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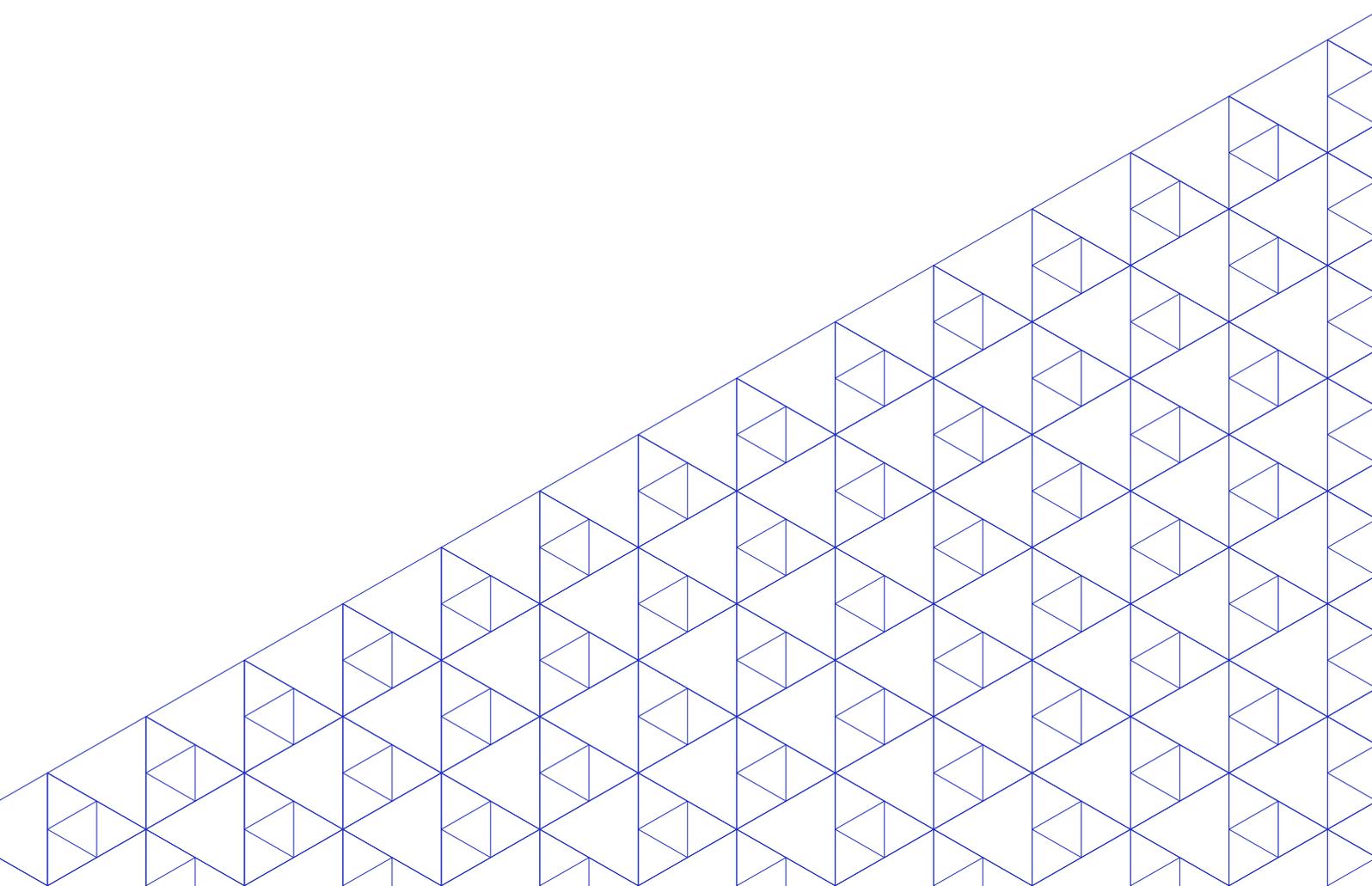
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► Labour market policies for inclusiveness

A literature review with a gap analysis

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Abstract

The COVID-19 pandemic triggered renewed interest in the use of different fiscal spending and transfer programmes to address the worsening conditions and deepening inequalities within the labour markets.

This paper reviews the role of specific fiscal spending and transfer programmes in shaping labour market dynamics by disentangling different macroeconomic and microeconomic mechanisms. The paper presents the recent empirical evidence on the topic in an attempt to abstract several empirical regularities and identify research gaps. The analysis also highlights gaps in the literature and suggests how future research could fill these gaps.

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▶ Introduction

The COVID-19 pandemic triggered renewed interest in the use of alternative forms of fiscal spending and transfer programmes to address the deteriorating conditions and deepening inequalities in the labour markets. The crisis had a disproportionately severe effect on the most vulnerable workers, including informal, low-skilled and female workers and those in insecure forms of work, as well as on developing countries (ILO 2022).

In response to the crisis, governments implemented a series of existing and novel policy responses aimed at retaining jobs through employment retention schemes and supporting households' income via cash transfers and extended payment of unemployment benefits (UBs) (IMF 2021). Around 80 per cent of all countries introduced at least one type of active labour market policy (ALMP) (i.e. training, employment incentives, direct job creation, start-up incentives, public employment services and administration, sheltered and supported employment and rehabilitation) to address negative effects of the pandemic (Gentilini et al. 2021). As part of the COVID-19 crisis response, there has also been a radical change in the dominant policy discourse around an increasing recognition of the need to ease budget constraints. For instance, in March 2020, the European Commission and Council temporarily suspended the budgetary requirements of the Stability and Growth Pact, which allowed European Union (EU) countries to address the negative impacts of the crisis with an unprecedented level of fiscal response measures. Therefore, developing a deeper understanding of the labour market effects of specific public spending and transfer programmes and surveying the existing evidence is increasingly relevant today.

This paper reviews the role of specific fiscal spending and transfer programmes in shaping labour market dynamics by disentangling different macroeconomic and microeconomic mechanisms. It presents the recent empirical evidence on the topic in an attempt to abstract several empirical regularities and identify research gaps.

It is important to stress that this study – despite covering a rich set of fiscal interventions – is by no means exhaustive and several issues remain outside the scope of the current review. Note that it does not cover the institutional aspects, which are crucial in this context. We do not analyse the role of regulations, such as those governing employment protection, minimum wages or employment quotas, nor the presence and strength of trade unions in influencing the direction and size of the impact of fiscal interventions in the labour market. Moreover, limited attention has been devoted to informality, workers with disabilities (see, for instance, Jones 2021) and policies targeted at women, all of which undoubtedly deserve to be developed in more detail. Needless to say, there are other policies, perhaps equally relevant, that we do not address here.

▶ 1 Conceptual framework

Public spending is a key instrument for achieving policy objectives but it is not available to the same extent in all countries. Particularly in developing countries, fiscal space is more limited. In these cases, inadequate tax collection and fewer revenue streams restrict governments' capacity to redistribute and provide public goods and services. Structural reforms, in particular trade liberalization, have further diminished government revenues, which often rely on import tariffs as an important source of revenue in the developing world.¹

Public spending includes *government consumption, investment and transfer payments*. Government spending ranges from expenditure on education, healthcare or infrastructure to ALMPs. Broadly speaking, such spending ensures that governments can successfully provide public services. On the other hand, transfers have a dual goal of redistribution (e.g. cash transfers) and insurance (e.g. unemployment and disability benefits, pensions).

1.1 Government intervention in the labour market

Governments play an important role in the labour market in several ways: (a) through labour market institutions (e.g. minimum wages and employment protection legislation); (b) through aggregate fiscal policy (changes in public expenditure and taxes); (c) via specific labour market policies and social protection programmes.

- a) *Labour market institutions*: Conventional wisdom suggests that labour market deregulation increases a country's resilience – by reducing labour adjustment costs and allowing firms to easily adjust their labour inputs to accommodate changes in demand and unexpected shocks, leading to higher reallocation and productivity growth.² Thus, minimum wages, collective bargaining/administrative extension of wage agreements and stringent employment protection legislation are all seen as friction points that prevent the labour market from functioning optimally and, consequently, are a source of unemployment. The conventional view of economic policies has, to date, encouraged the deregulation of the labour market with the dual objective of boosting firms' competitiveness and reducing unemployment rates (OECD 1994). However, empirical evidence surveyed by Brancaccio et al. (2018) suggests that only one third of the studies report that deregulation promotes employment growth and reduces unemployment. Instead, more than half of the empirical evidence finds that stringent employment protection is associated with higher employment and decreasing unemployment. In addition, most of the literature arguing that labour market deregulation will improve economic performance and create more jobs is based on the World Bank's Employing Workers index, developed as part of its Doing Business indicators (World Bank, 2008). Extensive research at the ILO has revealed the existence of serious conceptual and methodological problems concerning the Employing Workers index, which may result in incorrect policy conclusions being drawn (see Berg and Cazes 2007; 2008). Finally, beyond the quantitative impact

¹ Tax collection from firms and households is the main source of public revenue in developing economies. The forms of taxation can be classified as follows: (a) personal income taxes; (b) social security contributions; (c) corporate income taxes; (d) consumption tax; (e) property tax; (f) capital gains tax. This list is not meant to be exhaustive but to provide some elementary facts on the general tax structure. Note that the main purpose of taxes is redistribution of wealth and, as such, they can have a considerable effect on disposable income inequality. Progressive (regressive) taxation is likely to reduce (increase) income inequality. Furthermore, tax expenditures represent all foregone public revenue due to different forms of preferential tax treatment given to both households and firms (e.g. tax credits, tax waivers, deductions). A recent study by Haldenwang et al. (2021) reveals that tax expenditures accounted for almost 25 per cent of total tax revenue (4.7 per cent of GDP) in high-income countries (see figure A1). Tax expenditures are similarly popular in low-income countries, where they amount to 26.3 per cent of total tax revenue (2.6 per cent of GDP), despite their low capacity to levy taxes.

