregate X Industry-specific output growth	-0.060***	-0.14***	-0.34***	-0.037	-0.037***	-0.092***	-0.26***	-0.021	-0.023**	-0.055***	-0.082**	-0.0049								
PMR - barriers to entrepreneurship X Industry-specific output growth gap	-0.019	-0.077***	-0.24***	-0.0087	-0.0084	-0.027	-0.18***	-0.023	-0.011	-0.037***	-0.061**	0.012								
OER – personal and professional services X Industry-specific output growth gap	-0.054***	-0.041	-0.034	-0.032	-0.020	-0.073	0.068	-0.023	-0.034***	-0.029**	-0.10***	-0.060***								
OER – personal services - mobility restrictions X Industry-specific output growth gap	-0.21*	0.055	-0.73*	0.13	-0.15*	-0.15	-0.48	0.16	-0.059	-0.0060	-0.25	-0.024								
OER – professional services - mobility restrictions X Industry-specific output growth gap	-0.052*	0.022	0.17	-0.041	-0.0061	-0.048	0.27**	-0.047	-0.046***	-0.033	-0.095	-0.072**								

Panel B

	Job-to-job			
	<i>Working age pop.</i>	<i>Low-edu</i>	<i>Youth</i>	<i>Women</i>
<i>Wage bargaining settings, labour tax wedges and incidence of low-pay</i>				
Collective bargaining decentralisation	0.99***	1.56***	3.45***	0.98***
Incidence of low pay	-0.15**	-0.37**	-0.47***	-0.17*
Average tax wedge 67% AW	-0.15**	-0.015	-0.33*	-0.096*
Marginal tax wedge 67% AW	-0.11***	-0.13***	-0.29***	-0.065**
Average tax wedge 100% AW	-0.14***	-0.19***	-0.41***	-0.16***
Marginal tax wedge 100% AW	-0.050***	-0.11***	-0.11***	-0.051***
<i>Policy support for families</i>				
Childcare benefits: couple (first earner 67%AW, second earner minimum wage)	0.00040	-0.089		-0.019
Childcare benefits: lone parent (minimum wage)	0.0012	-0.030		0.014
Proportion of children aged 0-2 enrolled in formal childcare and pre-school	-0.012	0.046***		0.047***
Length of paid maternity and parental leave	-0.0068	-0.0099		-0.0072
Length of paid paternity and parental leave	0.0098	-0.017		0.033***
Difference between length of paid maternity and paternity leave	-0.0079**	-0.0056		-0.013***
<i>Housing, geographical mobility and international migration</i>				
Rent control	-2.77***	-2.12***	-8.72***	-2.20***
Social spending on housing	-5.04***	-6.84***	-13.2***	-5.81***
Country-level inter-regional in-migration rate (% pop t)	1.22***	2.02***	2.62***	1.54***
Country-level international in-migration (% pop t-1)	1.54***	2.12***	3.00***	1.43***

Note: The baseline specification presented in Tables 1-2 is augmented with policy indicators, one at a time. This table summarises the results by reporting policy effects estimates. The annex reports detailed regression results and a variety of robustness tests.

Source: OECD estimates. See Annex for details on data sources.

The estimates shed new light on the role of policy barriers to business entry and competition and occupational entry regulations for job mobility:

- More restrictive product market regulations and associated policy barriers to entrepreneurship reduce the responsiveness of job-to-job mobility to industry-level demand conditions, particularly among the low-educated and young people.
- A similar qualitative finding applies to occupational entry regulations, both in personal and in professional services, particularly in terms of cross-industry job-to-job mobility. The effects of occupational entry regulations are highly heterogeneous across socio-economic groups, with higher responsiveness of high-educated relative to low-educated workers. The estimates also suggest that occupational entry regulations obstacle women's job-to-job mobility.

Easing policy barriers to business entry and competition has the potential to support job-to-job mobility, all the more at the current juncture among young people for whom changing job at the beginning of the career is key to climb the job ladder and for long-term labour market prospects. Reforms in this area are likely to reduce scarring risks among those who entered the labour market during the pandemic and who have been hardest hit by the pandemic; while possibly addressing labour shortages currently materialising in industries experiencing renewed demand. Tentative simulations of relaxing product market regulations when industry-demand is booming suggest relevant job-to-job mobility gains for young people, for instance in the Slovak Republic and Greece (Figure 10).

Key findings on wage bargaining settings, labour tax wedges and low-pay are:³²

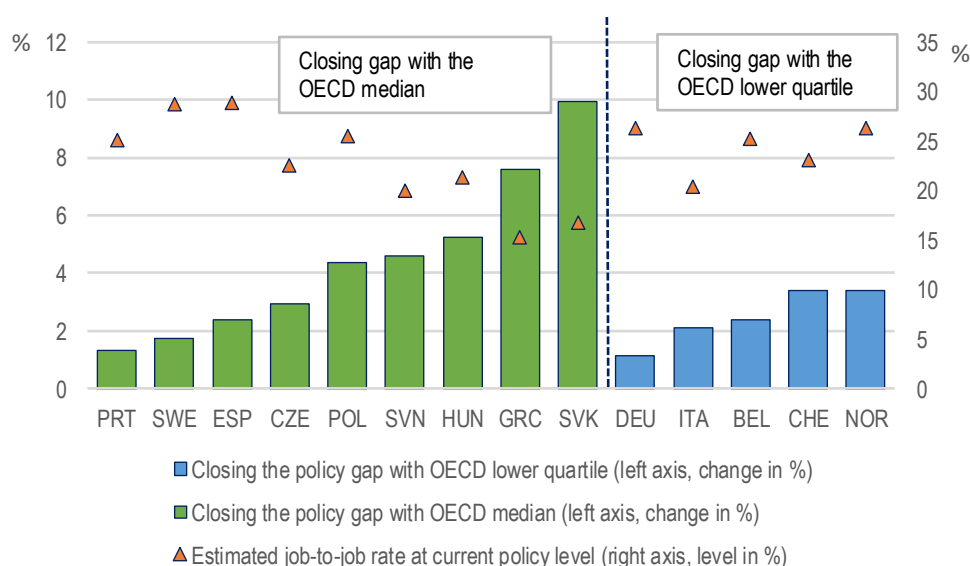
- Highly centralised bargaining systems are associated with lower job-to-job transitions across all socio-economic groups, with stronger effects for low-educated workers and for young people.
- Higher levels of average and marginal labour tax wedges, both at average wages and at 67% of average wages, are found to depress job-to-job mobility for the majority of socio-economic groups and in particular for the low-skilled and young people.

The propensity to change job is lower in countries where higher shares of workers are on low-pay, this effect being stronger among low-educated workers and young people.

³² The results on labour taxes are robust to estimating jointly the effects of average and marginal tax wedges.

Figure 10. Easing product market regulations

Effects on young people's job-to-job transitions in industries experiencing demand expansions



Note: This simulation is based on estimates of interaction effects between industry demand conditions (proxied by the output growth gap) and policies; see results in Table 5. Given the indirect nature of estimated effects, this illustrative exercise is based on comparing industry-level hiring transitions at unchanged relative to changed policy settings for given demand conditions. Such conditions are assumed as expansionary, defined as the average of industry output growth gap values above the 75% quartile of the positive output gap distribution. The policy indicator is the overall product market regulation indicator.

Source: OECD calculations, see Annex for data sources.

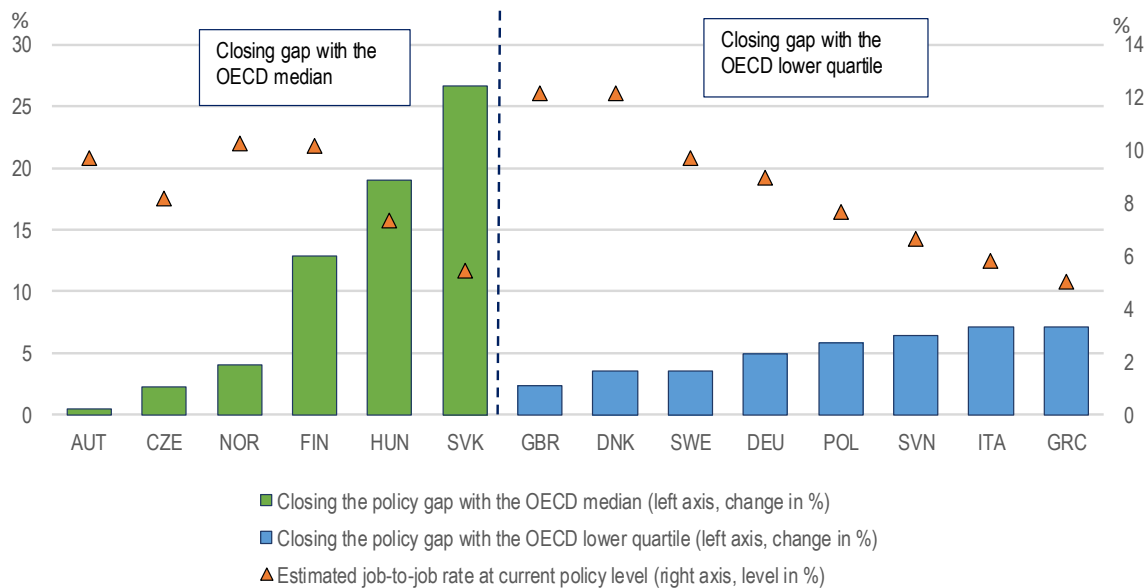
The analysis of policy support for families delivers relevant insights:

- Parental leave policies play a significant role: longer maternity leave is found to weakly reduce job-to-job transitions for men, while longer paternity leave is found to strongly help job-to-job transitions for women. A stronger result is found for the difference between the length of maternity and paternity leave: the higher this difference, the lower job-to-job transitions in the working-age population and among women.
- Childcare support policies are found to have a relatively weak impact on job-to-job transitions, in particular the effects of childcare benefits are not statistically significant. One relevant exception is the share of children aged 0-2 enrolled in formal childcare and pre-school, which is positively associated with job-to-job transitions among women – a result driven by the low-skilled.

Reforms to parental leave may contribute to helping women moving between jobs and climbing the job ladder (see evidence in (Causa, Luu and Abendschein, 2021^[20]) showing that women could benefit disproportionately from wage gains associated with job mobility), provided firms are able to offer better pay and working conditions. This would help addressing current labour shortages, not least in contact-intensive female-dominated activities such as nursing and hospitality. Tentative simulations of a narrowing of the length of parental leave between mothers and fathers (Figure 11) suggest relevant job-to-job mobility gains for women in countries where such mobility is relatively low, and/ or where paternity leave is substantively shorter than maternity such as in the Slovak Republic and Hungary.

Figure 11. Reducing the gender gap in parental leave

Effects on job-to-job transitions for women



Note: Difference between length of paid maternity and paternity leave in weeks.

Source: OECD calculations, see Annex for data sources.

Housing policies, geographical mobility and international migration are also associated with job-mobility across countries:

- Strict rent control is associated with lower job-to-job transitions, especially among young people. More protective tenure security also reduces job-to-job transitions, for low-educated workers, youth and women. Social spending on housing exhibits a negative link with job-to-job mobility.
- Countries where the population is more internally mobile display higher levels of job-to-job mobility, a result that is highly significant across all socio-economic groups. Finally, countries that receive more inflows of international migrants exhibit significantly more job-to-job mobility, especially among young people and low-educated workers.

Box 2. From cross-country estimates to country-specific action: recent policy actions to spur hiring dynamics

OECD governments have provided unprecedented policy support to workers and firms in order to minimise labour market disruptions during the COVID-19 crisis (OECD, 2021^[58]). European countries prioritised policies to preserve jobs through various forms of job retention schemes, which was successful to avoid a sharp rise in unemployment. In the context of the ongoing labour market recovery, the policy focus is shifting from job retention to job reallocation, in order to help workers transitioning from declining to expanding activities and jobs.

Active labour market policies are instrumental to achieve this goal, as supported by the empirical findings of this paper. Such policies have been swiftly implemented and revamped in many OECD countries, often with a specific focus on vulnerable groups such as young people and low-skilled workers (OECD, 2021^[31]). Policy interventions in this area include training programmes, support for apprenticeship schemes and targeted hiring subsidies.

France introduced the plan “une jeune, une solution” (“one young, one solution”), a EUR 6.5 billion package to help young people accessing the labour market and seizing job opportunities. This includes assistance and support for companies

that recruit apprentices and training to prepare young workers for future jobs and skill needs (OECD, 2021^[67]).

In Germany, the plan “Ausbildungsplätze sichern” (“securing training places”) similarly aims at supporting young people at the beginning of their careers. An envelope of EUR 500 million provides incentives for SMEs to expand their supply of training. This includes premiums for companies that preserve or increase the number of available training places, and for solvent firms that hire apprentices from insolvent ones under the “Übernahmeprämie” plan (“bonus for taking on apprentices”) (German Council of Economic Experts, 2021^[68]).

The Swiss government launched various policy measures to help connecting young people and the unemployed with available jobs. This includes stepping-up apprenticeships through the “apprenticeships COVID-19 programme”, the development of online job market platforms to offer targeted support for career mentoring; and the provision of new training opportunities in sectors particularly hit by the crisis, (OECD, 2022^[69]).

In Belgium, dismissed workers are provided with additional trainings for re-skilling or upskilling, funded by social security contributions. Swift re-employment in response to layoffs is encouraged by diverting a fraction of the severance pay to subsidise wages at the new job (OECD, 2022^[70]).

Under the newly introduced “Incentive ACTIVAR.PT” programme, Portugal provides funding to employers that hire unemployed workers under the obligation of offering them professional training (Eurofound, 2020^[71]).

Comparable hiring support measures have taken the form of tax incentives and waivers to social security contributions. Italy has been waiving employers’ social security contributions for different types of contracts, targeting different socio-economic groups. Newly created permanent jobs have been fully exempted from social security contributions for a period of six months (OECD, 2021^[31]). Firms hiring female and young worker under the age of 35 also benefit from these exemptions (with a ceiling up to EUR 6000 per year), as well as firms hiring workers in disadvantaged regions of the South. The transition of inactive mothers back into employment as well as the conversion of temporary to permanent contracts is also a subject of this targeted support (Ministry of Economic Affairs and Finance, 2021^[72]).

In Greece, the government has been providing public funding to cover the full set of employees and employers social security obligations during a period of six months, in addition to a subsidy of EUR 200 per unemployed hire (Eurofound, 2020^[73]).

In Sweden, a large scale labour market reform in phase of implementation in 2022 is likely to support job mobility. The reform is based on three pillars aimed at promoting more flexible working arrangements and stepping-up support for job seekers and job movers: 1) Employment protection legislation is loosened, facilitating separations for employers; but at the same time, employees are offered more job security, e.g. some type of temporary contracts are converted into permanent ones after 12 instead of 24 months. 2) Re-training and up-skilling of workers is supported by means of a new study aid that covers up to 80% of previous wages for a duration of one year. 3) A new publicly-funded transition service provides additional support for workers that move from one job to another and who have not yet been covered by similar collective agreements (OECD, 2021^[74]).

The Spanish government has been supporting employment in SMEs by temporarily exempting them from social security contributions. More recently, to encourage the reinstatement of workers under short-time works schemes, Spanish firms have been granted social security cuts (OECD, 2021^[75]), (International Social Security Association, 2020^[76]).

Belgium has also introduced support measures to encourage employment among low-skilled workers by reducing social security contributions (OECD, 2022^[70]).

Structural long-term oriented reforms to personal income taxes can also be instrumental to support the labour market recovery in the current context, especially if targeted at socio-economic groups with low labour market attachment and

high labour supply elasticity, as also supported by the empirical evidence in this paper. With this rationale, Austria decided to bring one year forward, in July 2021 instead of previously- planned 2022, a reduction of personal income taxes from 25% to 20% for low-income earners (OECD, 2021^[77]).

Wrapping-up the findings and some policy considerations on synergies, trade-offs and political economy obstacles

This paper provides new evidence on structural policies and job transitions. The analysis suggests that many policies can influence individuals' ability to find new work. These include labour market and wage-bargaining institutions, taxes and transfers, product market regulations, and housing policies. Even though the literature is never fully comparable due to differences in analytical approach, country and time coverage, etc.,³³ a number of policy findings in this paper are in line with previous evidence in this area. Such is the case of the negative effects of job protection and of occupational entry regulations on job-to-job mobility, in line with (Bassanini and Garnero, 2013^[23]), (Bassanini et al., 2010^[40]), and (Hermansen, 2019^[34]), respectively, of the negative effects of labour taxes and labour costs on jobless-to-job mobility, in line with (Andrews and Saia, 2017^[29]) and (Cournède, Denk and Garda, 2016^[37]), and on the positive effects of active labour market policies on re-employment prospects of displaced workers, in line with (Andrews and Saia, 2017^[29]) and (Escudero, 2018^[24]). The findings on wage bargainings are consistent with recent work on wage premia documenting that the pass-through from firm-productivity to wage, and therefore wage dispersion, is lower in countries characterised by highly centralised bargaining systems and higher minimum-to-median wages (OECD, 2021^[16]). At the same time, the finding that the incidence of low-pay may dissuade job mobility and transitions from unemployment to job does point to the role of unions and that of possible wage floors in encouraging decent pay and protecting workers' bargaining power at the bottom of the distribution (see Chapter 4 in (OECD, 2019^[57])). Finally, the positive association between higher inflows of international migrants and job-to-job mobility corroborates papers documenting that migrants are significantly more mobile than natives and that they help equilibrate local labour markets in response to shocks ((Cadena and Kovak, 2013^[78]), (Borjas, 2001^[43])).

A number of policy findings are new to the literature on hirings, though they are consistent with theoretical priors and previous papers on labour market dynamism and mobility. Such is the case of: the strong and significant counter-cyclical effects of active labour market policies on unemployment-to-job transitions (see (OECD, 2021^[18]) in the context of the COVID-19 crisis and (Rawdanowicz et al., 2021^[79]) on business cycle contingent effects); the significant effects of housing institutions, in line with findings on spatial mobility (see e.g. (Causa, Abendschein and Cavalleri, 2021^[35]) and (Causa and Pichelmann, 2020^[41]); the significant effects of parental leave policies on hiring transitions (e.g. (Byker, 2016^[80]), (Bana, Bedard and Rossin-Slater, 2020^[81])); the effects of policy barriers to business entry, in particular in the area of services, which are found to obstacle the efficient allocation of workers (e.g. (Calvino, Criscuolo and Verlhac, 2020^[36])). In addition, the granular approach by socio-economic group is new and delivers some evidence on the heterogeneous effects of policies, with strong findings on low-skilled workers and youth, which are key policy target groups.

This paper contributes to understanding how policies influence hiring transitions, which is relevant in the current context of an ongoing yet unbalanced labour market recovery, severe labour shortages, hence possible mismatches between job requirements and workers' qualifications; and deep structural transformations associated with the transition to a low-carbon and digital economy. This material can help countries building their own policy agenda to achieve short and medium-term objectives such as enhancing a smooth and inclusive recovery while helping people and firms navigating the transition in the medium-term. Strategies will vary according to specific context, challenges and social preferences. In order to inform the debate and guide the policy making process, it may be useful to assess the various empirical

³³ See Annex for a review of the literature on the policy drivers of labour market transitions.

findings in the light of different policy objectives and implementation obstacles. One simple guiding principle would be to prioritise synergies while minimising or addressing possible trade-offs and political oppositions. This leads to the following broad policy considerations:

- Policies that actively support jobseekers underpin both labour market reallocation and inclusiveness. Effective public employment services can help the unemployed in vulnerable socio-economic groups to find a suitable job more quickly. Training and requalification programmes are needed to help mobility from declining to expanding industries and occupations. This is essential to support workers' transitions out of carbon-intensive activities. Active labour market policies need being complemented with adequate income support, especially during economic downturns when labour demand is weak. Work incentives should be preserved when labour demand is strong: tightening access to unemployment benefits or reducing their generosity may encourage transitions from unemployment-to-job during good times with strong labour demand.

Reforms in the area of unemployment benefits raise trade-offs: accelerating the return to work may compromise job quality and the matching between workers and jobs, and cutting benefits reduces income adequacy among the unemployed. Whether the generosity or design of unemployment benefits is an obstacle to move from unemployment to job and thus the need and nature of possible policy changes depend on country-specific context. Still, based on the findings in this paper, a few general principles can help address potential trade-offs: i) designing counter-cyclical unemployment benefits, as disincentive effects are not binding when demand is weak while income adequacy issues become binding for jobseekers; and ii) designing progressive unemployment benefits, with replacement rates declining across the wage distribution.

A well-designed combination of effective activation alongside generous and conditional income support for jobseekers can encourage labour market dynamism and inclusiveness. This approach, followed by Nordic countries under the so-called “flexicurity model”, allows to achieve risk-taking along with income security, hence to facilitate labour market transitions, increasing their efficiency and reducing their possible costs.

- Support for families is key for growth and fairness. Measures that help mothers—to access work, maintain their jobs and progress within careers—are particularly important. Such policies reduce the loss of opportunity (the so called ‘gender penalty’) that female caregivers often suffer (Ciminelli, Schweltnus and Stadler, 2021^[59]). One new relevant finding in this paper is the potential role of parental leave policies: while the length of mothers’ and fathers’ parental leave has ambiguous effects, the difference in length between mothers’ and fathers’ is detrimental to jobless-to-job and job-to-job transitions. Reforms in this area, alongside adequate and well-targeted childcare support, are part of “win-win” strategies to maximise synergies across various policy objectives (Eckhoff Andresen and Havnes, 2019^[44]).
- Reducing labour taxes at the bottom of the distribution can also achieve efficiency and distributional objectives, especially in countries where the cost of labour and unemployment or informality are relatively high. The evidence in this paper further suggests that reforms in this area can help low-skilled workers and youth accessing jobs. Shifting tax bases from labour to property, for instance inherited property, can offset the fiscal cost while enhancing equality of opportunities, tax efficiency and progressivity (Brys et al., 2016^[82]).
- Reforms to restore business dynamism are needed to raise productivity growth and technological diffusion (Berlingieri et al., 2020^[83]). The findings in this paper strongly suggest that more business dynamism goes hand-in-hand with more labour market dynamism, in line with (Calvino, Criscuolo and Verlhac, 2020^[36]).³⁴ Removing barriers to business entry and in particular occupational entry regulations in services can enhance efficiency in labour reallocation and inclusiveness, by

³⁴ See comprehensive materials on business dynamism here [MultiProd: Uncovering the micro drivers of aggregate productivity - OECD](#).

removing obstacles to workers' transitions into new jobs. Progress in this area will help labour market adaptation to structural changes e.g. green and digital transitions. Reforms in this area can be difficult because they are likely to be opposed by workers and constituencies losing some of their privileges, yet recent reform experiences can provide some guidance on implementation strategies.³⁵

- Addressing labour market dualism can boost both productivity and inclusiveness, by reducing gaps in access to quality jobs and to adequate social protection, not least in a context of rising digitalisation and the expansion of the “gig” economy. Progress in this area requires a wide range of policies. Among those, one possible reform avenue, based on the findings in this paper, is reducing excessive job protection on regular or open-ended contracts. This reform would encourage job-to-job mobility and the efficiency in labour reallocation, and labour market inclusiveness by spurring access to quality jobs for e.g. youth and the low-skilled. Reforms in this area raise some issues: they are unpopular, as affected workers risk losing some job security, they are likely to be contractionary in the short-run, especially in bad times. The current context may not seem appropriate for engaging in job protection reforms, though situations vary on a country-by-country basis. Policy design and timing is thus particularly important in this area (OECD, 2016^[84]).
- More decentralised wage bargaining may encourage workers' transitions into new jobs and their responsiveness to labour market shocks. In addition, countries' experience suggest that allowing firms to adapt wages and working conditions to their individual situation can limit any short-term job losses resulting from the relaxation of job protection on regular contracts (OECD, 2016^[84]). However, reforms in this area raise trade-offs, as they may contribute to higher wage dispersion and lower workers' bargaining power. This is all the more relevant in a context where pre-COVID-19 evidence points to the existence of monopsony power in certain labour markets, with detrimental effects for wages, job quality and working conditions (OECD, 2021^[16]). At the current juncture, the finding that higher incidence of low-pay is associated with lower job-to-job and jobless-to-job mobility does corroborate the idea that higher pay and better working conditions are not only key for workers' well-being but also for efficiency considerations, in particular for addressing ongoing labour shortages; for example in traditionally female-dominated low-paid activities in the health and hospitality sectors. The design of wage setting institutions depends on country-specific context and preferences, yet it should strike a balance between encouraging labour market dynamism and efficiency while protecting workers bargaining power.
- Removing policy barriers to geographical mobility can help the efficient reallocation of labour and inclusiveness, for instance by making it easier for people to move towards better job opportunities. The results in this paper suggest that some of these policy barriers stem from the housing market, in line with recent work on housing and spatial mobility in the broader OECD Housing work (OECD, 2021^[85]). Too stringent rent control may discourage labour market transitions among renters, and it can also contribute to housing supply rigidity and thus soaring house prices in high-demand areas, in turn creating additional obstacles to mobility. Social support for housing is needed, both cash and in-kind, to ensure affordability and protect most vulnerable groups from hardship. At the same time, eligibility rules, for instance on access to social housing, must support workers' transitions and minimise risks of “lock-in” effects. Overall, policy reforms in this area are challenging and require ensuring that all people have access to decent, stable and affordable housing, yet without undermining labour and housing market efficiency.
- The expansion of teleworking in a context of rising digitalisation, a trend accelerated by the COVID-19 crisis, may weaken the link between workers' and jobs' location, hence reduce the need to

³⁵ See [Going for Growth - OECD](#) for a long tradition of assessing business-related reforms on a country-by-country basis and see incipient discussions on specific service regulations in [Workshop on Regulatory Barriers to Competition in Professional Services - OECD](#).

relocate for finding or changing job. Preliminary results in this paper suggest that job mobility, transitions out of unemployment and from inactivity to job are higher in countries where teleworking is more widespread. This suggests that flexibility in working arrangements may contribute to labour market dynamism, fluidity and reallocations. However, such effects are highly heterogeneous across socio-economic groups: the benefits of teleworking increase with workers' skills, while being statistically insignificant for the low-skilled. This result may in part reflect low-skilled workers' sorting in industries, jobs and occupation where teleworking is not possible. Yet overall it also suggests that reaping the benefits from digitalisation and making it more inclusive requires policies to foster digital skills and infrastructure for workers, firms and territories lagging-behind the digital transformation (OECD, 2021^[86]).

- The current results on international migration tend to suggest that openness to foreign inflows can support labour market dynamism, especially in the current context of labour shortages and the COVID-19 related sharp decline in migration flows. Reforms in this area must focus on structural obstacles to migrant integration with co-ordinated actions across policy domains, such as health, labour, education, and housing (OECD, 2021^[87]). Better communication on the costs and benefits associated with well-managed international migration in the current context of labour shortages and ageing can also help correcting disinformation and reducing political oppositions.

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Annex A. Getting on the job ladder: the policy drivers of hiring transitions.

Data sources and definitions

Hiring transitions are constructed based on individual-level data from the European Labour Force Survey³⁶ (EU-LFS). The survey contains information about individual labour market status in the current year and retrospectively in the previous year, along with comprehensive socio-economic and work-related characteristics. Harmonised hiring transitions are estimated for 19 OECD countries, selected on the basis of data availability. Table documents the country and time period coverage.