² At the same time, more flexible markets with higher levels of between-firm reallocation of labour can make the economic systems more vulnerable and prone to recession (Dosi et al. 2017).

on employment, the underlying institutional changes led to the fragmentation of the labour market, giving rise to the expansion of low-quality jobs with negative implications not only for existing inequalities³ but also for innovation capacity.⁴

- b)** Fiscal policy can have a generic effect on aggregate demand, output and (ultimately) employment through discretionary channels and/or automatic fiscal stabilizers: The key advantage of the latter is that they do not require discretionary intervention by the government and are therefore not subject to implementation lags. For instance, when output contracts and unemployment increases, unemployment benefits act as automatic stabilizers for aggregate demand by smoothing the consumption (i.e. fluctuation of income) without the intervention of fiscal authorities. On the other hand, governments use discretionary fiscal policy (i.e. changes in taxes or government spending) to address medium- to long-term economic challenges. The extent to which discretionary fiscal policies can stimulate economic activity hinges on the size of the fiscal multiplier. A rise in government spending on goods and services stimulates demand from firms for capital and labour inputs in order to meet increased demand, thereby expanding output and employment. This, in turn, increases households' income, boosting both domestic and foreign consumption. In both cases, higher money demand will put pressure on interest rates, crowding out investments (at least partially) (Hebous 2011). Moreover, to the extent that households anticipate future tax increases to compensate for the additional spending, private consumption will decline (i.e. precautionary savings increase), further reducing the size of the fiscal multiplier.

In what follows, we briefly summarize some country peculiarities that can have a considerable effect on the size of the output response.⁵ In the appendix, we provide a short theoretical discussion on the transmission mechanisms of fiscal policy to labour market outcomes.

- i)** The exchange rate regime: The effect of a fiscal stimulus varies according to the country's exchange rate regime. When exchange rates are fixed, the expansionary fiscal policy increases demand and leads to a higher output, which puts upward pressure on the interest rates. Central banks are therefore forced to respond with monetary accommodation in order to "defend" the exchange rate and ensure that the final output effect is not dampened. Conversely, in an economy with a flexible exchange rate regime, the effect of fiscal stimulus will be weakened through higher interest rates and appreciation of the domestic currency, leading to a decline in investments and net exports. Therefore, the fiscal multiplier is higher in countries with a fixed exchange rate compared to those with a flexible exchange rate regime.
- ii)** Trade openness: Theoretically, the fiscal multiplier is expected to be lower (higher) in countries characterized by a higher (lower) marginal propensity to import. According to economic theory, a rise in domestic income – in the aftermath of expansionary fiscal shock – leads to higher demand for both domestic and foreign goods. Thus, in countries characterized by higher trade openness, part of the fiscal stimulus essentially leaks into the import channel, leading to higher imports (with exports unaffected), which in turn have a detrimental effect on the trade balance. Conversely, countries with a lower tendency to import tend to have higher fiscal multipliers.
- iii)** Source of financing and fiscal stance: Debt-financed fiscal stimulus is expected to have a larger expansionary effect than that of revenue-neutral fiscal policy (Abiad et al. 2016). Nevertheless, the effect may also be influenced by the country's fiscal stance. In countries with high debt-to-GDP ratios, issuing of additional debt may increase sovereign risk premia, putting pressure on debt sustainability and eventually crowding out private investment.

³ The IMF study, based on 20 advanced economies over the period 1980–2010, finds that a decline in union density in a country is associated with an increase in top income shares, while a reduction in the minimum wage is associated with higher overall inequality (Jaumotte and Osorio Buitron 2015).

⁴ An excessively high job turnover rate results in a weakening of organizational capabilities and undermines the accumulation of knowledge generated by long-term employment relations, leading to lower innovation capacity and productivity as a result (Reljic et al. 2021). As Pianta and Reljic (2021, 19) put it, "enhancement of job quality should be seen as both the means and the end of higher innovation capabilities and higher productivity".

⁵ See Hebous (2011) for further discussion on this issue.

- iv) **Business cycle:** Most theoretical models do not predict higher multipliers during downturns, except for those that assume significant frictions (Ramey 2019). However, the empirical evidence points to larger multipliers in recessions than during periods of economic expansion (Auerbach and Gorodnichenko 2012).
- v) **Interaction with monetary policy:** The size of the fiscal multiplier is contingent on the monetary policy response. Fiscal policy fares better when coupled with monetary accommodation or zero lower bound on the nominal interest rates (Woodford 2011; Christiano et al. 2011) because central banks are unwilling to respond to inflationary pressures generated by positive fiscal shocks. However, the empirical evidence is rather mixed (see, for example, Klein and Winkler 2018; Ramey and Zubairy 2018).
- vi) **Labour market institutions:** The institutional setting could perhaps explain differences in the effectiveness of fiscal policies between countries. Theory predicts that countries with more rigid labour markets would be expected to have larger fiscal multipliers; that is, minimum wages and stringent employment protection legislation imply reduced wage flexibility and, as such, tend to amplify the response of output to demand shocks (Woodford 2011).

The extent to which the magnitude of fiscal multipliers varies according to a country's level of development ultimately remains an empirical question. For instance, one may argue that fiscal multipliers should be larger in emerging and developing economies than in advanced countries because the share of "hand-to-mouth" or non-Ricardian households⁶ is undoubtedly higher in the former context (Brinca et al. 2016). However, it could also be that lower administration capacity and greater inefficiencies related to government spending dampen the output response in developing countries (Furceri and Li 2017).

Last, but not least, it is hard to draw conclusions on whether jobs have been created where they were needed, since the impact of fiscal policy on employment is not direct but derived from its effects on output. In addition, it is not possible to say anything about policy-specific transmission mechanisms that occur in the labour market, or the possibly heterogeneous employment response across different segments of the labour force. Some categories of workers are generally more susceptible than others to job losses during recessions. For instance, the 2008 crisis had a more detrimental impact on male blue-collar workers; in contrast, the COVID-19 crisis hit workers in sales and service sectors disproportionately – sectors in which women are over-represented. Correspondingly, generic countercyclical expansions could, perhaps, increase aggregate employment but are unlikely to induce job creation in those sectors that suffered the most, possibly contributing to further occupational polarization.⁷

- c) Governments can induce changes in labour demand and supply through specific labour market policies and social protection programmes.

Active labour market policies (ALMPs) are publicly financed interventions intended to improve the functioning of the labour market by inducing changes in labour demand and labour supply, as well as their matching process. Specifically, these policies aim to preserve existing jobs and create new employment opportunities, encouraging labour market attachment and the reintegration of long-term unemployed and inactive individuals, and facilitating the job-search and job-matching process. In practice, they target labour market outsiders – all unemployed and inactive individuals.

The Organisation for Economic Co-ordination and Development (OECD) database classifies ALMPs into six broad categories: (i) training; (ii) employment incentives; (iii) direct job creation; (iv) start-up incentives; (v) public employment services and administration; (vi) sheltered and supported employment and rehabilitation.

⁶ Hand-to-mouth or non-Ricardian households are those agents whose consumption follows their current income due to their inability to borrow and smooth consumption intertemporally.

⁷ Bredemeier et al. (2017) provide persuasive evidence that countercyclical fiscal policy is effective in stabilizing aggregate employment in recessions but destabilizes its composition (shifting the bias towards pink-collar workers).

Training-based programmes promote the reintegration and employability of unemployed individuals through skills acquisition. Employment subsidies are financial incentives paid to firms to either preserve existing jobs (e.g. short-time work schemes) or create new ones (e.g. hiring and wage subsidies) by reducing their wage bill. Start-up incentives encourage self-employment or prompt individuals to start their own businesses through the provision of loans and consulting services. Direct job creation, for instance public works schemes, are primarily used in developing countries to reduce unemployment and protect vulnerable households from negative shocks (e.g. macroeconomic, weather and idiosyncratic shocks). Public employment services (PES) facilitate the reintegration of welfare recipients (by the use of activation and sanction measures) and enhance the job-matching process by delivering job-search assistance, counselling and intermediation support. Finally, sheltered and supported employment and rehabilitation consists of subsidies and vocational rehabilitation for the productive employment of persons with a permanently (or long-term) reduced capacity to work.

Social protection transfers: Unemployment insurance and unemployment assistance protect workers against labour market risks by providing them with income replacement in the event of a job loss (e.g. UBs). UBs act as automatic stabilizers for aggregate demand over the business cycle by smoothing the consumption of the unemployed (i.e. mitigating income fluctuations). Other social protection programmes, such as old-age pensions, disability benefits, family benefits, childcare and healthcare, are intended to increase the welfare of individuals and reduce or prevent poverty throughout their life cycle. Thus, the objectives of income support schemes go way beyond labour market outcomes as they represent important buffers against not only negative economic shocks but also idiosyncratic ones (such as disability). However, according to some commentators, overly generous income support schemes might be associated with work disincentives and a corresponding decline in labour supply.

When these interventions are directed at specific socio-demographic groups – such as low-skilled, informal workers, old-age workers, youth, disabled persons or women, for example – they have the potential to considerably reduce inequalities and promote labour market inclusiveness. We will discuss this throughout the paper using four dimensions – access, fairness, protection and voice – recently proposed by El-Ganainy et al. (2021). All social protection programmes entail a significant insurance component, thereby increasing protection, whereas ALMPs can facilitate labour market access of some groups that typically face discriminatory barriers, enhance their bargaining power (voice) and, consequently, reduce persistent wage gaps (thereby increasing fairness).