Table A1. Country and time coverage

Country sample	Time coverage
Austria	2002-2019
Belgium	2000-2019
Czech Republic	2000-2019
Denmark	2000-2019
Finland	2000-2019
France	2000-2019
Germany	2000-2019
Greece	2000-2019
Hungary	2000-2019
Italy	2000-2019
Norway	2000-2018
Poland	2001-2019
Portugal	2000-2019
Slovak Republic	2001-2019
Slovenia	2000-2019
Spain	2000-2019
Sweden	2000-2019
Switzerland	2010-2019
United Kingdom	2000-2019

Source: European Labour Force Survey.

Hiring transitions are calculated for the working-age population and for various socio-economic groups, based on age, gender and educational attainment. The data allow distinguishing job-to-job transitions both within and between industries as well transitions both in open-ended and fixed-term contracts (only for dependent employees).

Hiring transitions are calculated by industry based on the 1-digit level NACE classification documented in Table . This classification accounts for the shift from NACE rev. 1.1 to NACE

³⁶ See Eurostat annual quality report (<https://ec.europa.eu/eurostat/web/lfs/publications/quality-reporting>) for the description and assessment on the representativeness of the data.

rev. 2 in EU-LFS data from 2008 onwards. The mapping between NACE rev. 1.1 and rev. 2 is documented in Table .³⁷

Table A2. Industry classification

Section	Description
A	Agriculture, forestry and fishing
B	Mining and quarrying
C	Manufacturing
D	Electricity, gas, steam, air conditioning; Water supply, sewerage, waste management and remediation activities
E	Construction
F	Wholesale and retail trade; Repair of motor vehicles and motorcycles
G	Accommodation and food service activities
H	Transportation and storage; Information and communication
I	Financial and insurance activities
J	Real estate activities; Professional, scientific and technical activities; Administrative and support service activities
K	Public administration and defence; compulsory social security
L	Education
M	Human health and social work activities
N	Arts, entertainment and recreation; Other service activities

Note: As standard in the literature, NACE sections “Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use” and “Activities of extraterritorial organisations and bodies” are excluded.

Source : EU Labour Force Survey Database User Guide.

Hiring transitions are defined by comparing individual working status at two points in time. The EU-LFS data provides annual information on whether individuals are working, unemployed or economically inactive during the survey period and, retrospectively, one year before the survey³⁸. Hiring transitions are thus defined on a yearly basis.³⁹

³⁷ NACE rev 1.1 has 17 sections and NACE rev. 2 has 21 sections.

³⁸ The variables containing the current and retrospective information on worker labour market status are MAINSTAT and WSTAT1Y, respectively. The variable ILOSTAT is used as an alternative when MAINSTAT is not available. The disadvantage of ILOSTAT is that it does not allow distinguishing the nature of inactivity (i.e. retirement, permanently disabled, fulfilling domestic tasks, study/training).

³⁹ Due to data limitations, any transitions occurring between the survey dates are not captured. For example, EU-LFS data do not allow to identify if a worker who switched employer between the considered year and the previous year experienced a short spell of unemployment during the year. This limitation likely underestimates the degree of labour market mobility, especially for those individuals who often make transitions in and out of the labour market (e.g. temporary workers). At the same time, this allows for netting out seasonally transitions and obtain a more “structural” assessment of labour market transitions.

Table A3: Mapping between NACE rev. 1.1 and NACE rev.2 classifications

NACE Rev 1.1		NACE Rev. 2	
Section	Description	Section	Description
A	Agriculture, hunting and forestry	A	Agriculture, forestry and fishing
B	Fishing		
C	Mining and quarrying	B	Mining and quarrying
D	Manufacturing	C	Manufacturing
E	Electricity, gas and water supply	D	Electricity, gas, steam and air conditioning supply
		E	Water supply; sewerage, waste management and remediation activities
F	Construction	F	Construction
G	Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	G	Wholesale and retail trade; repair of motor vehicles and motorcycles
H	Hotels and restaurants	I	Accommodation and food service activities
I	Transport, storage and communications	H	Transportation and storage
		J	Information and communication
J	Financial intermediation	K	Financial and insurance activities
K	Real estate, renting and business activities	L	Real estate activities
		M	Professional, scientific and technical activities
		N	Administrative and support service activities
L	Public administration and defence; compulsory social security	O	Public administration and defence; compulsory social security
M	Education	P	Education
N	Health and social work	Q	Human health and social work activities
O	Other community, social and personal services activities	R	Arts, entertainment and recreation
		S	Other service activities

Note: As standard in the literature, NACE sections “Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use” and “Activities of extraterritorial organisations and bodies” are excluded.

Source : European Commission Manuals and Guidelines.

More specifically, hiring transitions are estimated as follows:

Job-to-job (or, equivalently, employer-to-employer) hirings: job-to-job transitions refer to individuals who were employed both in the current and previous year, and who have been with the current employer/job less than 12 months. Job-to-job transitions can be further decomposed into transitions between jobs in the same industry and in a different industry. When relevant, the paper distinguishes between job-to-job transitions into permanent (or open-ended) and temporary (of fixed-term) contracts.

Hirings from unemployment: hirings from unemployment refer to individuals who were employed in the considered year and unemployed in the previous year. When relevant, the paper distinguishes between unemployment-to-job transitions into permanent (or open-ended) and temporary (of fixed-term) contracts.

Hirings from inactivity: hirings from inactivity refer to individuals who were employed in the considered year and inactive in the previous year. In this paper, the focus is on inactivity due to carrying domestic tasks (for women) and inactivity due to education or study (for young people). The other inactivity categories are disability and retirement, which are outside the scope of this paper.

Weight adjustment

Several adjustments are required to compute representative aggregated transition rates based on microdata. These adjustments are standard in the literature (see, e.g., Annex of Chapter 3 in (IMF, 2021_[14])).

The number of observations with incomplete or missing information varies across countries and years. This information loss may reduce statistical power, potentially resulting in biased labour market transitions. Sampling weights (i.e. individual weights provided in the microdata) are thus adjusted according to the following steps:

1. Individual observations are removed if data on a country, region or year is missing; and when data on industry of work is missing for individuals declaring to work in the current previous year.
2. A “total weight” is derived by summing the individual weights for each country-year cell. The analysis is then based on adjusted weights obtained by rescaling individual weights by the “total weight”. By definition, the adjusted individual weights sum up to one at the country-year level.

Aggregation from individual transitions

Labour market transitions at the country-region-industry-year level are derived by aggregating individual transition dummies (i.e. 1 if the individual changes labour market status or job, 0 otherwise), with the adjusted yearly weighting factor. For transitions from unemployment or inactivity to job, the industry refers to the one where the individual is being hired (destination). For job-to-job transitions, the industry refers to the one from where the employed individual is moving out (origin), unless otherwise stated.

Following the approach developed by (Ward-Warmedinger and Macchiarelli, 2014^[21]) and (Monastiriotis, Macchiarelli and Lampropoulou, 2019^[22]), hiring transition *probabilities* are computed by expressing the underlying hiring transitions relative to the population base in the initial working status, with both nominator and denominator defined at the country-region-industry-year level. In formula, the hiring transition *probability* from status *j* to status *i* between the period *t-1* and *t* is derived as follows:

$$p^{ij} = \Pr(S_t = i | S_{t-1} = j) = \frac{\sum N(S_t = i, S_{t-1} = j)}{\sum N(S_{t-1} = j)}$$

Variables: Definitions and sources

Table A delivers an overview of all variables included in the regression analysis, with information on definitions, country-/time-coverage and sources.

Table A4. Data definitions and sources

Variable	Description	Source	Time coverage	Countries missing
Recession/recovery dummy	Dummy variable indicating recession or recovery periods (and expansion as the omitted category). Recessions are identified as years with negative real GDP growth, recoveries as the year following a recession and subsequent years as long as real GDP growth remains below the historical maximum. Between 2000 and 2018, there are 64 country-year pairs for recessions, 34 country-year pairs for recoveries and 263 country-year pairs for expansions.	IMF World Economic Outlook 2021, Ch3, own computations	2000-2018	-
Regional unemployment gap	Difference between current and average regional unemployment rate over the years 2000-2019 in %.	OECD Regional Database	2001-2018	-
Industry-level output growth gap	Difference between actual and average annual output growth rate in current prices over the years 2000-2019 for each industry according to ISIC rev.4 classification in %.	OECD Annual National Accounts	2000-2018	-
Regional share of long-term unemployment	Share of long-term unemployed (more than 12 months of unemployment) over total unemployment, regional level, in %.	OECD Regional Database	2000-2018	-
Output gap	Country-level output gap in %	OECD Economic Outlook Database	2000-2018	-
Spending on total active labour market policies	Public spending on total active labour market policy in % of GDP over the number of unemployed.	OECD Labour Market Programmes Database	2000-2018	GRC
Spending on active labour market policies, PES and administration	Public spending on public employment services and administration in % of GDP over the number of unemployed.	OECD Labour Market Programmes Database	2000-2018	GRC
Spending on active labour market policies, training	Public spending on training in % of GDP over the number of unemployed.	OECD Labour Market Programmes Database	2000-2018	-
Spending on active labour market policies, apprenticeship	Public spending on special support for apprenticeship in % of GDP over the number of unemployed.	OECD Labour Market Programmes Database	2000-2018	-
Spending on active labour market policies, employment incentives	Public spending on employment incentives in % of GDP over the number of unemployed.	OECD Labour Market Programmes Database	2000-2018	-
Spending on active labour market policies, sheltered and supported employment and rehabilitation	Public spending on sheltered and supported employment and rehabilitation in % of GDP over the number of unemployed.	OECD Labour Market Programmes Database	2000-2018	-
Spending on active labour market policies, direct job creation	Public spending on direct job creation in % of GDP over the number of unemployed.	OECD Labour Market Programmes Database	2000-2018	-

Unemployment benefit replacement rate at 67% of average wage after 2 months /1 year /5 years/average unemployment spell	Measure of the proportion of previous in-work income that is maintained after 2 months/1 year/5 years/average spell of unemployment, formerly earning 67% of the average wage.	OECD Social Protection and Well-being Database	2001-2018	-
Unemployment benefit replacement rate at minimum wage after 2 months /1 year /5 years/average unemployment spell	Measure of the proportion of previous in-work income that is maintained after 2 months/1 year/5 years/average spell of unemployment, formerly earning minimum wage.	OECD Social Protection and Well-being Database	2001-2018	AUT, CHE, DNK, FIN, ITA, NOR, SWE
Job protection on regular contracts, individual dismissals	The OECD indicators of employment protection legislation measure the procedures and costs involved in dismissing individuals and the procedures involved in hiring workers on fixed-term (Version 3).	LFS – Strictness of EPL Database	2008-2018	-
Job protection on regular contracts, individual and collective dismissals	The OECD indicators of employment protection legislation measure the procedures and costs involved in dismissing individuals or groups of workers and the procedures involved in hiring workers on fixed-term contracts (Version 3).	LFS – Strictness of EPL Database	2008-2018	-
Job protection on temporary contracts	The OECD indicators of employment protection legislation measure the procedures and costs involved in dismissing individuals or groups of workers and the procedures involved in hiring workers on temporary work agency contracts (Version 3).	LFS – Strictness of EPL Database	2008-2018	-
Difference between job protection on regular and temporary contracts	Difference between job protection on regular and temporary contracts for individuals (Version 3).	LFS – Strictness of EPL Database	2008-2018	-
Product market regulation, (overall, barriers to entrepreneurship), 1998-2013	Indicators of Product Market Regulation are an internationally comparable set of indicators that measure the degree to which laws and policies promote or inhibit competition in areas of the product and service market where competition is viable. These indicators measure the de jure regulatory environments.	OECD Product Market Regulation Database	2003; 2008; 2013	-
Occupational entry restrictions, overall	Overall indicator of occupational entry restrictions for both personal and professional services.	(Bambalaite, Nicoletti and von Rueden, 2020 ^[88]) Occupational entry regulations and their effects on productivity in services: Firm-level evidence.	2018	CZE, DNK, GRC, NOR, SVK
Occupational entry restrictions, mobility restrictions, personal services	Barriers to labour mobility between jurisdictions concerning personal services such as being a baker, driver or electrician.	(Bambalaite, Nicoletti and von Rueden, 2020 ^[88]) Occupational entry regulations and their effects on productivity in services: Firm-level evidence.	2018	CZE, DNK, GRC, NOR, SVK
Occupational entry restrictions, mobility restrictions, professional services	Barriers to labour mobility between jurisdictions concerning professional services such as being an accountant, lawyer or real-estate agent.	(Bambalaite, Nicoletti and von Rueden, 2020 ^[88]) Occupational entry regulations and their effects on productivity in services: Firm-level evidence.	2018	CZE, DNK, GRC, NOR, SVK