Since policies interact with each other, it is important to take into account complementarities and spillovers in the analysis of their effects.

Complementarities: In some cases, a policy is introduced to mitigate the risks associated with another policy. For instance, income support policies, such as unemployment and disability benefits, are likely to create work disincentives and might, therefore, be more effective when complemented by appropriate activation measures that strengthen work incentives, encourage reintegration and help welfare beneficiaries back into work (Boone and van Ours 2006). Therefore, one should expect a positive correlation between the two types of policy. In other instances, the policy mix is deliberately designed to compound the intended outcomes of individual interventions. For example, a policy package entailing PES and training programmes can strengthen the positive effects of both elements.

Substitution: Spillovers can occur even unintentionally, especially when there is a lack of policy coordination. Specifically, the effects of one policy could be partly offset by the existence of another. For instance, pension reforms (such as an increase in the statutory normal or early pensionable age) aim to increase the labour supply of senior workers and reduce pressure on public finances. However, the effectiveness of the reform will undoubtedly depend on the existence and generosity of alternative routes to retirement (e.g. disability and unemployment benefits). To put it another way, an increase in retirement age may increase the number of unemployment assistance or disability benefit claimants. At the same time, more generous UBs could considerably reduce enrolment in other social programmes (such as disability benefits), which are more difficult to access.

▶ 2 Literature review

The effectiveness of fiscal policy is typically assessed through the estimation of fiscal multipliers, posing questions such as: By how much does output rise in response to a 1 percentage point increase in government spending (or 1 per cent tax cut)? What factors shape the size of fiscal multipliers? However, in this framework, employment is only a “side-effect” derived from the output response. Another research stream examines the effects of various labour market institutions and structural reforms in the area of employment protection legislation, UBs, minimum wage and product market regulation, as well as their complementarities with economic shocks. The central hypothesis of these studies is that labour institutions lead to inefficiencies that prevent employment and productivity growth. The more recent evidence is based on impulse response functions (i.e. local projections) that address the following set of questions: Does a reduction in UBs (shock) – or a 1 percentage point increase in public spending on ALMPs – affect unemployment and, if so, how quickly do effects materialize? Does the size of the impact depend on business cycle conditions and monetary policy regime? However, they are silent on the effect of specific policies, which is, in turn, addressed by a further research stream that attempts to explain variations in key labour market outcomes – unemployment, employment, wages or unemployment flows – corresponding to changes in specific policies (such as training, employment subsidies, disability benefits, family policies, UBs) and their complementarities. We will mostly comment on the signs and significance of the relationships because the magnitude of coefficients is not necessarily comparable across studies due to differences in methodology and indicators used.⁸

In contrast, the impact evaluation literature examining the effects of specific fiscally relevant policies has relied either on randomized control trials or quasi-experimental approaches (difference in difference, propensity score matching, regression discontinuity). These studies typically compare the mean outcomes between treatment and control groups, and respond to the question: What is the impact of a programme (i.e. hiring subsidies) on an outcome of interest (e.g. target group) if all other things are equal?

2.1 Fiscal multipliers

The research on fiscal multipliers is a long way from delivering a consensual view, due to differences in underlying assumptions and modelling approaches (e.g. dynamic stochastic general equilibrium (DSGE) and real business cycle (RBC) modelling predict a decline in consumption, whereas backward-looking models with a Keynesian flavour suggest higher consumption). Apart from methodology,⁹ the magnitude of fiscal multipliers depends on the economic context and type of stimulus. Gechert (2015), using meta-regression analysis based on 104 empirical and simulation-based studies, concludes that public spending multipliers range from 0.7 to 1.¹⁰ Tax reliefs and transfers yield significantly lower multipliers (by 0.3–0.4 units), while public investment delivers a multiplier that is larger in size (by 0.6 units). Nevertheless, the general findings are in line with the theoretical predictions about country specificities. First, the fiscal multiplier tends to be lower in more open economies. Economies with a higher import-to-GDP share have lower multipliers due to leakage via the import channel. Second, the higher the share of non-Ricardian agents, the higher is the

⁸ For instance, studies typically use: (i) spending as a share of GDP; (ii) spending per unemployed; (iii) ratio between spending as a share of GDP over the share of unemployed in the population to control for the fact that expenditure tends to increase with the number of unemployed. When it comes to UBs, additional indicators are used as well (e.g. initial or average replacement rates and the duration of the payments).

⁹ With respect to the vector autoregression (VAR) models: RBC and DSGE models produce significantly lower impacts, while backward-looking macroeconomic models report higher estimates.

¹⁰ For instance, public employment delivers a somewhat higher multiplier than public spending in general, with a high significance among estimation-based approaches only. A recent literature survey by Ramey (2019) supports earlier findings, suggesting that the size of the spending multiplier lies in the range of 0.6–1.

fiscal multiplier. Third, when central banks pursue inflation-targeting measures by following some form of Taylor rule, a monetary response partly crowds out investment and/or consumption through an increase in the real interest rate, leading to lower multipliers. In contrast, fixed real interest rates or a zero lower bound regime leads to higher multipliers.

However, this meta-analysis does not reveal anything about the extent to which the level of development influences disparities between economies. To gain an insight into this issue, we examine findings from two relatively recent studies that use the same method to estimate fiscal multipliers but focus on different country groups (advanced countries versus emerging and developing countries). Abiad et al. (2016), using local projections, examine the effect of public investment in 17 advanced economies over the period 1985–2013 and find that the short-term fiscal multiplier is around 0.4, whereas the medium-term one is about 1.4. The authors show that the expansionary effect is higher during periods of economic slack and monetary accommodation. Moreover, debt-financed public investments are more effective than budget-neutral measures in boosting output and reducing unemployment and, more importantly, without increasing funding costs (proxied by domestic real interest rates). Furceri and Li (2017) corroborate some of these findings using the sample of emerging and developing economies from the period 1990–2013; specifically, fiscal multipliers are higher during periods of low economic growth and in the presence of more efficient public investments. However, the magnitude of the public investment multiplier is much smaller than in advanced economies (0.2). In contrast with Abiad et al. (2016), Furceri and Li show that fiscal policy is virtually ineffective in countries characterized by high levels of debt as it increases the pressures on public debt sustainability, which in turn raises interest rates, offsetting the initial positive effects. Furthermore, in line with theoretical predictions, they suggest that the fiscal multiplier is higher under fixed¹¹ than under flexible exchange rate regimes and higher in countries characterized by lower import propensity. Conversely, the output is unresponsive to fiscal stimulus in countries marked by high trade openness. To summarize, multipliers in emerging and developing economies are smaller than those in advanced economies, particularly when public debt is high and in the case of flexible exchange rate regimes.

Furthermore, Lastauskas and Stakėnas (2020) estimate the reaction of impulse response functions to reforms in UBs and spending on ALMPs using local projections. Specifically, they examine whether their impact is shaped by an economy's monetary policy stance (accommodation versus tightening) and its monetary policy regime (before the introduction of the euro and afterwards). According to their estimates, more generous UBs strategies tend to increase unemployment unless they are implemented under monetary policy accommodation. Likewise, ALMPs are only effective at reducing unemployment in the latter context. Moreover, as a response to a 1 per cent increase in UBs replacement rates, the real effective exchange rate depreciates in an environment of independent monetary policy and monetary tightening, while there is no effect under monetary accommodation. In contrast, the real effective exchange rate tends to appreciate under conditions of loosening monetary policy and depreciate marginally in a scenario of tightening monetary policy within the monetary union, implying that any loss in a country's competitiveness is amplified under monetary union. Overall, these findings shed light on the importance of accounting for monetary policy stance and regime – an issue on which cross-country evidence from panel regressions is virtually silent. Along the same lines, Duval and Furceri (2018) show that increased public spending on ALMPs has larger employment effects during periods of economic slack, which is in line with the literature on fiscal multipliers. In contrast, while expansionary during good times, a reform entailing a reduction in the generosity of UBs is contractionary in periods of low growth, due to the negative demand effect.

¹¹ Aiyar et al. (2019) find that a fixed exchange rate regime, coupled with more rigid markets (both product and labour markets), makes fiscal policy even more effective.

2.2 Direct public job creation

To produce public goods and provide public services, governments require labour inputs. Indeed, public sector employment represents a large labour market segment in developed countries, although its share in total employment varies significantly across countries, as reported in Figure A2. It ranges from 15 to 30 per cent of total employment in selected European economies, while the size of the public sector in developing countries is much smaller. Public sector wages therefore represent a significant segment of government expenditure. Moreover, in all European countries, gender employment gaps exist in the private sector – with men outnumbering women in all countries under consideration – while gender equality has been achieved (and in some instances overachieved) in the public sector (see Figure A3). The opposite holds true for selected African countries for which data is available (see Figure A4).

This descriptive evidence makes us question whether governments could promote labour market inclusiveness in terms of access and fairness. Generally, public sector wages are regulated, transparent and less dispersed than those in the private sector (Garibaldi and Gomes 2020). Thus, workers performing the same job are typically paid equally irrespective of their productivity, age, gender or race. Many governments reduce persistent employment and wage gaps in marginalized groups through public sector employment policies and public works schemes, leading to a corresponding increase in their bargaining power (voice) with additional positive spillover effects in the private sector (Caponi 2017).

During periods of economic slack, governments can directly increase the quantity (as well as the quality) of available jobs through expansion of public sector employment¹² (e.g. healthcare and education workers and public administration posts). Direct job creation may also reduce the informality rate by facilitating the integration of informal workers into the public sector, which is normally characterized by lower rates of informality. On the other hand, governments may also act as an “employer of last resort” through public works schemes. In the latter context, the government’s intention is to directly create temporary public employment in order to provide income support to the most vulnerable. This policy is popular in developing countries as it acts a safety net against negative shocks (e.g. weather shocks, macroeconomic shocks, idiosyncratic shocks), thereby preventing or reducing poverty (Subbarao et al. 2012).

Hence, direct public job creation – under the assumption that private-sector employment and labour force participation are both fixed – will lead to lower unemployment stock. However, these two components of public sectors are likely to have different implications for labour flows, whereby the former are characterized by higher stability, i.e. lower inflows and outflows of public employment (Garibaldi and Gomes 2020). In contrast, public works schemes are often of short duration, thereby leading to higher flow rates.

A rise in public employment may also generate positive spillovers, in terms of local development and infrastructure and enhancing the quality of public services (e.g. healthcare, education and transport).¹³ Similarly, targeted public employment policies can help to stimulate regional development and address regional disparities by expanding the employment opportunities in areas of high unemployment.

2.2.1 Effects on private sector employment, participation and net unemployment

The theoretical framework proposed in Algan et al. (2002) starts from a basic assumption: workers choose to supply labour either to the private or the public sector. Firms pay wages equivalent to the marginal product of labour while governments do not maximize profits and pay wages that are not necessarily contingent on productivity. Positive public–private wage differential – i.e. higher public job rents – gives more

¹² This approach was adopted during the year 2020, through extensive recruiting of healthcare personnel due to the necessity for mass COVID-19 testing and vaccination.

¹³ See Antonopoulos and Kim (2011) for a case study in South Africa and the United States.

bargaining power to workers and generates a pool of jobseekers queuing for public sector jobs. To put it another way, higher public job rents make these jobs more attractive, crowding out private sector employment and putting pressure on private sector wages. Conversely, if public–private wage differentials are small, the crowding-out effect will be negligible. Note that in the case of monopsony, both employment and wage equilibrium levels are lower than they would have been under conditions of perfect competition. Therefore, higher public wages – analogous to a rise in minimum wages – may lead to both higher wages and higher employment in the private sector. Furthermore, higher public job rents may increase labour force participation – for example among discouraged, inactive and informal workers – which in turn dampens (at least partly) the crowding-out effect as well as the intended effect on unemployment.

Furthermore, an increase in public sector employment could also induce a shift in the composition of private sector employment from more productive tradeable sectors to less productive non-tradeable sectors, without affecting total private sector employment but reducing the country's competitiveness (Faggio and Overman 2014). Assuming that the public sector produces non-tradable goods and services, when public and private activities are complementary, an increase in public sector employment could crowd in private sector jobs by reducing unemployment and increasing aggregate demand (Dale-Olsen and Schøne 2020). At the same time, higher wages may crowd out private employment in the tradable sector, given that exporting firms are price takers in international markets and cannot compensate for a rise in labour cost by increasing prices (Garibaldi and Gomes 2020).

To summarize, direct public job creation may, first, reduce unemployment rates and, second, increase labour force participation and decrease informality rates by facilitating the reintegration of discouraged, inactive and informal workers. Needless to say, if an increase in labour supply exceeds the number of available jobs under the public works scheme, this will lead to higher unemployment rates. The third effect of direct job creation is to increase the wage level if the public–private wage gap is positive, but it may also crowd out private sector jobs. Therefore, theoretical predictions about the net unemployment effect are ambiguous and remain an empirical question.

In what follows, we analyse several studies that explored the labour market effects of public employment at the micro and macro level, reporting mixed results.

2.2.2 Some evidence on public sector employment in advanced countries

The cross-country evidence for developed countries within the literature on the private–public sector nexus suggests that the crowding-out effect typically prevails, eventually dampening or reversing the net unemployment effect. For instance, Algan et al. (2002) use the OECD cross-country data over the long period 1960–2000 to estimate the impact of public sector employment on labour market outcomes. They find that, on average, for every 10 jobs created in the public sector, 15 private sector jobs are displaced. However, the issue of endogeneity looms large in their analysis. Considering the long time span, they account for the time effect by assuming that it is the same across countries (failing to control for country-specific trends), which might have considerably affected their variables of interest. Similarly, recent empirical findings from both advanced and developing countries (Behar and Mok 2019) suggest that public jobs (at least partly) crowd out private jobs, albeit to a lesser degree in developing countries, while the impact on net unemployment is statistically insignificant. The authors' decision to pool advanced and developing countries is problematic because structural and institutional differences between these two country groups are substantial. In line with this, Stepanyan and Leigh (2015) show that public jobs displace private ones, especially in countries with high public wage premiums and higher rates of substitution in the production market between the private and public sectors. However, the results are not robust when they split the sample of middle-income countries according to their different institutional settings – the negative public employment effect on unemployment that was initially found disappears. Instead, Gal and Theising (2015) show that public employment correlates positively with the aggregate labour force participation rate and – in some specifications – also with the employment rate, while the relationship with unemployment is never statistically different from zero. It seems to benefit all skill groups, although the magnitude of the public

sector coefficient is higher for the middle-skilled. Finally, in terms of unemployment flows, De Serres et al. (2012) show that direct job creation reduces significantly both inflows into and outflows from unemployment. They also find that this holds for all sub-populations (youth, “prime-age” women, and men), although the negative effect on the unemployment inflows is more pronounced for youth relative to other groups. Likewise, Ernst (2015) finds that direct job creation significantly reduces unemployment inflows, but its impact on unemployment outflows, while positive, is not statistically different from zero.

Another question explored is the degree to which public sector employment is crowding out private employment along the business cycle. Using the local projections method, Lamo et al. (2016) find that public employment crowds in private sector employment during periods of high unemployment and recessions, while the opposite is true in “normal” times, when the economy is not in a recessionary phase.¹⁴ Furthermore, they find that private-sector wages increase in response to the rise in public wages irrespective of the business cycle in the euro area.

The microeconomic evidence suggests that the effect of public sector employment on private jobs is more relevant at the local level. A recent impact evaluation study based on Norwegian administrative data reveals that new public establishments positively affect private sector employment, wages and sales located in their proximity (Dale-Olsen and Schøne 2020). Specifically, for every 10 jobs created in the public sector, 1.3 additional jobs are created locally in the private sector. They point out that the effect is relatively larger in the private sectors that are closely related to public activities (e.g. “Education, health and social services”). Faggio (2019) reaches similar conclusions using the UK data, suggesting that the positive spillover effects are highly localized. The author argues that for every 10 public jobs, 11 private sector jobs are crowded in locally. Importantly, the multiplier effect is significant in the service sector, implying a compositional employment shift towards services. This new empirical evidence appears to strengthen the case for public job creation as an intervention intended to support local development and growth. However, the compositional shift from tradeable to non-tradeable sectors (e.g. construction), could have a dampening effect on the country’s competitiveness (Faggio and Overman 2014).

In conclusion, there is still a substantial research gap in this area. The empirical evidence is relatively scarce and mixed results emerge. While some studies suggest that public jobs crowd out jobs in the private sector, others find positive local spillover effects on private sector employment or compositional changes. Cross-country studies typically fail to isolate causation from the correlation, which effectively leads to an overestimation of the crowding-out effect. Therefore, further research efforts – which take into account the interactions between public and private sectors – are necessary to gain a clearer insight into the extent to which public sector employment affects not only private sector employment but labour market inclusivity as well.

2.2.3 Some evidence on public works in developing countries

Key among ALMPs in developing countries are public works schemes (see Subbarao et al. 2012). Much research has been done on the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) in India, one of the largest public works programmes in the world, active since 2006 (see Box 1 for details). According to Azam (2012), the scheme generated positive effects on employment, labour force participation and wages. Moreover, it both encouraged females to participate in the labour force and boosted their wages (by 8 per cent). Berg et al. (2014) corroborate these findings, suggesting that effects are persistent over time and concentrated in districts characterized by a more efficient programme implementation. In line with this, Imbert and Papp (2015) show that the scheme substantially increased private sector wages for casual labour (by 4.7 per cent). Nevertheless, they argue that the scheme created distortions in the labour market as public employment for men increased at the expense of the private sector (i.e. due to the crowding-out effect). Zimmermann (2020) challenged Imbert and Papp’s results, finding no evidence

¹⁴ This holds both for Spain on its own and for the euro area, although the short-term positive effect in “bad times” and negative effect in “good times” are greater in magnitude for the euro area aggregate relative to Spain.

of public works displacing private sector jobs but rather occupational changes from private casual jobs to family employment. Essentially, MGNREGS, acting as a safety net, mitigates the insecurity associated with the latter form of employment.

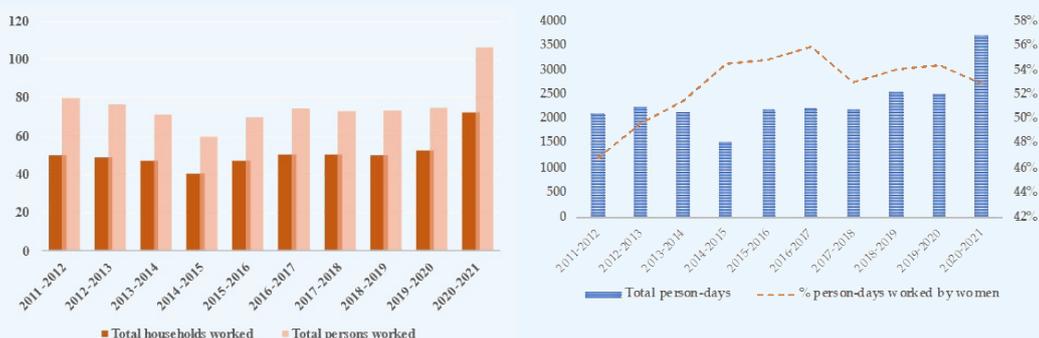
Altogether, the Indian public works scheme enhanced the bargaining power of beneficiaries by paying a minimum wage, which in turn put upward pressure on the agricultural market wages (normally set below the legal minimum). Muralidharan et al. (2018) estimate general equilibrium effects and offer persuasive evidence that the programme considerably increased the income of vulnerable households and reduced poverty, not only through direct wages but also through indirect channels. Specifically, while the programme accounts only for 15 per cent of the rise in income, the remaining 85 per cent is due to the increases in private sector wages. They find that higher private sector wages induced by MGNREGS led to higher levels of employment in both agricultural and non-agricultural sectors (e.g. manufacturing and construction, wholesale and retail). However, profits from land ownership declined in line with wage increases, especially in areas characterized by more concentrated landholdings. Finally, income gains translated into higher consumption rather than savings, boosting local demand and stimulating broader economic activities.