○ Occupational entry restrictions, overall, administrative burdens, personal services	Limitations and procedural hurdles set on obtaining the legal authorisation to practice concerning personal services such as being a baker, driver or electrician.	(Bambalaite, Nicoletti and von Rueden, 2020 ^[88]) Occupational entry regulations and their effects on productivity in services: Firm-level evidence.	2018	CZE, DNK, GRC, NOR, SVK
○ Occupational entry restrictions: administrative burdens, professional services	Limitations and procedural hurdles set on obtaining the legal authorisation to practice concerning professional services such as being an accountant, lawyer or real-estate agent.	(Bambalaite, Nicoletti and von Rueden, 2020 ^[88]). Occupational entry regulations and their effects on productivity in services: Firm-level evidence.	2018	CZE, DNK, GRC, NOR, SVK
○ Collective bargaining decentralisation	Based on OECD taxonomy of collective bargaining regimes. Countries classified as “largely or fully decentralised” are assigned a values of one (“decentralised”), while remaining countries are assigned a value of zero (“centralised”).	OECD, The firm-level link between productivity dispersion and wage inequality: A symptom of low job mobility?, 2021;	2000-2015	-
○ Incidence of low pay	Share of workers earning less than two thirds of median earnings in percent of total workers.	OECD Employment and Labour Market Statistics	2000-2018	ESP, GRC, ITA, NLD, NOR, PRT, SVN, SWE
○ Average tax wedge, (67% of average wage)	Average tax wedge, 67%/ 100% of average wage, single person without children	OECD Going for Growth 2019	2000-2018	-
○ Average tax wedge, (100% of average wage)	Average tax wedge, 67%/ 100% of average wage, couple with two children	OECD Going for Growth 2019	2000-2018	-
○ Marginal tax wedge, (67%/100% of average wage)	Average tax wedge, 67%/ 100% of average wage, single person without children.	OECD Going for Growth 2019	2000-2018	-
○ Rent control	Data from 2017 OECD Questionnaire on Affordable and Social Housing (QuASH) that is extrapolated using data from the DIW (Deutsches Institut für Wirtschaftsforschung) rental market regulation index. The indicator accounts for the number of regulations that restrict rents with respect to real rent freeze, nominal rent freeze, rent level control, intertenancy control and other specific rent controls. The values range between 0 and 1 with larger values indicating stronger rental control.	2017 OECD Questionnaire on Affordable and Social Housing (QuASH), DIW (Deutsches Institut für Wirtschaftsforschung) Rental Market Regulation Index	2000-2017	GRC, HUN
○ Landlord-tenant regulation	Measure the strictness of landlord-tenant regulations concerning tenure security. Higher values correspond to stricter regulations.	DIW (Deutsches Institut für Wirtschaftsforschung) Rental Market Regulation Index	2000-2017	HUN
○ Social spending on housing	Social expenditure on housing in % of GDP.	OECD Social Expenditure Database	2000-2016	-
Country-level inter-regional in-migration	Sum of total number of regional in-migrants over total population in the previous year.	OECD Regional Database	2000-2018	GRC, PRT
International migration	Number of international in-migrants over total population in the previous year	OECD International Migration Database	2001-2018	-

Childcare benefits: couple with two children; earnings at 67% of average wage and minimum wage	Childcare benefits in percent of average wage. Social assistance and housing benefits included. Couple with two children, one adult with earnings at 67% of average wage, partner with earnings at minimum wage.	OECD Tax-Benefits Indicator Database	2004, 2008, 2012, 2015, 2018	AUT, CHE, DNK, FIN, ITA, NOR, SWE
Childcare benefits (single with two children; earning at minimum wage)	Childcare benefits in percent of average wage. Social assistance and housing benefits included. Single parent with two children and earnings at minimum wage.	OECD Tax-Benefits Indicator Database	2004, 2008, 2012, 2015, 2018	AUT, CHE, DNK, FIN, ITA, NOR, SWE
Proportion of children aged 0-2 enrolled in formal childcare and pre-school	Proportion of children aged 0-2 enrolled in formal childcare and pre-school in %	OECD Family Database	2005-2017	-
Length of paid maternity and parental leave	Length of paid maternity and parental leave available to mothers in weeks	OECD Family Database	2000-2018	-
Length of paid paternity and parental leave	Length of paid paternity and parental leave available to fathers in weeks	OECD Family Database	2000-2018	-
Difference between length of paid maternity and paternity leave	Difference between length of paid maternity and paternity leave in weeks	OECD Family Database	2000-2018	-

Robustness analysis

This section delivers a robustness analysis of the policy regression results, for working-age population estimates. Three types of robustness tests are conducted:

1. Replacing the recession/recoveries dummy with the output gap as macroeconomic cycle control⁴⁰
2. Performing non-linear regressions
3. Performing multivariate policy regressions

The non-linear regression framework is based on the idea that transition probabilities are fractional variables (see, for example, (Wooldridge, 2001_[89])). Following (Papke and Wooldridge, 1996_[90]), a quasi-maximum likelihood estimator (QMLE) is used as an alternative to the linear regression model. In formula, the following transformed generalized linear model is estimated:

$$E(P_{c,k,m,t}^{ij}) = G(\beta_0 + \beta_1 X_{c,k,m,t} + \beta_2 Z_{c,t}^1 + \beta_3 Z_{c,k,t-1}^2 + \beta_4 Z_{c,m,t-1}^3 + \gamma P_{c,t} + \eta_c + \eta_k + \eta_m + \eta_t + \Pi_{t \geq 2008} \eta_t \eta_m)$$

where G is the inverse-probit function of the independent variables similarly estimated in equation (2) in the main paper.

Table A summarizes the results from robustness tests 1 and 2 on univariate policy scenarios. The vast majority of policy findings are qualitatively unaltered under the two robustness tests.

The third robustness analysis tests a sub-set of policies in a multivariate regression framework, where two, and in a further step three, different policy variables are simultaneously included. Table A summarizes the outcome of this exercise: the overall picture highlights the robustness of the policy results throughout a variety of different specifications.

⁴⁰ Lagged country-level output gap from the OECD Economic Outlook Database.

Table A5. Robustness analysis 1 and 2: alternative macro control and non-linear model

	Job-to-job			Unemployment-to-job		
	Policy result	Robustness 1: Output gap as macro control	Robustness 2: Nonlinear specification	Policy result	Robustness 1: Output gap as macro control	Robustness 2: Nonlinear specification
Policy support for job seekers						
ALMP spending per GDP per unemployed - PES and administration	na	na	na	+	✓	✓
ALMP spending per GDP per unemployed - Training	na	na	na	-	✓	✓
ALMP spending per GDP per unemployed - Apprenticeship	na	na	na	+	✓	✓
ALMP spending per GDP per unemployed - Employment incentives	na	na	na	+	✓	✓
ALMP spending per GDP per unemployed - Sheltered and supported employment and rehabilitation	na	na	na	+	-	-
ALMP spending per GDP per unemployed - Direct job creation	na	na	na	+	✓	✓
ALMP spending per GDP per unemployed - Total active measures	na	na	na	+	✓	✓
Unemployment benefits 67 AW; av unemployment spell	na	na	na	+	-	✓
Unemployment benefits 67 AW; after 2m	na	na	na	+	✓	✓
Unemployment benefits 67 AW; after 1y	na	na	na	+	✓	✓
Unemployment benefits 67 AW; after 5y	na	na	na	+	✓	✓
Unemployment benefits MIN; av unemployment spell	na	na	na	+	✓	✓
Unemployment benefits MIN; after 2m	na	na	na	+	✓	✓
Unemployment benefits MIN; after 1y	na	na	na	+	✓	✓
Unemployment benefits MIN; after 5y	na	na	na	+	-	-
Job protection						
Job protection on regular contracts (individual and collective dismissals);	-	✓	✓	-	✓	✓
Job protection on regular contracts (individual dismissals)	(**)	✓	✓	-	✓	✓
Job protection on temporary contracts	(*)	✓	-	-	✓	✓
Difference between Job protection on regular and temporary contracts	(***)	-	✓	-	-	✓
Wage bargaining settings, labour tax wedges and incidence of low-pay						
Collective bargaining decentralisation	(***)	✓	-	-	-	-
Incidence of low pay	(**)	✓	-	(*)	-	-
Average tax wedge 67% AW	(**)	✓	✓	(***)	✓	✓
Marginal tax wedge 67% AW	(***)	✓	✓	(***)	✓	✓
Average tax wedge 100% AW	(***)	✓	✓	(***)	✓	✓
Marginal tax wedge 100% AW	(***)	✓	✓	(***)	✓	✓
Housing policies and geographical mobility						
Rent control	(***)	✓	✓	(***)	✓	✓
Landlord-tenant regulation		✓	✓	(**)	-	✓
Social spending on housing	(***)	✓	✓	(*)	-	✓
Country-level inter-regional in-migration rate	(***)	✓	✓	(***)	✓	✓
Country-level international in-migration	(***)	✓	✓	(*)	✓	-
Policy support for families						
Childcare benefits: couple (first earner 67% AW, second earner minimum wage)		✓	✓	+	✓	✓
Childcare benefits: lone parent (minimum wage)		✓	✓	(*)	✓	-
Proportion of children aged 0-2 enrolled in formal childcare and pre-school		✓	✓	(***)	✓	✓
Length of paid maternity and parental leave		✓	-	(***)	✓	✓
Length of paid paternity and parental leave		✓	✓		✓	✓
Difference between length of paid maternity and paternity leave	-	-	✓	-	✓	✓

Note: This table evaluates the robustness of policy results on job-to-job and unemployment-to-job transitions regressions for the working-age population. The column "Policy result" reports the sign and significance of the estimated coefficient, as in the paper. "✓" indicates that the sign and significance of the coefficient is robust to changing the regression specification according to two alternative robustness tests, whereas "-" indicates that the result is not robust, i.e. either the sign changes or the coefficient is no longer (in-)significant (at least at the 10% level); "na" indicates that the specification is not considered in the paper (e.g. impact of policy support for jobseekers on job-to-job transitions).

Table A6. Robustness analysis 3: multivariate model

	ALMP - Total active measures	Unemployment benefits 67AW average	Job protection on regular contracts (individual dismissals)							
	Unemployment-to-job	Unemployment-to-job	Job-to-job	Job-to-job: same sector	Job-to-job: other sector	job-to-job: permanent contract	Job-to-job: temporary contract	Unemployment-to-job	Unemployment-to-job: permanent	Unemployment-to-job: temporary
ALMP spending per GDP per unemployed - Total active measures	⁺ (***)	✓ (-)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)
Unemployment benefits 67 AW; average unemployment spell	✓ (-)	- (***)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)
Job protection on regular contracts (individual dismissals)	✓ (✓)	-	- (**)	-	- (***)	- (***)	- (***)	-	- (**)	-
Collective bargaining decentralisation	-	✓ (✓)	✓ (✓)	- (✓)	- (✓)	✓ (✓)	-	✓ (✓)	✓ (✓)	-
Average tax wedge 100% AW	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)
Rent control	✓ (✓)	✓ (-)	✓ (✓)	-	✓ (✓)	✓ (✓)	-	-	✓ (✓)	-
Childcare benefits: couple (first earner 67% AW,	✓ (✓)	-	✓ (✓)	-	✓ (✓)	✓ (✓)	✓ (✓)	-	-	-
Difference between length of paid maternity and paternity leave	✓ (✓)	✓ (-)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (-)

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	Collective bargaining decentralisation		Average tax wedge 100% AW		Rent control		Childcare benefits: couple (first earner 67%AW, second earner minimum wage)		Difference between length of paid maternity and paternity leave	
	Job-to-job	Unemployment-to-job	Job-to-job	Unemployment-to-job	Job-to-job	Unemployment-to-job	Job-to-job	Unemployment-to-job	Job-to-job	Unemployment-to-job
ALMP spending per GDP per unemployed - Total active measures	-	-	✓ (✓)	✓ (-)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)
Unemployment benefits 67 AW; average unemployment spell	✓ (-)	✓ (-)	✓ (✓)	✓ (✓)	✓ (✓)	-	✓ (✓)	✓ (✓)	-	-
Job protection on regular contracts (individual dismissals)	-	✓ (✓)	✓ (✓)	✓ (-)	-	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	-
Collective bargaining decentralisation	⁺ (***)	-	✓ (✓)	✓ (✓)	✓ (✓)	✓ (-)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (-)
Average tax wedge 100% AW	✓ (-)	✓ (✓)	- (***)	- (***)	✓ (✓)	✓ (-)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)
Rent control	-	-	✓ (✓)	✓ (-)	- (***)	- (***)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)
Childcare benefits: couple (first earner 67% AW, second earner minimum wage)	-	✓ (✓)	-	✓ (-)	-	-	-	⁺ (***)	✓ (-)	-
Difference between length of paid maternity and paternity leave	✓ (-)	- (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	✓ (✓)	- (**)	- (***)

Note: This table summarizes the results of multivariate policy regressions that include two or three policy variables simultaneously in order to test the robustness of the univariate policy effects reported in the paper. The exercise is performed for sub-set of eight policy variables. As for the previous robustness analysis, the estimates refer to the working-age population.

How to read: The grey shaded cells report the sign and coefficient of the univariate policy coefficient according to the policy indicated on top of the column. "✓" indicates that the sign and significance of this univariate estimate is robust to the inclusion of a second policy variable (as indicated in the first column, same line). "(✓)" indicates that the coefficient is robust to the inclusion of a third policy variable in at least four out of six specifications, where each of the remaining six policy variables are included as a third policy, one at a time. "-" and "(-)" indicate that results are not robust in the bivariate or trivariate specifications, respectively.

Literature review

Table 7 summarizes the main findings of the literature on the policy drivers of hiring transitions, labour reallocation and more broadly mobility, with an emphasis on the papers using a cross-country approach, to allow comparability with the current paper.