The impact evaluation studies on the effect of public works in Latin America and the Caribbean (LAC) deliver somewhat mixed results: the Peruvian workfare scheme (*Construyendo Perú*) increased both labour force participation and employment while, in Colombia, *Empleos en Acción* positively affected female earnings; in contrast, the Bolivian programme *PLANE* had adverse effects on both employment and wages (Escudero et al. 2017).

Some governments in Latin American have relied on combined approaches (i.e. income support coupled with activation measures). For instance, Escudero et al. (2020) examine the labour market outcomes of the public works scheme (*Trabajo por Uruguay*) and cash transfer (*Ingreso Ciudadano*) individually as well as considering their joint effect. The objective of the former was to provide temporary employment, increase the future employability of beneficiaries and enhance social inclusion, while the passive component aimed to provide monetary support to vulnerable households and assist them in meeting their basic needs. The study does not find any statistically significant effect on their variables of interest – labour market status (employed, unemployed, inactive) and job quality (hours worked, hourly earnings, working poor). Overall, it seems that the workfare programme in Uruguay was unsuccessful in delivering concrete labour market outcomes. The authors suggest that a possible explanation for such unsatisfactory results was the relatively short duration of *Trabajo por Uruguay*, which did not suffice to increase the employability of its beneficiaries (Escudero et al. 2017; 2020). Another assessment by Amarante et al. (2011), however, suggests that it had adverse effects on employment and wages for recipients in comparison to non-recipients (especially for men).

► **Box 1. Mahatma Gandhi National Rural Employment Guarantee Scheme, India**

The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) in India introduced a right to (public) work for up to 100 days annually at the legal minimum wage for all rural households. On average, MGNREGS reaches around 50 million households and about 70 million individuals annually.¹⁵ The figure below reports the number of households and individuals who benefited from the scheme over the past decade.



Source: <http://www.nrega.nic.in>

The underlying mechanism, based on self-selection into employment, allows agricultural households to demand jobs when they need them. Hence, it has the potential to increase labour force participation and the employment rate if inactive or unemployed individuals apply for the scheme. It also represents an opportunity to reduce the gender disparities in rural India by requiring that at least one-third of recipients are women and providing equal pay for women and men.¹⁶ According to the administrative data, the scheme's gender quota is overreached, as more than half of the total person-days are worked by women.¹⁷

2.3 Active labour market programmes

2.3.1 Public employment services

Public employment services (PES) help to reduce the mismatch between labour demand and labour supply. By providing job-search assistance to unemployed individuals, PES intend to overcome market failures arising from imperfect information. Similarly, they can facilitate higher-quality job matches by assessing the available vacancies and matching them with jobseekers' profiles. The intermediating role of the job placement agencies between jobseekers and employers may facilitate the adaptation of jobseekers' skills to the needs of the local labour market and enhance the productivity of the local firms. In addition, the counselling and monitoring role of PES aims to minimize the work disincentives that can potentially arise from generous protective labour market policies and facilitate the reintegration of inactive welfare beneficiaries. Strengthening the role of PES is perhaps even more relevant in the context of developing countries characterized by high informality rates, where hiring usually takes place via informal channels (Escudero 2018).

However, these positive effects could be considerably weakened by deadweight costs, i.e. providing job-search assistance to individuals who would have been re-employed even in the absence of support. In

¹⁵ The administrative data suggests that all households who demanded work were included in the scheme (99.81 per cent in the 2019/2020 scheme). In contrast, some empirical evidence has revealed that official figures were overestimated (Dutta et al. 2012).

¹⁶ The market wage in India is typically below the minimum wage (especially for women).

¹⁷ Administrative data is available at https://nrega.nic.in/Nregahome/MGNREGA_new/Nrega_home.aspx.

addition, public placement agencies are increasingly outsourcing their services to private agencies with the alleged goal of increasing cost-efficiency, leading to two additional risks (Behaghel et al. 2014): namely, “cream-skimming”, which occurs when placement agents select for the programme those individuals with higher employability chances (e.g. the highly skilled) instead of hard-to-place unemployed persons, and providing only the bare minimum of services to the second group (so-called “parking”). While not entirely avoidable, these practices can be minimized by having an appropriate contract structure in place. For instance, if the payment structure foresees large upfront payments to private service providers, then private (and profit-maximizing) agencies have an incentive to maximize the number of enrolments in the programme at the expense of the quality of service delivered (parking). However, if payments are performance-based (i.e. contingent on successful job placements), concerns about cream-skimming or “cherry-picking” risks arise. Thus, the design of the outsourcing contract structure remains crucial to balance these risks.

Empirical evidence

There is some consensus in the empirical literature on the effectiveness of PES. Both microeconomic (Card et al. 2018) and macroeconomic studies point to their positive labour market effects. The evidence from OECD countries suggests that higher expenditure on PES effectively reduces unemployment rates (Bassanini and Duval 2006; Boone and van Ours 2004). De Serres et al. (2012), using cross-country data covering the period 1987–2007, show that PES decrease inflow and increase outflow rates from unemployment. This is (partly) in contrast with Ernst (2015), who shows that the spending on PES increases unemployment inflows, implying that PES is likely to benefit the transition of inactive individuals back to the market, in line with the activating role of PES.

On the other hand, there is somewhat less consensus when public employment services are outsourced to private agencies. The results from Behaghel et al. (2014) challenge the standard expectation that private job placement agencies are expected to be more efficient than public ones, finding that public providers outperform the former using a randomized experiment in France. Essentially, private providers maximize the enrolment of jobseekers at the expense of the quality of service provided (i.e. with minimum effort) due to large upfront payments rather than the cream-skimming effect. In terms of decreasing total unemployment duration, public agencies fare better than private ones. In specific terms, private agencies do not reduce the total number of days spent unemployed, while PES does decrease the duration of unemployment by around 7 per cent, thereby generating UBs savings. Altogether, their findings imply that job counselling is an effective tool in increasing the employability of UBs recipients, albeit outsourcing this service to private providers is suboptimal. Similar results emerge for contracting out job placement services in Germany. Krug and Stephan (2013) find that public programmes outperform private ones in the short term, although their respective effects converge after a year and a half. Furthermore, Rehwald et al. (2017) compare the effectiveness of public and private providers in raising the job-finding rates of highly educated unemployed individuals in Denmark. Their results suggest that differences between the two are not significant at conventional levels. However, from a cost-efficiency perspective, public providers fare better as financing costs are higher for the provision of private employment services.

While previous studies are silent on the net aggregate effects, Crépon et al. (2013) explore both direct and indirect effects (i.e. displacement) of private job-counselling programmes targeted at young jobseekers with at least a two-year college degree in France.¹⁸ The evidence from a randomized experiment implies that the employment effect among the treatment group is positive, but negative for untreated jobseekers. Correspondingly, the net employment effect is negligible. Moreover, they provide evidence that fixed-term jobs are not a “stepping-stone” into steady employment as the positive employment effect disappears one year after the treatment. Importantly, displacement effects are more pronounced during labour market slacks (when competition is stronger).

¹⁸ Payment to private agencies was contingent on two conditions: the individual finding a job and staying employed for at least six months.

To conclude, the reviewed evidence from the selected studies favours public job-placement provision. However, this does not necessarily mean that private providers are inefficient per se, but it could be that the structure of payment (e.g. large upfront payments) may create perverse incentives. Surprisingly, however, no cream-skimming or cherry-picking occurs when job placement services are outsourced to private actors. Instead, there is some indication of the “parking” effect, i.e. skimping on the quality of services provided (Behaghel et al. 2014).

Some evidence points to a degree of complementarity between PES and other active and passive labour market policies. For instance, Blundell et al. (2004) examine the impact of the British “New Deal for the Young Unemployed” programme, which entailed a package of intervention measures (i.e. job-search assistance, wage subsidies, training and temporary government jobs) aimed at facilitating the transition into work of unemployment insurance claimants aged between 18 and 24. The authors focus on the programme’s two components: job-search assistance and the wage subsidy paid to the employer. They find that participation in the programme increased the transitions into employment of young men by around 5 percentage points, out of which one-fifth is due to the job-search assistance. While they do not investigate the long-term effects, they show that the programme appears to fare better in the first quarter compared to the subsequent periods.

2.3.2 Training-based programmes

Government-sponsored training programmes are intended to enhance the employment prospects of beneficiaries by providing them with either general or specific training through which they can acquire new technical and soft skills. In turn, this skill-upgrading promotes the reintegration of inactive and unemployed persons into the labour market and helps their career advancement, possibly leading to higher post-unemployment earnings (Brown and Koettl 2015). Furthermore, well-designed training schemes may reduce labour market mismatch if they can support workers in adapting their skills to the requirements of the local labour market. In addition to this, targeted training may facilitate occupational transitions and structural adjustments (Auer et al. 2008). Intuitively, displaced workers in “old” sectors could be retrained and matched with new, in-demand jobs in new sectors, thereby accommodating structural change and the evolution of industrial systems. Therefore, training-based ALMPs are expected to have a positive effect on the employment and matching process as well as on post-unemployment conditions (e.g. wages). However, these positive effects may be weakened by an adverse “locking-in” risk, when workers reduce their job-search activity during their programme participation, as well as considerable deadweight costs (Brown and Koettl 2015). In some cases, training schemes can even compensate for the lack of formal education and serve as a stepping-stone to longer-term employment.

First-time jobseekers can face significant barriers to entering the labour market due to their lack of experience, especially in countries characterized by weak school-to-work bonds, a situation which is generally more pronounced during recessions. The youth unemployment rate in the OECD countries in the third quarter of 2021 ranged from less than 5 per cent in Japan to almost 40 per cent in Costa Rica (OECD 2021). Countries with a youth unemployment rate exceeding 20 per cent are also the countries with significant gender gaps (this gap was particularly large for Costa Rica, whose female youth unemployment rate was 15 percentage points higher than that of males). In addition, the ratio between the youth and prime-age unemployment rates reflects the disadvantaged position of youth in the labour market. According to the ILO, Southern Asia had the highest ratio of youth-to-adult unemployment in 2019, followed by South-Eastern Asia and the Pacific at 6.2 and the Arab States at 4. In advanced economies, Caliendo and Schmidl (2016) report that, in 2013, this ratio ranged from 1.6 in Germany to almost 4 in Sweden (the unemployment rate was four times higher for youth than for prime-age workers in the latter). These barriers and discriminations against youth may be substantially reduced by the use of ALMPs directed at youth and countries often rely on targeted training schemes (on-the-job training) or employment subsidies to tackle this issue.

Empirical evidence

The empirical evidence is not clear-cut. Most impact evaluation evidence on the effectiveness of training programmes in Latin America and the Caribbean, recently reviewed by Escudero et al. (2017), indicates significantly positive impacts on employment, earnings and the probability of being in formal employment. Several studies stressed that the positive impact on wages and employability is more pronounced for women and for youth. Hence, training programmes introduced in LAC, perhaps, made labour markets more inclusive in terms of access and fairness for these disadvantaged groups. In contrast, the effect of training on the employment of youth is ambiguous in Europe (Kluve 2010). The impact evaluation studies surveyed by Caliendo and Schmidl (2016) suggest that their impact is mostly positive in France and Germany and insignificant in Austria and Denmark, while a negative effect prevails in Norway and Sweden.

Even the evidence from aggregate cross-country analysis is somewhat mixed. Boone and van Ours (2004) and Escudero (2018) find that expenditure on training correlates positively with employment and negatively with the unemployment rate. However, De Serres et al. (2012) and Ernst (2015) find that training programmes increase both unemployment inflows – suggesting a return of inactive individuals to the market – and unemployment outflows, implying no, or only a limited, effect on the measured unemployment rate.

Some evidence from the United States calls for more sectoral-specific training methods that take into account the particular needs of in-demand jobs. Katz et al. (2020) review the evidence from four randomized control trials which suggest that sector-specific training programmes generate persistent improvements in earnings. These programmes are introduced to train and place jobseekers in “high-quality” jobs in industries such as information technology (IT) and manufacturing, with strong current local labour demand where firms offer higher wages and career promotion opportunities. In essence, participants are screened pre-enrolment and accordingly placed into appropriate training schemes through which they can acquire in-demand skills that facilitate their entry to high-paying sectors. Importantly, they provide compelling evidence that screening and job-placement services underperform in the absence of complementary sectoral occupational skills training, which acts as a “stepping-stone” for low-wage workers without university-level education to access high-wage, in-demand jobs.

The retraining programmes should help workers to adjust their skills so that they can gain the competencies required by new technologies. However, some argue that this skill-upgrading process is lengthy and costly, emphasizing the significant role that other public policies play (i.e. industrial and innovation policies). These two policies could be used to spearhead technological change, by creating (currently missing) incentives for the adoption of labour-friendly technologies and matching technology with existing skills, rather than the other way round (Rodrik and Stantcheva 2021).

2.3.3 Employment subsidies

Governments may induce changes in unemployment flows by providing financial incentives to firms, in the form of direct transfers or tax credits, which affect their hiring and firing decisions. Employment subsidies can be grouped according to their objectives into employment retention schemes, wage subsidies and hiring subsidies.

Employment retention schemes are publicly funded measures aimed at preserving at-risk jobs. They are (typically) temporary interventions that were used extensively during the 2008 financial crisis, but also recently as a response to the COVID-19 crisis. Most of the advanced and emerging economies have introduced these schemes in some form (e.g. Cassa integrazione in Italy; Kurzarbeit in Germany; the UK furlough scheme),

which significantly reduced job losses (IMF 2021).¹⁹ Figure A5 in the appendix reports take-up rates, which reached unprecedented highs in 2020, notably in Italy (43 per cent).

The employment retention schemes allow firms to adjust their labour inputs – along the intensive margin – in response to negative shocks (e.g. changes in demand) without having to dismiss staff, while the government reimburses eligible workers for the resulting loss of income. Correspondingly, they may be instrumental in preventing a surge in unemployment rates through lower unemployment inflows. Nevertheless, short-time work schemes can generate considerable deadweight costs, if subsidized jobs would have been retained in the absence of the subsidy, and displacement costs, if temporarily retained workers will be dismissed once the subsidy ends (Hijzen and Martin 2013). However, retaining employees, even temporarily, may prevent the erosion of skills that would have occurred if they were dismissed initially. In addition, employment retention schemes may also accentuate labour market segmentation (insiders versus outsiders) if atypical workers are not covered by them (Hijzen and Martin 2013). A further counterargument is that job retention schemes weaken the market selection mechanism (i.e. reallocation of workers from low- to high-productivity firms), which is typically more prominent during economic downturns, by allowing the survival of “zombie” firms. This, in turn, translates into lower aggregate productivity growth.

In contrast, wage and hiring subsidies are financial incentives offered to firms in order to expand employment opportunities. These interventions increase employment chances for outsiders and often target specific categories of workers, including (but not limited to) the long-term unemployed, low-skilled and other disadvantaged groups. The rationale behind employment subsidies is to compensate employers for the real or perceived lower productivity intrinsic to some categories of workers characterized by lower levels of skills or lack of experience. By reducing a firm’s wage bill, they may induce changes in firms’ hiring decisions.

Brown (2015) lays out the characteristics of the two alternative forms of employment subsidies – hiring versus wage subsidies – which we summarize as follows. First, wage subsidies may increase employment at both the intensive and extensive margins, while hiring subsidies affect only the latter. Second, both measures can generate considerable deadweight costs if they subsidize jobs that would have occurred anyway and displacement costs if they crowd out jobs elsewhere. Nevertheless, deadweight costs are generally higher for wage subsidies than for hiring subsidies as they target not only new hires but all employees with specific characteristics. In addition, the duration of wage subsidies may be considerably longer or even permanent. Third, targeted employment subsidies may induce a compositional change in labour demand (e.g. from medium-skilled to low-skilled workers) as they cause a change in relative labour costs between the eligible and non-eligible workforce population. This substitution effect substantially lessens the net employment effect. In the case of hiring subsidies, workers employed under a short-term hiring subsidy may be substituted by new subsidized hires once the subsidy ends, exacerbating job turnover rates without creating employment (“revolving door” effect). Fourth, employment subsidies may increase the earnings of eligible workers if they are able to capture a share of the matching rent, thereby reducing direct employment effects (Brown 2015). Nevertheless, this is unlikely to happen in a labour market characterized by high unemployment rates in which employers have bargaining power over workers (Boockmann 2015). Finally, when it comes to the fiscal implications, wage subsidies have higher financing costs than hiring subsidies. The latter typically cover a smaller proportion of the workforce, relative to the former. In other words, wage subsidies are directed not only at unemployed persons but at all employees with specific characteristics. For instance, Brown et al. (2011) report that the hiring schemes targeting the long-term unemployed concerned only 2.2 per cent of the workforce, while the affected segment of the workforce population was significantly larger in the case of low-wage subsidies, amounting to 13.6 per cent. If these interventions are effective in creating employment, they tend to be self-financing over time through an increase in tax revenues from newly employed workers and fiscal savings resulting from reduced unemployment outflows (e.g. lower UBs, means-tested income support). However, Brown et al. (2011) argue that this is unlikely in the case of wage subsidies due to the large deadweight costs they entail.

¹⁹ They vary between countries according to their eligibility and entitlement rules. See Gentilini et al. (2021) for the review of ongoing interventions implemented globally to combat the COVID-19 crisis.

Furthermore, two additional positive effects may be at work once an employment subsidy is phased out: screening effect and skill formation (Brown 2015). First, in labour markets characterized by asymmetric information, they are used as a screening mechanism that enables firms to learn about workers' productivity, eventually leading to long-term employment. Second, during subsidized employment, workers could adapt or upgrade their skills through "learning-by-doing", possibly enhancing their future employability (Brown and Koettl 2015). Moreover, hiring and wage subsidies can make labour markets more inclusive, provided that they are conditional on hiring specific categories of marginalized workers.

Altogether, while employment subsidies may reduce the unemployment rates of targeted groups, their net effect on employment creation (especially in the long term) and wages is ambiguous and remains an empirical question. Positive selection that generates significant deadweight costs is impossible to completely rule out, but it can be balanced with appropriate programme design.