Table 7. Literature review

Reference	Country - Population - Time coverage	Focus	Policy analysis	Data	Econometric /analytical approach	Policy results	Non-policy variables included in empirical model
Andrews, Caldera, 2011	25 countries, 2007	Effect of housing policies on residential mobility	Housing policies	OECD data, EU-SILC data, HILDA, SHP, IMF data	Linear probability model	Positive association between residential mobility and housing supply elasticity as well as access to mortgage debt. Negative association between residential mobility and housing transaction costs, rent control and tenant protection.	Household-level controls including tenure status, age education, employment status, marital status and income
Andrews, Saia, 2017	13 European countries, 1986-2008	Effect of labour and product market policies on labour trajectories of displaced workers	Active labour market policies (ALMPs), unemployment benefits, labour tax wedges	SHARELIFE – the life history module from the Survey of Health, Ageing and Retirement in Europe	Regression analysis	Positive association between ALMPs and re-employment prospects of displaced workers, especially in countries where entry barriers in product markets are low and public sector efficiency is high. Reductions in the labour tax wedge increase the reemployment prospects of displaced workers.	Time FE included. Individual controls including age, sex, relationship status and previous job tenure
Bassanini et al, 2010	24 OECD countries, 2000-2007	Role of labour and product market institutions in shaping cross-country differences in gross worker flows	Employment protection legislation (EPL), unemployment benefits, minimum wage, product market regulation (PMR)	Labour force surveys, OECD STAN, EU-KLEMS, European Community Household Panel	Industry-level diff-in-diff, regression analysis. Worker flows are defined with respect to total employment	Negative association between EPL and job-to-job flows. Positive association between unemployment benefits and labour reallocation.	Industry FE included

Bassanini, Brunello 2011	15 OECD countries, 1995-2002	Effect of regulatory barriers to entry on workplace training	Regulatory barriers to entry industry- specific entry barriers, public ownership, market share of the dominant player(s), vertical integration in network industries and price controls	OECD regulatory database, OECD database on training, OECD STAN Family databases and the 60-industry database of the Groningen Growth and Development Centre	Regression analysis	Positive effect of competition on investments in workplace training.	Countryxyear and industryxyear dummies included. Individual controls including age, education
Bassanini, Garnero, 2012	24 OECD countries, 23 business-sector industries, 1995- 2007	Effect of dismissal regulations on gross worker flows	EPL	LFS, EU-KLEMS, OECD-STAN	Diff-in-diff, regression analysis. Worker flows are defined with respect to total employment	Negative association between EPL and same-industry job-to-job transitions, particularly to permanent jobs. No relation between EPL and other-industry job-to-job or job-to-jobless transitions	Time and industry FE included. Averages over time employed to control for business cycle fluctuations. Country-industry controls including age, education and sex
Boeri, Macis, 2010	48 countries, 1980- 2002	Effect of unemployment benefits on job reallocation	Unemployment benefits	ILO LABORSTA, Social security programs throughout the world	Random growth model	Positive effect of unemployment benefits on job reallocation. Unemployment benefits induce a shift from from low-productivity sectors (agriculture) to services	Country specific time FE included. Control for growth rate of per capita GDP
Causa, Abendschein, Cavalleri, 2021	2000 regions in 30 countries, 2000- 2017	Inter-regional migration, housing and the role of public policies	Housing-related policies, labour market and social protection policies and regulatory policies	OECD Regional database	Regression analysis	Positive association between housing supply elasticity and interregional migration responsiveness to local economic conditions. Negative association between job protection and pass- through elasticity from both regional income and regional unemployment to inter-regional migration. Negative association between spending on ALMPs and migration responsiveness with respect to both regional GDP per capita and regional unemployment.	Time FE included. Controls for lagged GDP per capita and unemployment

						The effect of UBs on migration with respect to regional GDP per capita depends on the duration of the unemployment benefits.	
Causa, Pichelmann, 2020	OECD EU countries, US, Australia, 2012	Individual and policy drivers of residential mobility	Housing related policy and taxes and transfers, labour market policies and social protection, business dynamism and trade exposure	EU-SILC, HILDA, AHS	Regression analysis	Positive association between residential mobility and: housing supply responsiveness, social cash and in-kind spending on housing, cash income support to low-wage jobseekers and minimum income schemes. Negative association between residential mobility and: housing transaction costs, rental regulations and job protection on regular contracts.	Regional FE included. Individual and household-level controls include housing tenure status, age category, education, employment status, household disposable income quintile, gender, migration status, cohabitation status, household size
Cournède, Denk, Garda, 2016	26 advanced countries, 1994-2012 (with gaps)	Effect of flexibility-enhancing reforms on employment instability	Flexibility-enhancing reforms in PMR or EPL	EHCP, EU-SILC, HILDA (2001-12), GSOEP (1994-2012), SHP (1999-2013)	Regression analysis. Worker flows are expressed in terms of transition probability	Positive association between flexibility-enhancing reforms and transitions out of employment for less qualified and low income workers. Positive association between pro-competitive product market regulation and transitions into employment	Time FE included. Control for spending per unemployed as a percentage of GDP per capita. Individual controls include age and its squared value, being head of household, being in a couple, education level and lagged income quartile
Eckhoff, Andresen, Havnes, 2019	Norway, 2002-2008	Effect of childcare for toddlers on the labour supply of mothers and fathers	Childcare subsidies	Administrative registers available from Statistics Norway	Instrumental variable	Positive association between childcare and labour supply of cohabiting mothers, who move towards full time employment. No impact for fathers is detected	Time FE included. Individual controls including age, immigrant status, education, number of children
Escudero, 2018	31 advanced countries, 1985-2010	Effect of ALMPs on labour market outcomes,	ALMPs	Among others: OECD.stat, ILO and national sources,	Regression analysis	Positive effect of ALMPs on (especially) labour market outcomes of the low skilled. Start-up	Year dummies included. Control for real GDP

		especially with respect to low-skilled individuals		Eurostat, Unesco 1997, World bank, WDI database, ICTWSS		incentives and policy clusters deliver strongest effects, both in terms of reducing unemployment and in terms of increasing employment	
Guner, Kaygusuz, Ventura, 2020	US	Macroeconomic effect of transfers to households with children in terms of female labour supply and welfare	Childcare subsidies, childcare credits and child credits	US data	Equilibrium life-cycle model	Positive association between the expansion of conditional transfers and female labour supply, especially at the bottom of the skill distribution. Expanding existing programs generates welfare gains for newborn households, which are largest for less-skilled households	/
Haltiwanger, Scarpetta, Schweiger, 2008	16 industrial, emerging and transition economies, 1990s	Industry and size dimensions of job flows in relation to institutional differences across countries	Regulations on hiring and firing and PMR	Harmonized cross-country firm-level database	Diff-in-diff	Negative association between the stringency of hiring and firing regulations and job turnover.	Industry*size FE included
Hermansen, 2019	US States, 2000	Effect of state-level occupational licensing on job-hire and job-separation rates along with earnings of job-stayers and job-to-job movers	Occupational licensing	National Conference of State Legislatures (NCSL), CareerOneStop (COS) by Department of Labor, Reason Foundation (RF), U.S. Census Bureau (LEHD data)	Regression analysis. Worker flows are defined with respect to total employment	Negative association between more extensive or stricter licensing and job mobility	Time and industry FE included. Control for unemployment rate
IMF, 2021 (World economic outlook)	Sample of Advanced economies, 1990-2020	Unemployment, labour market transitions, and earnings over the business cycle and across demographic groups	Policies aimed to fostering job retention and worker reallocation	EU-LFS, ILO	Individual-level linear probability model	Negative association between job retention policies (e.g. wage subsidies and short-term work schemes) separations. Positive association between worker reallocation policies (e.g. hiring incentives, job search-and-matching assistance, and retraining programs) and job finding and on-the-job occupational switches	Time FE included. Individual-level control including age, gender, marital status, and skill level. Business cycle controls included: output gap or recession/recoveries dummies.

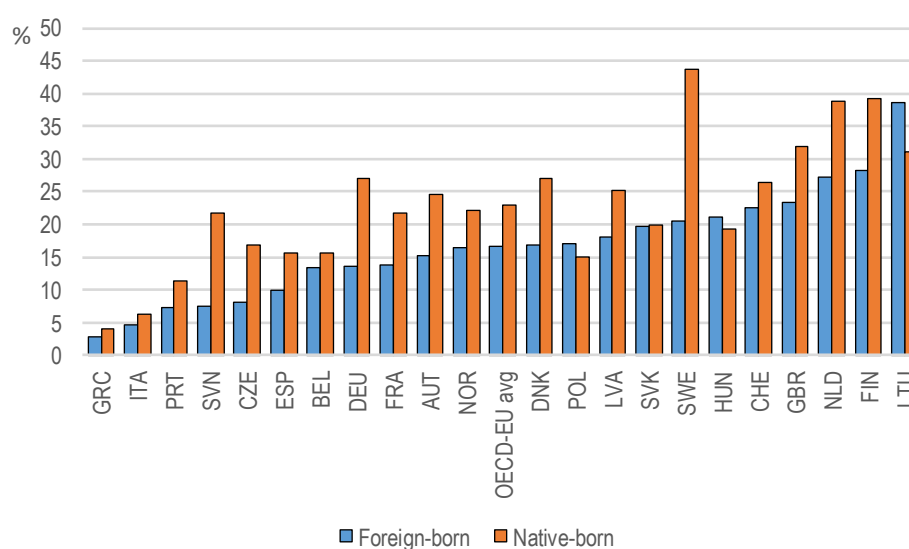
Olivetti, Petrongolo, 2017	30 OECD countries	Effect of parental leave interventions and public spending on early education on female employment, gender gaps in earnings and employment, and fertility	Parental leave and different family policies	LFS, OECD Family Database, OECD Employment Database, OECD Social Expenditure Database, Max Planck Institute	Regression analysis	Negative effect of early childhood spending and in-work benefits on gender disparities. Positive effect of protected parental leave on female and male employment. Negative effect of parental leave on earnings gap. Employment and earning impacts are more beneficial for the less skilled, possibly with a detrimental impact on the earnings of high-skill women.	Time FE included
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Additional material

This section presents additional material to complement the findings from the main paper i.e.: i) some descriptive evidence of hiring differences between natives and foreign-born populations, ii) a granular country-specific picture of hiring dynamics during the COVID-19 crisis and, iii) the full set of policy regression results for all transitions and socio-economic groups.

Figure A.1 illustrates differences in hirings between natives and foreign-born workers, focusing on prime-aged workers to reduce age-related comparability issues.

Figure A.1. Hiring transition probabilities for natives and for foreign-born prime-aged workers, 2019



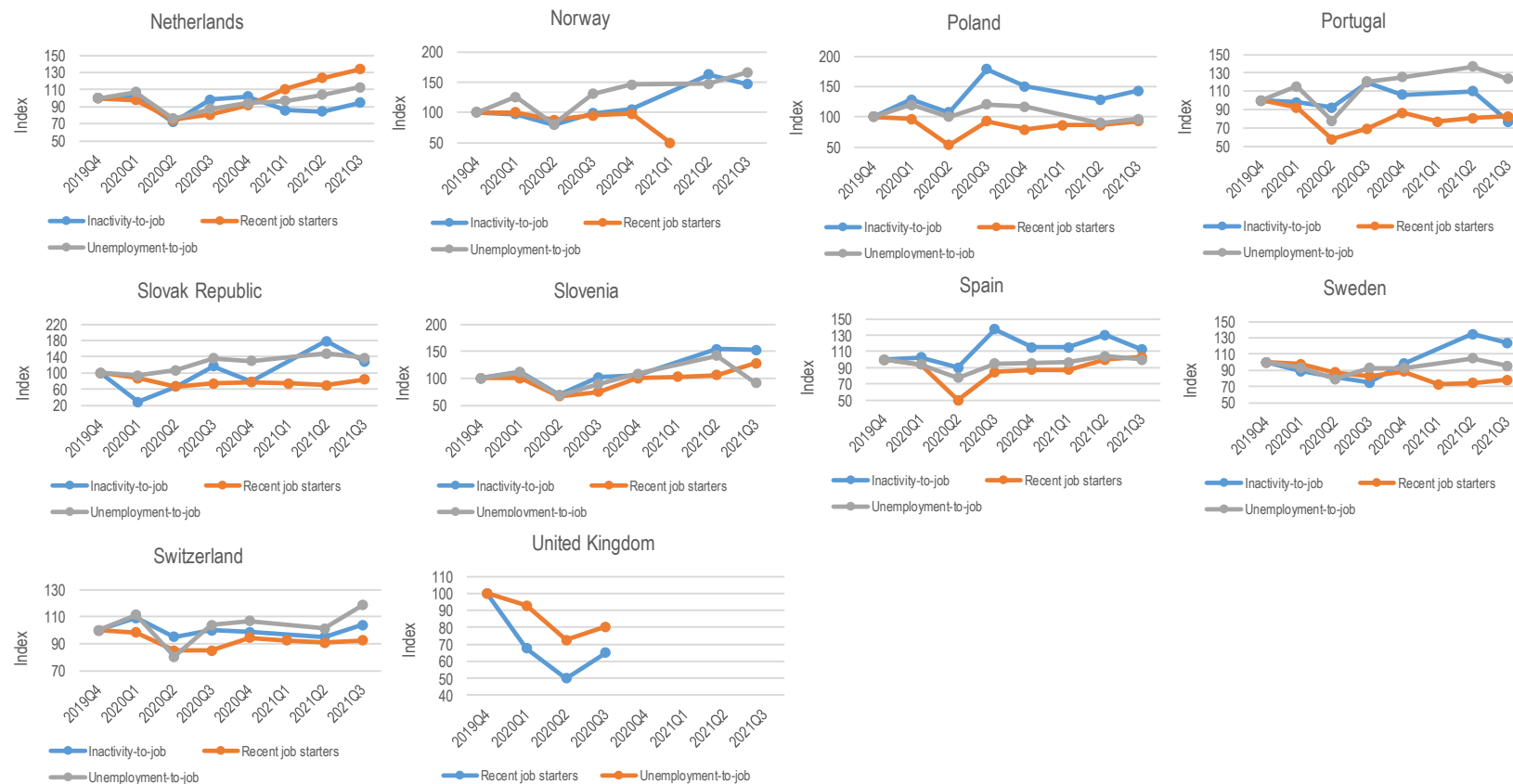
Note: Hiring transition probabilities are computed separately for native-born and foreign-born prime-aged populations (age 25-54). Transitions from unemployment to job are expressed as share of previously unemployed people, while job-to-job transitions are expressed as share of previously employed persons and transitions from inactivity are expressed as share of previously inactive people.