Moving to the analysis of targeted employment subsidies, most of the available evidence suggests that wage subsidies directed at old-age workers are ineffective, as summarized in Boockmann (2015). For instance, Huttunen et al. (2013) investigate the effect of a low-wage subsidy introduced in Finland to increase demand for full-time senior workers (over 54 years old) earning between 900 and 2000 euros per month. This initiative took place in 2006 and lasted until 2010. Their analysis reveals that there are no significant employment or wage differences between eligible and ineligible members of the workforce population. The intervention did raise employment at the intensive margin for the oldest workers by inducing a shift from part-time to full-time jobs, but it did not incentivize new hires.

Jiménez-Martín et al. (2019) investigate the effectiveness of hiring subsidies as a tool to improve the chance of being employed for people with disabilities in Spain during the period 1990–2014. On average, the hiring programmes do not appear to have improved the employment prospects of workers with disabilities. Nevertheless, the results show that hiring subsidies for permanent employment supported the unemployment outflows to permanent employment of senior workers. In contrast, a subsidy for contract conversion facilitated a shift from temporary to full-time jobs only for women. Furthermore, Baert (2016) shows that disclosing wage subsidy entitlement in the application of disabled candidates did not increase the probability of receiving a positive reaction from employers in Belgium. However, this discouraging result should be interpreted with some caution, considering that entitlement to wage subsidies may prove to be effective at later stages of the hiring process, by increasing the chances of getting a job that is beyond the author's research scope. In any case, applicants with disabilities were almost 50 per cent less likely to get a positive call-back than non-disabled candidates, suggesting their unequal treatment in the Flemish labour market.

The evidence on the effectiveness of wage subsidies directed at youth is mixed (Caliendo and Schmid 2016). Subsidized employment seems to have only a short-lived positive effect. Jordan introduced a pilot subsidy programme aimed at facilitating the school-to-work transition of female graduates. The amount of the financial support corresponded to the minimum wage and it was valid for a maximum period of six months. Groh et al. (2016) reveal that this incentive generated a large positive employment response in the short term, which vanished at the end of the subsidized period. The latter finding reduces the overall benefit of the programme and suggests that subsidized temporary jobs do not act as a "stepping-stone" to long-term employment.

Furthermore, Jaenichen and Stephan (2011) apply matching techniques to estimate the effect of wage subsidies in Germany. Employers could claim subsidies for hard-to-place workers that covered up to 50 per cent of the monthly wage for a maximum period of 12 months. According to their results, the wage subsidy considerably improved the employment prospects of participants; specifically, three years after the start of the programme, subsidized workers were more likely to be in regular employment in comparison to their non-participating unemployed counterparts. However, they find no significant differences in employment prospects between subsidized workers and unsubsidized workers that move directly into employment. The second piece of evidence may weaken the overall results, suggesting, as it does, high deadweight costs. Bernhard et al. (2008) evaluate the average effect of a short-term (up to three months) and medium-term (four to six months) wage subsidy targeted at "needy job-seekers" (i.e. unemployed persons

receiving “unemployment benefit II”²⁰) on their employability. The authors find that, 20 months after entering into subsidized employment, the regular employment rate of the participants is 40 percentage points higher than within different control groups.

In Latin American countries, employment subsidies to the private sector appear to be an effective means of creating employment (Proempleo and REPRO in Argentina), and even for countering informality (Subsidio al Empleo Joven in Chile), while their impact on wages is found to be statistically insignificant (Escudero et al. 2017).

On the other hand, less targeted hiring subsidies appear to be more effective. To name one, Kangasharju’s (2007) assessment of the nationwide wage subsidy in Finland – available to all profitable firms – concludes that there has been a positive employment effect in subsidized firms. Additionally, he finds no supporting evidence for (expected) displacement effects on non-subsidized firms operating in the same industry and region.

The effectiveness of hiring subsidies during crises

Some literature analyses the effectiveness of hiring subsidies in encouraging the creation of new jobs during the global financial crisis. Among these studies, Cahuc et al. (2019) analyse the effect of hiring credits implemented in France in 2009 and show that the introduction of a hiring credit boosted the employment growth rate in eligible firms by 0.8 percentage points. The effect on the number of hours worked is similar to that for employment, suggesting that the substitution effect between incumbent employees and new hires was unlikely to have played a role. The authors underline that the subsidy’s temporary nature, the small subset of qualified firms involved and rigid wages were crucial ingredients for the programme’s effectiveness. Building on this study, Batut (2021) explores the medium-term effects and shows that subsidized employment creation persists even after the subsidy no longer applies. Neumark and Grijalva (2017), utilizing the database of state hiring tax credits in the United States, find positive employment effects of hiring subsidies during the Great Recession of 2007-2009. Also, they argue that some financial incentives perform better than others in creating jobs; specifically, refundable hiring credits and those with recapture clauses.

Tax policy to stimulate an inclusive labour market

Changes in payroll tax are another relevant instrument in this context, albeit these do not represent direct fiscal spending but rather foregone fiscal revenues. In what follows, we survey the empirical evidence from two reforms – a wide payroll tax cut in Colombia and a more targeted differential payroll tax reduction in Sweden. Note that general payroll tax reductions in developing countries are typically intended to encourage formal employment, hence pursuing an explicit goal of a change in the employment status and not necessarily the creation of employment.

In view of the country’s high informality rates, the Colombian Government introduced a tax reform²¹ in 2012, which considerably reduced payroll tax, from 29.5 per cent to 16 per cent of wages, in an attempt to boost formal employment. In addition, the Colombian Government reduced existing corporate income tax from 33 per cent to 25 per cent and introduced a corporate profit tax of 9 per cent (Bernal et al. 2017). The measures therefore represented a form of revenue-neutral shift from labour to corporate taxes. Kugler et al. (2017) provide robust empirical evidence of an increase in formal employment as a result of the reform using individual-, household- and establishment-level data. They find heterogeneous employment responses across different firm-size classes and workers. In particular, the largest employment response is

²⁰ Defined as “means-tested and tax-financed basic income support” (Bernhard et al. 2008, 1).

²¹ The reform entailed a waiver of employers’ social security contributions to healthcare (8.5 percentage points), training (2 percentage points) and family welfare (3 percentage points), representing a total of 13.5 percentage points of tax relief to firms and no variation in employees’ contributions. It affected all employees earning at least one and up to ten minimum wages and self-employed persons with more than one employee.

observed among small firms with fewer than ten employees and for female employees. Moreover, the payroll tax reform not only encouraged employment growth but also enhanced job quality in manufacturing (in terms of the level and share of permanent contracts). Likewise, Bernal et al. (2017), analysing firm-level data, suggest that, on average, the measures significantly increased formal employment and wages. As in Kugler et al. (2017), they show that the tax reform contributed more to employment growth in micro and small firms. In contrast, the employment effect is insignificant at conventional levels in manufacturing and large firms but positive and highly significant in labour-intensive service sectors. Finally, Fernández and Villar (2017) corroborate these findings using individual-level data but their results contrast with those of Kugler et al. (2017), suggesting that the measures predominantly reduced informality rates among workers with low educational attainment and prime-aged men. These studies highlight some relevant aspects of the Colombian payroll tax reduction reform. First, it expanded employment and reduced informality rates of the affected workforce population, irrespective of the level of analysis, methodologies and definitions of formal employment. Second, all studies emphasize heterogeneous employment response according to the firm-size classes. However, the long-term effects and net employment impact are less clear-cut.

Turning now to the evidence from an advanced country, we look at the impact of a targeted payroll tax reduction in Sweden. The reform halved the payroll tax for workers under the age of 27, with the objective of overcoming the country's stubbornly high youth unemployment rates. Egebark and Kaunitz (2018) investigate the short-term impact on youth employment and wages outcomes, using a difference-in-difference approach, and report a small positive (0.27 per cent increase) but heterogeneous employment response and a negligible wage effect of the payroll tax reduction. Specifically, the employment response is higher among the youngest workers but statistically insignificant for foreign-born workers. Based on the cost-benefit analysis, the authors argue that positive effects are relatively marginal in terms of compensating for the high fiscal costs of the reform (i.e. on average, US\$155,000 per job, or nearly four times the average hiring cost for the same age group). In 2015–2016, the Swedish youth preferential tax relief was revoked due to its negligible effects and the high fiscal costs it entailed. A recently published article by Saez et al. (2021) sheds new light on the measure's long-term effects. The study reports that the long-run effects are twice as large as the medium-run, with a short-run impact of a 2.3-point increase in employment for the treated youth over the period 2010–2013 that becomes 4.4 points in 2014–2015, and finally reaching 6.3 points in 2016–2018, in the long run. They interpret this employment persistence even after a phase-out of the policy as "labour-demand-driven hysteresis". Furthermore, the study looks at possible heterogeneities in the employment response by gender and region, concluding that tax reduction turns out to be more effective in regions characterized by higher youth unemployment rates (i.e. top quintile with unemployment higher than 20 per cent). It affected females and males equally in the medium term, while the positive impact for the former is higher after the subsidy was withdrawn. Finally, their fiscal cost calculation suggests that foregone revenues per job amount to less than US\$60,000. This represents a substantial cost reduction in comparison to the earlier estimates by Egebark and Kaunitz (2018) – that the financial cost of the Swedish tax reform was high, while the effects on employment were small in the short run. The positive effects of any reform may take time to materialize, as underlined by Saez et al. (2021), implying possible limitations of a short-sighted analysis. A key takeaway from the Swedish evidence is that the effects of the labour market intervention took some time to materialize. Thus, one should be cautious when interpreting prevailing short-term impact estimates as some interventions may fare better in the long-term by "correcting" the behavioural responses of the affected actors (i.e. reducing existing discrimination towards certain demographic groups).