Source: EU-LFS and OECD calculations.

Figure A.2 delivers country-specific profiles of developments in hiring rates since the start of COVID-19 crisis.

Figure A2. Developments in hirings, country profiles (Q42019=100)





Note: Seasonally-adjusted data. Reference quarter Q42019=100. Recent job starters are defined by Eurostat as those persons who have started their employment in the last 3 months before the labour force survey interview.

Source: Eurostat. <https://ec.europa.eu/eurostat/web/experimental-statistics/labour-market-transitions-for-unemployment-to-job> and https://ec.europa.eu/eurostat/databrowser/view/lfsi_sta_q/default/table?lang=en for recent job starters.

Table A8 to Table A13 deliver the full set of results for all transitions and socio-economic groups, by policy area. Additional granular information on country and year coverage of the included policy variables can also be retrieved from Table A4.

Table A8 deliver the full set of results for all transitions and socio-economic groups, by policy area. Additional granular information on country and year coverage of the included policy variables can also be retrieved from Table A4.

Table A8. Regression results: Policy support for jobseekers

Table A8.A. Policy support to jobseekers: main results

<i>ALMP spending per GDP per unemployed</i>	Unemployment to job								Inactivity fulfilling domestic tasks to job	Inactivity study/training to job
	<i>Working age pop.</i>	<i>Low-edu</i>	<i>Med-edu</i>	<i>High-edu</i>	<i>Youth</i>	<i>Prime-aged</i>	<i>Men</i>	<i>Women</i>	<i>Women</i>	<i>Youth</i>
PES and administration	0.42*** (38492)	0.57*** (36854)	0.52*** (38142)	0.13 (37311)	0.52* (26173)	0.53*** (36427)	0.52*** (38586)	0.49*** (37395)	-0.095 (37215)	0.19*** (26252)
Training	-0.094** (42697)	0.053 (40955)	-0.059 (42301)	-0.10 (41282)	-0.079 (28613)	-0.029 (40551)	-0.040 (42790)	0.070** (41394)	0.012 (41214)	0.19*** (28692)
Apprenticeship	2.95*** (41365)	3.14*** (39785)	2.63*** (40972)	2.30** (40020)	3.20*** (27882)	3.58*** (39251)	3.56*** (41459)	2.25*** (40085)	0.97*** (39905)	0.57** (27961)
Employment incentives	0.60*** (43031)	0.78*** (41288)	0.67*** (42635)	0.63*** (41608)	0.98*** (28836)	0.76*** (40889)	0.77*** (43125)	0.65*** (41722)	0.22** (41542)	0.29*** (28915)
Sheltered and supported employment and rehabilitation	0.18* (43310)	0.27** (41561)	0.23* (42911)	0.12 (41878)	0.29 (29023)	0.22* (41162)	0.14 (43404)	0.32** (41991)	0.035 (41811)	0.060** (29102)
Direct job creation	0.19*** (42725)	0.37*** (40981)	0.19*** (42329)	0.15* (41309)	0.33*** (28630)	0.20*** (40578)	0.26*** (42818)	0.17*** (41422)	0.040** (41242)	0.064*** (28709)
Total active measures	0.076*** (38464)	0.17*** (36828)	0.099*** (38114)	0.059 (37284)	0.16*** (26156)	0.12*** (36400)	0.10*** (38558)	0.15*** (37367)	0.023 (37187)	0.094*** (26235)

	Unemployment to job								Inactivity fulfilling domestic tasks to job	Inactivity study/training to job
	Working age pop.	Low-edu	Med-edu	High-edu	Youth	Prime-aged	Men	Women	Women	Youth
UB replacement rates										
100 AW; av unemployment spell	-0.018*** (44430)	-0.016*** (42661)	-0.015*** (44020)	-0.0084 (42994)	-0.023*** (29983)	-0.020*** (42270)	-0.019*** (44524)	-0.0049 (43081)	-0.0015 (42901)	-0.0043** (30062)
100 AW; after 2m	-0.0066 (44430)	-0.0031 (42661)	-0.0020 (44020)	-0.0099 (42994)	-0.000033 (29983)	-0.0069 (42270)	-0.000033 (44524)	-0.0043 (43081)	-0.021*** (42901)	-0.0034 (30062)
100 AW; after 1y	-0.0060*** (44430)	-0.0044** (42661)	-0.0039** (44020)	0.00045 (42994)	-0.0095*** (29983)	-0.0080*** (42270)	-0.0050*** (44524)	-0.0028* (43081)	-0.0053*** (42901)	-0.0024*** (30062)
100 AW; after 5y	-0.016*** (44430)	-0.014*** (42661)	-0.016*** (44020)	-0.011* (42994)	-0.021*** (29983)	-0.016*** (42270)	-0.018*** (44524)	-0.0037 (43081)	0.0033 (42901)	0.00060 (30062)
67 AW; av unemployment spell	-0.018*** (44430)	-0.016*** (42661)	-0.014*** (44020)	-0.0069 (42994)	-0.025*** (29983)	-0.021*** (42270)	-0.019*** (44524)	-0.0049 (43081)	-0.0037 (42901)	-0.0025 (30062)
67 AW; after 2m	-0.024*** (44430)	-0.016*** (42661)	-0.016*** (44020)	-0.022*** (42994)	-0.025*** (29983)	-0.027*** (42270)	-0.017*** (44524)	-0.018*** (43081)	-0.020*** (42901)	-0.0060*** (30062)
67 AW; after 1y	-0.0061*** (44430)	-0.0046** (42661)	-0.0040** (44020)	0.00080 (42994)	-0.010*** (29983)	-0.0077*** (42270)	-0.0054*** (44524)	-0.0028* (43081)	-0.0049*** (42901)	-0.0018*** (30062)
67 AW; after 5y	-0.017*** (44430)	-0.015*** (42661)	-0.016*** (44020)	-0.011 (42994)	-0.021*** (29983)	-0.018*** (42270)	-0.020*** (44524)	-0.0036 (43081)	0.00071 (42901)	0.0021 (30062)
Minimum Wage; av unemployment spell	0.011*** (29963)	0.0027 (28584)	0.011** (29536)	0.018* (29030)	0.0035 (19696)	0.010** (28097)	0.0048 (29957)	0.019*** (28972)	-0.00048 (28645)	-0.0021 (19696)
Minimum Wage; after 2m	0.023*** (29963)	0.026*** (28584)	0.025*** (29536)	0.023*** (29030)	0.028*** (19696)	0.026*** (28097)	0.027*** (29957)	0.022*** (28972)	-0.0016 (28645)	0.0011 (19696)
Minimum Wage; after 1y	0.0097*** (29963)	0.0041 (28584)	0.0078** (29536)	0.019*** (29030)	0.0085 (19696)	0.010*** (28097)	0.0074** (29957)	0.014*** (28972)	-0.00042 (28645)	-0.00080 (19696)
Minimum Wage; after 5y	0.0061* (29963)	-0.00036 (28584)	0.0069* (29536)	0.010 (29030)	-0.00031 (19696)	0.0045 (28097)	-0.00032 (29957)	0.015*** (28972)	-0.00060 (28645)	-0.00015 (19696)

Table A8.B. Interactions with macro-level conditions

<i>ALMP spending per GDP per unemployed</i>	Unemployment to job								Inactivity fulfilling domestic tasks to job	Inactivity study/training to job
	<i>Working age pop.</i>	<i>Low-edu</i>	<i>Med-edu</i>	<i>High-edu</i>	<i>Youth</i>	<i>Prime-aged</i>	<i>Men</i>	<i>Women</i>	<i>Women</i>	<i>Youth</i>
PES and administration	0.42*** (38492)	0.55*** (36854)	0.52*** (38142)	0.13 (37311)	0.52* (26173)	0.52*** (36427)	0.52*** (38586)	0.48*** (37395)	-0.10 (37215)	0.18*** (26252)
PES and administration # recession	0.14**	0.32***	0.097	0.16	0.28**	0.15**	0.17**	0.23***	0.077	0.10***
PES and administration # recovery	0.27***	0.37***	0.32***	0.31**	0.42***	0.20***	0.36***	0.27***	0.10	0.012
Training	-0.13***	-0.021	-0.11	-0.17*	-0.17*	-0.063	-0.091	0.016	-0.015	0.17***
Training # recession	0.081*	0.18***	0.089**	0.11*	0.21***	0.088*	0.098**	0.12**	0.048*	0.041**
Training # recovery	0.097***	0.13*	0.13***	0.18***	0.22***	0.055	0.13***	0.10***	0.071**	0.0067
Apprenticeship	2.89***	3.00***	2.60***	2.36**	2.94***	3.54***	3.52***	2.15***	0.94***	0.35*
Apprenticeship # recession	0.30	0.79	0.042	-0.65	1.46*	0.15	0.21	0.45	0.13	-0.18
Apprenticeship # recovery	0.053	-0.59	0.77	2.62*	-0.041	0.29	-0.11	0.42	0.069	0.81***
Employment incentives	0.58***	0.77***	0.65***	0.60***	0.98***	0.75***	0.76***	0.65***	0.22**	0.30***
Employment incentives # recession	0.23***	0.41***	0.22***	0.19	0.47***	0.25***	0.26***	0.34***	0.16**	0.039
Employment incentives # recovery	0.22***	0.24***	0.24***	0.26**	0.36***	0.15**	0.23***	0.22***	0.12	-0.085***
Sheltered and supported employment and rehabilitation	0.22**	0.29***	0.28**	0.14	0.36*	0.24**	0.17*	0.34***	0.047	0.051*
Sheltered and supported employment and rehabilitation # recession	0.15***	0.22***	0.12***	0.17***	0.20***	0.17***	0.17***	0.18***	0.036	0.066***
Sheltered and supported employment and rehabilitation # recovery	0.30***	0.37***	0.38***	0.25***	0.43***	0.27***	0.35***	0.32***	0.093**	0.016
Direct job creation	0.18***	0.37***	0.18***	0.16*	0.34***	0.20***	0.26***	0.16***	0.038	0.071***
Direct job creation # recession	-0.049	0.13	-0.077	0.20	0.38	0.041	0.021	-0.082	-0.072	0.22***
Direct job creation # recovery	-0.016	0.044	-0.077	0.27	0.19	-0.068	0.084	0.0074	-0.0023	0.036
Total active measures	0.073***	0.16***	0.096***	0.054	0.16***	0.11***	0.099***	0.14***	0.020	0.092***
Total active measures # recession	0.019	0.051***	0.014	0.025	0.057**	0.021	0.023	0.036**	0.013	0.021***
Total active measures # recovery	0.038***	0.058***	0.051***	0.055**	0.082***	0.023	0.056***	0.044***	0.023*	0.0071

	Unemployment to job								Inactivity fulfilling domestic tasks to job	Inactivity study/training to job
	Working age pop.	Low-edu	Med-edu	High-edu	Youth	Prime-aged	Men	Women	Women	Youth
UB replacement rates										
100 AW; av unemployment spell	-0.019***	-0.017***	-0.017***	-0.010	-0.025***	-0.022***	-0.020***	-0.0063*	-0.0023	-0.0043**
100 AW; av unemployment spell # recesssion	0.011***	0.010***	0.010***	0.012***	0.022***	0.014***	0.011***	0.012***	0.0062***	-0.000031
100 AW; av unemployment spell # recovery	0.011***	0.0098***	0.013***	0.016***	0.013***	0.013***	0.012***	0.012***	0.0072***	-0.00008
	(44430)	(42661)	(44020)	(42994)	(29983)	(42270)	(44524)	(43081)	(42901)	(30062)
67 AW; av unemployment spell	-0.018***	-0.015***	-0.014***	-0.0066	-0.023***	-0.020***	-0.019***	-0.0043	-0.0035	-0.0024
67 AW; av unemployment spell # recesssion	0.012***	0.011***	0.010***	0.012***	0.021***	0.014***	0.012***	0.013***	0.0056**	0.00033
67 AW; av unemployment spell # recovery	0.012***	0.011***	0.013***	0.014***	0.014***	0.013***	0.013***	0.012***	0.0065***	-0.001
	(44430)	(42661)	(44020)	(42994)	(29983)	(42270)	(44524)	(43081)	(42901)	(30062)
Minimum Wage; av unemployment spell	0.010***	0.0024	0.011**	0.017*	0.0024	0.0093**	0.0042	0.018***	-0.00090	-0.0022
Minimum Wage; av unemployment spell # recession	0.0049*	0.00090	0.0049	0.010	0.0067	0.0081**	0.0033	0.0068**	0.0034***	-0.00058
Minimum Wage; av unemployment spell # recovery	-0.0053*	-0.014***	-0.000039	0.0096	-0.030***	-0.0031	-0.011**	-0.0019	-0.00064	-0.0061***
	(29963)	(28584)	(29536)	(29030)	(19696)	(28097)	(44524)	(43081)	(42901)	(19696)

Note: This table summarises the results of regressions with one policy variable as indicated in the first column by reporting the estimated coefficient and the number of observations per regression under two variants: Panel A: main results, i.e. direct effects; Panel B: interaction terms with macro-level conditions. In this case, the table reports the policy effects under expansions (the omitted category), recoveries and recessions. See main text of the paper for comprehensive regression equations.

Table A9. Regression results: Job protection

	Job-to-job								Job-to-job: same sector							
	Working age pop.	Low-edu	Med-edu	High-edu	Youth	Prime-aged	Men	Women	Working age pop.	Low-edu	Med-edu	High-edu	Youth	Prime-aged	Men	Women
Job protection on regular contracts (individual and collective dismissals);	-0.32 (29196)	-1.22** (27844)	-0.98** (28868)	0.14 (28409)	-2.71** (20133)	-0.065 (28229)	-0.70** (29230)	-0.20 (28298)	0.098 (29196)	-0.67* (27913)	-0.19 (28897)	0.38 (28447)	-0.92 (20133)	0.39 (28229)	-0.15 (29248)	0.34 (28330)
Job protection on regular contracts (individual dismissals)	-0.58** (29196)	-1.54*** (27844)	-1.04*** (28868)	-0.26 (28409)	-2.77*** (20133)	-0.41 (28229)	-0.77*** (29230)	-0.62** (28298)	-0.051 (29196)	-0.80*** (27913)	-0.27 (28897)	0.23 (28447)	-0.94 (20133)	0.16 (28229)	-0.14 (29248)	0.083 (28330)
Job protection on temporary contracts	0.68* (29196)	2.10*** (27844)	0.081 (28868)	0.54 (28409)	0.66 (20133)	0.77* (28229)	0.63 (29230)	0.92** (28298)	1.18*** (29196)	2.02*** (27913)	1.10*** (28897)	0.98** (28447)	1.43 (20133)	1.36*** (28229)	0.98*** (29248)	1.18*** (28330)
Difference between Job protection on regular and temporary contracts	-0.68*** (29196)	-1.91*** (27844)	-0.76*** (28868)	-0.40 (28409)	-2.21*** (20133)	-0.59*** (28229)	-0.79*** (29230)	-0.80*** (28298)	-0.50*** (29196)	-1.36*** (27913)	-0.63*** (28897)	-0.23 (28447)	-1.19* (20133)	-0.43*** (28229)	-0.49** (29248)	-0.41** (28330)

	Job-to-job: open-ended								Job-to-job: temporary							
	Working age pop.	Low-edu	Med-edu	High-edu	Youth	Prime-aged	Men	Women	Working age pop.	Low-edu	Med-edu	High-edu	Youth	Prime-aged	Men	Women
Job protection on regular contracts (individual and collective dismissals);	-0.36* (29196)	-0.60* (27888)	-0.67*** (28883)	-0.20 (28434)	-2.41*** (20133)	0.037 (28229)	-0.52** (29241)	-0.16 (28313)	-0.28* (29196)	-0.91*** (27879)	-0.46* (28884)	-0.11 (28430)	-0.26 (20133)	-0.38** (28229)	-0.52*** (29241)	-0.28 (28320)
Job protection on regular contracts (individual dismissals)	-0.49*** (29196)	-0.95*** (27888)	-0.71*** (28883)	-0.37 (28434)	-2.37*** (20133)	-0.19 (28229)	-0.60*** (29241)	-0.37 (28313)	-0.31*** (29196)	-0.83*** (27879)	-0.47*** (28884)	-0.12 (28430)	-0.27 (20133)	-0.43*** (28229)	-0.44*** (29241)	-0.39** (28320)
Job protection on temporary contracts	0.75*** (29196)	1.72*** (27888)	0.56** (28883)	0.52 (28434)	1.34 (20133)	1.05*** (28229)	0.89*** (29241)	0.82*** (28313)	-0.15 (29196)	0.38 (27879)	-0.51* (28884)	-0.16 (28430)	-0.56 (20133)	-0.22 (28229)	-0.36 (29241)	0.032 (28320)
Difference between Job protection on regular and temporary contracts	-0.64*** (29196)	-1.35*** (27888)	-0.71*** (28883)	-0.46* (28434)	-2.17*** (20133)	-0.55*** (28229)	-0.77*** (29241)	-0.58*** (28313)	-0.16* (29196)	-0.73*** (27879)	-0.12 (28884)	-0.025 (28430)	0.011 (20133)	-0.21** (28229)	-0.16 (29241)	-0.29* (28320)

	Job-to-job: other sector							
	Working age pop.	Low-edu	Med-edu	High-edu	Youth	Prime-aged	Men	Women
Job protection on regular contracts (individual and collective dismissals);	-0.42** (29196)	-0.64** (27913)	-0.90*** (28897)	-0.17 (28447)	-1.79*** (20133)	-0.46** (28229)	-0.49** (29248)	-0.59** (28330)
Job protection on regular contracts (individual dismissals)	-0.53*** (29196)	-0.79*** (27913)	-0.88*** (28897)	-0.44* (28447)	-1.83*** (20133)	-0.56*** (28229)	-0.63*** (29248)	-0.74*** (28330)
Job protection on temporary contracts	-0.49** (29196)	0.061 (27913)	-0.98*** (28897)	-0.64* (28447)	-0.77 (20133)	-0.60** (28229)	-0.47* (29248)	-0.38 (28330)
Difference between Job protection on regular and temporary contracts	-0.17 (29196)	-0.58*** (27913)	-0.23 (28897)	-0.051 (28447)	-1.02** (20133)	-0.16 (28229)	-0.25 (29248)	-0.36** (28330)

	Unemployment to job								Unemployment to job: open-ended							
	Working age pop.	Low-edu	Med-edu	High-edu	Youth	Prime-aged	Men	Women	Working age pop.	Low-edu	Med-edu	High-edu	Youth	Prime-aged	Men	Women
Job protection on regular contracts (individual and collective dismissals);	0.028 (29098)	-0.27** (27940)	-0.062 (28835)	0.035 (28327)	-0.12 (20059)	-0.069 (28125)	-0.035 (29177)	-0.15 (28281)	-0.071 (29098)	-0.18*** (27941)	-0.13* (28835)	-0.075 (28327)	-0.072 (20059)	-0.13* (28125)	-0.13* (29178)	-0.078 (28281)
Job protection on regular contracts (individual dismissals)	-0.0013 (29098)	-0.23** (27940)	-0.048 (28835)	0.17 (28327)	-0.039 (20059)	-0.11 (28125)	-0.014 (29177)	-0.12 (28281)	-0.096** (29098)	-0.19*** (27941)	-0.14** (28835)	-0.073 (28327)	-0.080 (20059)	-0.16*** (28125)	-0.14** (29178)	-0.088* (28281)
Job protection on temporary contracts	-0.015 (29098)	-0.19 (27940)	-0.13 (28835)	-0.072 (28327)	-0.11 (20059)	-0.025 (28125)	-0.33** (29177)	-0.14 (28281)	0.059 (29098)	0.010 (27941)	-0.078 (28835)	-0.032 (28327)	0.24 (20059)	-0.0088 (28125)	-0.081 (29178)	-0.013 (28281)
Difference between Job protection on regular and temporary contracts	0.0051 (29098)	-0.086 (27940)	0.019 (28835)	0.15 (28327)	0.013 (20059)	-0.071 (28125)	0.12 (29177)	-0.031 (28281)	-0.090** (29098)	-0.14** (27941)	-0.070 (28835)	-0.038 (28327)	-0.14 (20059)	-0.11** (28125)	-0.067 (29178)	-0.056 (28281)

	Unemployment to job: temporary									Inactivity fulfilling domestic tasks to job	Inactivity study/training to job
	Working age pop.	Low-edu	Med-edu	High-edu	Youth	Prime-aged	Men	Women		Women	Youth
Job protection on regular contracts (individual and collective dismissals);	0.061 (29098)	-0.13 (27940)	0.0018 (28836)	0.14 (28330)	-0.12 (20059)	0.037 (28125)	0.028 (29177)	-0.073 (28281)		-0.039 (28078)	-0.042 (20133)
Job protection on regular contracts (individual dismissals)	0.070 (29098)	-0.077 (27940)	0.056 (28836)	0.28** (28330)	0.0042 (20059)	0.028 (28125)	0.074 (29177)	-0.031 (28281)		-0.058 (28078)	-0.069** (20133)
Job protection on temporary contracts	-0.062 (29098)	-0.19** (27940)	-0.077 (28836)	-0.035 (28330)	-0.29 (20059)	-0.010 (28125)	-0.21** (29177)	-0.11 (28281)		0.38*** (28078)	0.23*** (20133)
Difference between Job protection on regular and temporary contracts	0.073 (29098)	0.021 (27940)	0.069 (28836)	0.21* (28330)	0.11 (20059)	0.024 (28125)	0.14** (29177)	0.020 (28281)		-0.19*** (28078)	-0.13*** (20133)

Note: This table summarises the results of regressions with one policy variable as indicated in the first column by reporting the estimated coefficient and the number of observations per regression. See main text of the paper for comprehensive regression equations.

Table A10. Regression results: Policy barriers to business entry and competition, occupational entry regulations

Panel A: Job-to-job transitions

	Job-to-job								Same sector job-to-job							
	Working age pop.	Low-edu	Med-edu	High-edu	Youth	Prime-aged	Men	Women	Working age pop.	Low-edu	Med-edu	High-edu	Youth	Prime-aged	Men	Women
PMR - aggregate indicator X Industry-specific output growth gap; lagged	-0.060*** (44612)	-0.14*** (42546)	-0.047** (44083)	-0.021 (43091)	-0.34*** (30118)	-0.036* (42468)	-0.049*** (44624)	-0.037 (43103)	-0.037*** (44612)	-0.092*** (42646)	-0.048* (44124)	-0.034 (43165)	-0.26*** (30118)	-0.022 (42468)	-0.031** (44650)	-0.021 (43157)
PMR - Barriers to entrepreneurship X Industry-specific output growth gap; lagged	-0.019 (44612)	-0.077*** (42546)	-0.015 (44083)	0.014 (43091)	-0.24*** (30118)	0.0088 (42468)	-0.0056 (44624)	-0.0087 (43103)	-0.0084 (44612)	-0.027 (42646)	-0.0033 (44124)	-0.024 (43165)	-0.18*** (30118)	0.013 (42468)	0.0079 (44650)	-0.023 (43157)
OER – average over personal and professional services X Industry-specific output growth gap; lagged	-0.054*** (36032)	-0.041 (34445)	-0.043** (35464)	-0.052** (34696)	-0.034 (25123)	-0.049** (34362)	-0.042** (35957)	-0.032 (34714)	-0.020 (36032)	-0.073 (34524)	-0.0098 (35501)	-0.059 (34761)	0.068 (25123)	-0.0083 (34362)	-0.015 (35981)	-0.023 (34758)
OER – personal services - mobility restrictions X Industry-specific output growth gap; lagged	-0.21* (36032)	0.055 (34445)	-0.18 (35464)	-0.13 (34696)	-0.73* (25123)	-0.18* (34362)	-0.19* (35957)	0.13 (34714)	-0.15* (36032)	-0.15 (34524)	-0.13 (35501)	-0.31* (34761)	-0.48 (25123)	-0.16** (34362)	-0.17** (35981)	0.16 (34758)
OER – professional services - mobility restrictions X Industry-specific output growth gap; lagged	-0.052* (36032)	0.022 (34445)	-0.011 (35464)	-0.042 (34696)	0.17 (25123)	-0.050 (34362)	-0.038 (35957)	-0.041 (34714)	-0.0061 (36032)	-0.048 (34524)	0.013 (35501)	-0.029 (34761)	0.27** (25123)	-0.0017 (34362)	-0.0032 (35981)	-0.047 (34758)
OER – personal services - qualification restrictions X Industry-specific output growth gap; lagged	-0.057*** (36032)	-0.11*** (34445)	-0.084*** (35464)	-0.053 (34696)	-0.19** (25123)	-0.060** (34362)	-0.058*** (35957)	-0.021 (34714)	-0.039** (36032)	-0.10* (34524)	-0.045* (35501)	-0.061 (34761)	-0.10 (25123)	-0.028 (34362)	-0.034 (35981)	0.0088 (34758)
OER – professional services - qualification restrictions X Industry-specific output growth gap; lagged	-0.081*** (36032)	-0.090*** (34445)	-0.057** (35464)	-0.087*** (34696)	-0.15* (25123)	-0.074*** (34362)	-0.067*** (35957)	-0.064** (34714)	-0.043** (36032)	-0.11** (34524)	-0.036 (35501)	-0.083* (34761)	-0.017 (25123)	-0.033 (34362)	-0.041** (35981)	-0.056 (34758)

	Other sector job-to-job							
	<i>Working age pop.</i>	<i>Low-edu</i>	<i>Med-edu</i>	<i>High-edu</i>	<i>Youth</i>	<i>Prime-aged</i>	<i>Men</i>	<i>Women</i>
PMR - aggregate indicator X Industry-specific output growth gap; lagged	-0.023** (44612)	-0.055*** (42646)	-0.011 (44124)	-0.0014 (43165)	-0.082** (30118)	-0.014 (42468)	-0.017 (44650)	-0.0049 (43157)
PMR - Barriers to entrepreneurship X Industry-specific output growth gap; lagged	-0.011 (44612)	-0.037*** (42646)	-0.0018 (44124)	0.023 (43165)	-0.061** (30118)	-0.0041 (42468)	-0.0048 (44650)	0.012 (43157)
OER – average over personal and professional services X Industry-specific output growth gap; lagged	-0.034*** (36032)	-0.029** (34524)	-0.047*** (35501)	-0.062*** (34761)	-0.10*** (25123)	-0.040*** (34362)	-0.029** (35981)	-0.060*** (34758)
OER – personal services - mobility restrictions X Industry-specific output growth gap; lagged	-0.059 (36032)	-0.0060 (34524)	-0.033 (35501)	-0.0084 (34761)	-0.25 (25123)	-0.023 (34362)	-0.018 (35981)	-0.024 (34758)
OER – professional services - mobility restrictions X Industry-specific output growth gap; lagged	-0.046*** (36032)	-0.033 (34524)	-0.057** (35501)	-0.089*** (34761)	-0.095 (25123)	-0.049*** (34362)	-0.048** (35981)	-0.072** (34758)
OER – personal services - qualification restrictions X Industry-specific output growth gap; lagged	-0.019 (36032)	-0.027 (34524)	-0.041** (35501)	-0.044** (34761)	-0.086** (25123)	-0.032** (34362)	-0.015 (35981)	-0.049** (34758)
OER – professional services - qualification restrictions X Industry-specific output growth gap; lagged	-0.038*** (36032)	-0.034** (34524)	-0.042** (35501)	-0.073*** (34761)	-0.13*** (25123)	-0.040*** (34362)	-0.029** (35981)	-0.062*** (34758)

Panel B: Jobless-to-job transitions

	Unemployment to job								Inactivity fulfilling domestic tasks to job	Inactivity study/training to job
	Working age pop.	Low-edu	Med-edu	High-edu	Youth	Prime-aged	Men	Women	Women	Youth
PMR - aggregate indicator X Industry-specific output growth gap; lagged	0.00014 (44514)	-0.017*** (42741)	0.0022 (44104)	0.0058 (43075)	-0.025* (30039)	0.00029 (42352)	0.0026 (43165)	-0.0083* (44609)	-0.0033 (42985)	-0.012*** (30118)
PMR - Barriers to entrepreneurship X Industry-specific output growth gap; lagged	0.0014 (44514)	-0.0031 (42741)	0.00076 (44104)	-0.0018 (43075)	0.0013 (30039)	-0.000050 (42352)	0.0089 (44608)	-0.0059 (43165)	-0.0060*** (42985)	-0.0051** (30118)
OER – average over personal and professional services X Industry-specific output growth gap; lagged	-0.0025 (35934)	-0.013*** (34557)	-0.0048 (35446)	0.0019 (34652)	-0.030** (25044)	-0.0037 (34246)	-0.0036 (35911)	-0.0099** (34725)	0.00036 (34872)	-0.0092*** (25123)
OER – personal services - mobility restrictions X Industry-specific output growth gap; lagged	-0.086*** (35934)	-0.10*** (34557)	-0.10*** (35446)	-0.16*** (34652)	-0.28*** (25044)	-0.094*** (34246)	-0.16*** (35911)	-0.050*** (34725)	-0.0062 (34872)	-0.022*** (25123)
OER – professional services - mobility restrictions X Industry-specific output growth gap; lagged	0.012** (35934)	0.00065 (34557)	0.013* (35446)	0.027* (34652)	0.023 (25044)	0.012* (34246)	0.021*** (35911)	0.0050 (34725)	0.0078 (34872)	-0.011*** (25123)
OER – personal services - qualification restrictions X Industry-specific output growth gap; lagged	-0.018*** (35934)	-0.028*** (34557)	-0.022*** (35446)	-0.017 (34652)	-0.079*** (25044)	-0.020*** (34246)	-0.028*** (35911)	-0.026*** (34725)	-0.0047 (34872)	-0.0092*** (25123)

Note: This table summarises the results of regressions including an interaction effect between policies and industry-level demand conditions by reporting the estimated coefficient and the number of observations per regression. Direct effects cannot be estimated as policy variables have no or very limited time variation. See main text of the paper for comprehensive regression equations.

Table A11. Regression results: Union bargaining, labour tax wedges, incidence of low-pay

Panel A: Job-to-job transitions

	Job-to-job							
	<i>Working age pop.</i>	<i>Low- edu</i>	<i>Med- edu</i>	<i>High- edu</i>	<i>Youth</i>	<i>Prime- aged</i>	<i>Men</i>	<i>Women</i>
Collective bargaining decentralisation	0.99*** (36475)	1.56*** (34868)	1.45*** (36072)	0.91* (35181)	3.45*** (24762)	0.69* (34509)	0.88** (36504)	0.98*** (35237)
Incidence of low pay	-0.15** (18903)	-0.37** (17647)	-0.22*** (18792)	-0.029 (18448)	-0.47*** (13416)	-0.16*** (17410)	-0.20*** (18861)	-0.17* (18438)
Average tax wedge 67% AW	-0.15** (44612)	-0.015 (42546)	-0.13** (44083)	-0.18*** (43091)	-0.33* (30118)	-0.19*** (42468)	-0.17*** (44624)	-0.096* (43103)
Marginal tax wedge 67% AW	-0.11*** (44612)	-0.13*** (42546)	-0.071** (44083)	-0.052 (43091)	-0.29*** (30118)	-0.091*** (42468)	-0.091*** (44624)	-0.065** (43103)
Average tax wedge 100% AW	-0.14*** (44612)	-0.19*** (42546)	-0.16*** (44083)	-0.16*** (43091)	-0.41*** (30118)	-0.12*** (42468)	-0.14*** (44624)	-0.16*** (43103)
Marginal tax wedge 100% AW	-0.050*** (44612)	-0.11*** (42546)	-0.035** (44083)	-0.026* (43091)	-0.11*** (30118)	-0.038*** (42468)	-0.031** (44624)	-0.051*** (43103)

Panel B: Jobless-to-job transitions

	Unemployment to job								Inactivity fulfilling domestic tasks to job	Inactivity study/training to job
	Working age pop.	Low-edu	Med-edu	High-edu	Youth	Prime-aged	Men	Women	Women	Youth
Collective bargaining decentralisation	0.11 (363770)	0.35*** (35003)	0.12 (36071)	-0.39*** (35151)	0.17 (24683)	0.097 (34393)	0.095 (36475)	0.12 (35271)	-0.031 (35091)	0.22*** (24762)
Incidence of low pay	-0.023* (18805)	-0.029 (17692)	-0.026* (18693)	-0.028 (18300)	-0.0083 (13337)	-0.029* (17294)	-0.026 (18772)	-0.020 (18347)	0.0016 (18167)	-0.011 (13416)
Average tax wedge 67% AW	-0.036*** (44514)	-0.025** (42741)	-0.023** (44104)	-0.042*** (43075)	-0.041** (30039)	-0.034*** (42352)	-0.045*** (44608)	-0.018** (43165)	-0.028** (42985)	0.0091** (30118)
Marginal tax wedge 67% AW	-0.015*** (44514)	-0.013* (42741)	-0.019*** (44104)	-0.032*** (43075)	-0.00048 (30039)	-0.016*** (42352)	-0.014* (44608)	-0.0094* (43165)	-0.018*** (42985)	-0.0044* (30118)
Average tax wedge 100% AW	-0.028*** (44514)	-0.041*** (42741)	-0.025*** (44104)	-0.016 (43075)	-0.052*** (30039)	-0.029*** (42352)	-0.044*** (44608)	-0.021*** (43165)	-0.019*** (42985)	0.0028 (30118)
Marginal tax wedge 100% AW	-0.013*** (44514)	-0.017*** (42741)	-0.014*** (44104)	-0.020*** (43075)	-0.016*** (30039)	-0.013*** (42352)	-0.018*** (44608)	-0.0071** (43165)	-0.0018 (42985)	-0.00055 (30118)

Note: This table summarises the results of regressions with one policy variable as indicated in the first column by reporting the estimated coefficient and the number of observations per regression. See main text of the paper for comprehensive regression equations.

Table A12. Regression results: Housing policies and geographical mobility**Panel A: Job-to-job transitions**

	Job-to-job							
	<i>Working age pop.</i>	<i>Low-edu</i>	<i>Med-edu</i>	<i>High-edu</i>	<i>Youth</i>	<i>Prime-aged</i>	<i>Men</i>	<i>Women</i>
Rent control	-2.77*** (36717)	-2.12*** (34993)	-2.29*** (36275)	-2.10*** (35487)	-8.72*** (26544)	-2.66*** (37730)	-2.43*** (36741)	-2.20*** (35509)
Landlord-tenant regulation	-0.88 (39789)	-2.61* (37955)	-1.34 (39304)	-0.24 (38389)	-6.75** (26544)	0.54 (37730)	-0.34 (39808)	-1.68* (38398)
Social spending on housing	-5.04*** (38974)	-6.84*** (37256)	-5.41*** (38535)	-4.84*** (37621)	-13.2*** (26417)	-3.89*** (36955)	-4.32*** (38997)	-5.81*** (37647)
Country-level inter-regional in-migration rate (% pop t-1)	1.22*** (31220)	2.02*** (29576)	1.25*** (30953)	0.54* (30292)	2.62*** (20998)	1.00*** (29440)	1.09*** (31256)	1.54*** (30341)
Country-level international in-migration (% pop t-1)	1.54*** (42937)	2.12*** (40990)	1.51*** (42418)	1.57*** (41506)	3.00*** (29034)	1.74*** (40832)	1.66*** (42950)	1.43*** (41517)

Panel B: Jobless-to-job transitions

	Unemployment to job								Inactivity fulfilling domestic tasks to job	Inactivity study/training to job
	<i>Working age pop.</i>	<i>Low-edu</i>	<i>Med-edu</i>	<i>High-edu</i>	<i>Youth</i>	<i>Prime-aged</i>	<i>Men</i>	<i>Women</i>	<i>Women</i>	<i>Youth</i>
Rent control	-0.42*** (36619)	-0.31** (35137)	-0.46*** (36277)	-0.38 (35459)	-0.67*** (26465)	-0.54*** (37614)	-0.49*** (36716)	-0.25** (35547)	-0.76*** (35367)	-0.030 (26544)
Landlord-tenant regulation	0.39** (39691)	-0.23 (38116)	0.39* (39314)	1.82*** (38374)	0.27 (26465)	0.58*** (37614)	0.53** (39787)	0.20 (38449)	0.019 (38269)	0.53*** (26544)
Social spending on housing	0.26* (38876)	-0.0100 (37406)	0.100 (38541)	0.37 (37598)	0.13 (26338)	0.47** (36839)	0.32* (38973)	0.24 (37690)	-0.22* (37510)	-0.056 (26417)
Country-level inter-regional in-migration rate (% pop t-1)	0.29*** (31220)	0.41*** (29801)	0.25*** (31027)	0.20* (30320)	0.28** (20988)	0.35*** (29418)	0.40*** (31314)	0.15** (30440)	0.081*** (30169)	0.071*** (20998)
Country-level international in-migration (% pop t-1)	0.11* (42937)	0.12* (41260)	0.026 (42535)	0.18** (41577)	-0.0096 (29024)	0.099 (40810)	0.12* (43030)	0.085 (41663)	0.14*** (41392)	0.10*** (29034)

Note: This table summarises the results of regressions with one policy variable as indicated in the first column by reporting the estimated coefficient and the number of observations per regression. See main text of the paper for comprehensive regression equations.

Table A13. Regression results: Policy support for families

Panel A: Job-to-job transitions

	Job-to-job					
	<i>Working age pop.</i>	<i>Low-edu</i>	<i>Med-edu</i>	<i>High-edu</i>	<i>Men</i>	<i>Women</i>
Childcare benefits: couple (first earner 67%AW, second earner minimum wage)	0.00040 (8578)	-0.089 (8085)	0.052 (8427)	0.019 (8273)	0.056 (8554)	-0.019 (8276)
Childcare benefits: lone parent (minimum wage)	0.0012 (8578)	-0.030 (8085)	0.023 (8427)	0.0023 (8273)	0.028 (8554)	0.014 (8276)
Proportion of children aged 0-2 enrolled in formal childcare and pre-school	-0.012 (20021)	0.046*** (19157)	0.018 (19774)	0.020 (19369)	0.0049 (19989)	0.047*** (19316)
Length of paid maternity and parental leave	-0.0068 (44332)	-0.0099 (42276)	-0.0069 (43803)	-0.0088* (42816)	-0.0098* (44344)	-0.0072 (42826)
Length of paid paternity and parental leave	0.0098 (44332)	-0.017 (42276)	0.029*** (43803)	0.027*** (42816)	0.0087 (44344)	0.033*** (42826)
Difference between length of paid maternity and paternity leave	-0.0079** (44332)	-0.0056 (42276)	-0.012** (43803)	-0.013** (42816)	-0.010** (44344)	-0.013*** (42826)

Panel B: Jobless-to-job transitions

	Unemployment to job						Inactivity fulfilling domestic tasks to job
	<i>Working age pop.</i>	<i>Low-edu</i>	<i>Med-edu</i>	<i>High-edu</i>	<i>Men</i>	<i>Women</i>	<i>Women</i>
Childcare benefits: couple (first earner 67%AW, second earner minimum wage)	0.066*** (8578)	0.086*** (8155)	0.046*** (8464)	0.057*** (8314)	0.070*** (8574)	0.068*** (8310)	-0.0039 (8200)
Childcare benefits: lone parent (minimum wage)	0.022*** (8578)	0.034*** (8155)	0.0079 (8464)	0.033*** (8314)	0.029*** (8574)	0.022** (8310)	-0.0011 (8200)
Proportion of children aged 0-2 enrolled in formal childcare and pre-school	-0.0022 (20021)	-0.0018 (19152)	-0.0065* (19720)	-0.0099 (19315)	-0.0077** (19915)	-0.0030 (19296)	-0.0059*** (19070)
Length of paid maternity and parental leave	-0.0039*** (44234)	-0.0051** (42471)	-0.0052*** (43824)	0.000099 (42800)	-0.0050*** (44328)	-0.0024** (42888)	0.00049 (42708)
Length of paid paternity and parental leave	-0.0040 (44234)	-0.0037 (42471)	-0.0094*** (43824)	-0.011** (42800)	-0.0072** (44328)	-0.0019 (42888)	-0.0021 (42708)
Difference between length of paid maternity and paternity leave	-0.0028*** (44234)	-0.0038* (42471)	-0.0029** (43824)	0.0021 (42800)	-0.0031** (44328)	-0.0018* (42888)	0.00084 (42708)

Note: This table summarises the results of regressions with one policy variable as indicated in the first column by reporting the estimated coefficient and the number of observations per regression. See main text of the paper for comprehensive regression equations.