To summarize, private-sector employment incentives can take various forms (e.g. payroll tax reductions, vouchers, tax credits). They can be either broadly targeted (such as the payroll tax reform in Colombia) or narrowly targeted (as in the case of low-wage senior full-time workers in Finland). In addition, employment subsidies can operate at national or more granular levels, such as regions or industries that are struggling with high unemployment rates. Targeted employment subsidies aim to improve the labour market outcomes of specific groups of workers, but the evidence on their effectiveness is rather mixed.

Across a range of studies, results vary widely and are difficult to compare due to country-specific characteristics. In the case of old-age and disabled workers, the degree of discrimination, institutional settings and

alternative policies in an economy are likely to be relevant factors in shaping employment outcomes. On the demand side, the lack of observed effects when these two specific groups were targeted could perhaps be explained by the presence of persistent discriminatory barriers. Meanwhile, on the supply side, the existence of “generous” early retirement schemes and disability benefits may weaken the effect of employment subsidies. In contrast, the extent to which hiring subsidies are able to increase female employment may depend on complementary policies, such as the availability and generosity of family policies (e.g. childcare).

Furthermore, one study examines the labour market effects of public expenditure on employment incentives by pooling the cross-country OECD data over the period 1985–2016. After controlling for a rich set of variables – institutional, structural, economic and implementation factors – Escudero (2018) provides evidence that employment incentives decrease unemployment rates and increase employment rates. Moreover, the estimated impacts on employment, unemployment and participation rates are higher for low-skilled workers in comparison to the overall population.

Another less well-researched issue concerns the quality of the jobs that are created. It is important to consider not only the quantity of jobs but also their quality. If employment creation schemes are not conditional on the type of contractual arrangement (e.g. permanent versus temporary or part-time versus full-time) they risk exacerbating existing barriers to decent work and creating more atypical jobs. Insecure forms of work are often “traps” rather than “stepping-stones” (ILO 2016). Therefore, hiring subsidies for permanent and full-time contracts should be preferred in order to improve not only the employment quantity but also its quality, especially in those labour markets marked by duality.

Short-time work schemes in advanced countries

Unlike wage and hiring subsidies, there is much more consensus on the positive effects of employment retention schemes during crises, especially if the crises follow a V-shaped pattern (Cahuc 2019). A few studies are highlighted here. Hijzen and Martin (2013) investigate the role played by short-time work (STW) schemes, in 23 OECD countries, in preserving jobs during the financial crisis and the early stages of recovery. Their estimates suggest that STW schemes are effective at retaining jobs during the crisis, as previously found, but if not phased out during the recovery they may actually reduce employment. In addition, they also show that STW schemes not only preserve the existing jobs but may as well mitigate the negative unemployment impact of output shocks. Lydon et al. (2019) reach similar conclusions, pointing out that sectors with higher STW take-up rates exhibit fewer cyclical employment dynamics, suggesting that STW schemes fulfil a strong fiscal stabilizing function. Another study by Brey and Hertweck (2020) provides supporting evidence of STW reducing unemployment, although this effect fades out at higher take-up rates. Specifically, they show that the relationship between STW and unemployment is not linear but U-shaped. In line with earlier studies, STW emerges as highly countercyclical. Finally, the authors also reveal that STW is more effective in countries with pre-existing STW schemes than in countries with newly established ones. Furthermore, Kopp and Siegenthaler (2021), analysing the Swiss establishment-level panel data for the period 2007–2014, find that the use of STW increases the probability of establishment survival, preventing rather than simply delaying dismissals. Moreover, STW avoids a relatively larger number of layoffs in small establishments (with fewer than ten employees), exporting firms and those that operate in high-tech manufacturing sectors.

Nevertheless, the extensive use of STW schemes, apart from retaining jobs at risk, could undermine the market selection mechanism by reducing reallocation from low-productivity to high-productivity firms – adversely affecting aggregate productivity dynamics (Giupponi and Landais 2018). At the same time, however, the reduction in separation rates during economic downturns could generate long-term benefits for both firms and workers. It not only limits the disruption of firm-specific accumulated knowledge but also offers deferred cost reductions related to new hirings during the recovery phase. Moreover, it prevents huge and persistent wage losses of long-tenured workers displaced during economic contractions (Davis and von Wachter 2011).

STW schemes have been widely used during the COVID-19 pandemic to keep workers in their jobs and to maintain unemployment rates at low levels.²² Several countries already had such schemes in place at the beginning of the crisis, but they have either made existing schemes more generous (e.g. Austria) and/or they have expanded them to include additional sectors and more vulnerable types of workers. For instance, Germany has relaxed eligibility requirements to include temporary agency workers. Similarly, workers in Switzerland on fixed-term contracts, apprentices, temporary workers, on-call workers and even family members helping in small firms benefited from these schemes, at least temporarily. It is, however, too early to evaluate the medium-term fiscal viability of these measures. Another issue which certainly deserves further analysis and discussion is the exit strategy to gradually phase out these measures.

2.3.4 In-work benefits

In contrast to the previously discussed employment subsidies paid to firms, in-work benefits are paid to employees with the intention of prompting changes in labour supply. In essence, they are redistributive instruments with the dual objective of creating work incentives and providing income support. Broadly speaking, they aim to sustain the labour market attachment of low-income workers by increasing their net income and, additionally, encourage inactive workers in receipt of means-tested benefits – that is entitlements conditional on the beneficiary's income/wealth – to enter the labour market by increasing the gap between labour income and non-labour income, received by virtue of being out of work (Immervoll and Pearson 2009).

Workers must be employed and have income below a defined level to be entitled to in-work benefits.²³ Hence, while this approach encourages those outside the labour market to look for a job in order to gain access to in-work benefits, it may also discourage both those in work and those outside the labour market from working longer hours as they will be phased out from the scheme once their income passes the threshold (Boeri and van Ours 2008). Similarly, if eligibility is based on household income, in-work benefits may create work disincentives and have negative implications for the labour supply of secondary earners (i.e. married women). Of course, which effect will prevail undoubtedly depends on their design (i.e. eligibility and entitlement rules) as well as the country-specific institutional setting.

Apart from the positive effect on employment and participation rates, (generous) in-work benefits can also reduce the number of working poor by increasing the take-home income of eligible workers. Nevertheless, if these benefits are permanent, workers are likely to get stuck in low-wage “traps” deprived of career (and wage) advancement opportunities as they are disincentivized to invest in human capital (Brown and Koettl 2015).

The take-up of in-work tax credits will depend on the alternative options; for instance, the generosity of the existing social assistance schemes. In other words, the former – conditional on being employed – represents an alternative to the latter, as it discourages entry into and promotes exit from welfare programmes. Some evidence from the United States suggests that the Earned Income Tax Credit (EITC) scheme does indeed decrease the likelihood of claiming social protection benefits, but it does not pull beneficiaries out of the programme (Nichols and Rothstein 2016).

The rationale behind in-work tax credits is closely related to the level of the minimum wage. The latter is set to ensure a minimum adequate level of living standard, preventing the emergence of working poor. In other words, it helps low-skilled and low-income workers to earn sufficient labour income to stay out of

²² For an exhaustive discussion on labour market and social policies to cope with the pandemic, we refer the reader to Eichhorst et al. (2020; 2021).

²³ For instance, the entitlement rules of the Earned Income Tax Credit in the United States vary according to marital status, the number of children that the applicant has and level of income.

poverty. Moreover, if firms have power over setting wages, it can even increase employment.²⁴ The standard counterargument to increasing the minimum wage level is that it could discourage demand for low-skilled workers, if their perceived productivity is lower than the binding minimum wage level – ultimately failing to fulfil its objective (Neumark 2018). This minimum wage effect on low-skilled employment strengthens the case for in-work benefits, which essentially shift the burden from firms to governments, generating significant fiscal costs.

In addition, labour supply change induced by in-work benefits may drive pre-tax wages down for both eligible and ineligible workers, ultimately benefiting employers rather than low-income workers (Rothstein 2009). In-work benefits can also create perverse incentives on the labour demand side. In countries with low minimum wages and generous in-work benefits, firms – in their efforts to reduce production costs – will be more prone to offer vacancies targeting in-work beneficiaries (i.e. paying the lowest possible wages in order to reduce their labour costs) – thereby exacerbating the prevalence of low-wage jobs. In a setting with a high binding minimum wage level, opportunistic firms' behaviour and the wage moderation effect will be limited as wages cannot go below a certain level, leading us to question the extent to which targeted in-work benefits are actually able to support low-income households in the absence of adequate minimum wages.

Neumark and Wascher (2011) shed some light on this issue by investigating whether a higher minimum wage enhances or diminishes the effectiveness of EITC. They argue that the direction of the minimum wage–EITC interaction varies across different sociodemographic groups. Specifically, EITC fares better when coupled with a higher minimum wage for lone mothers and vulnerable families with children. In contrast, a higher minimum wage amplifies the negative employment effect of EITC on less-skilled and minority individuals without children, who are ineligible or eligible only for small in-work benefits.

Nichols and Rothstein (2016) provide a comprehensive literature review on the impact of in-work benefits with a wider country coverage. The authors conclude that EITC is a successful anti-poverty tool. When it comes to the labour market outcomes, there is consensus on the effectiveness of in-work benefits in increasing the labour force participation of lone mothers in the United Kingdom and the United States (Brewer et al. 2006), while the impact is negligible in the Netherlands (Van der Linden 2021). In contrast, there is some evidence of EITC discouraging secondary earners (e.g. married women) and of its having little, if any, effect on men. Regarding the question of how EITC influences market wages (in comparison to take-home pay), the existing evidence suggests that employers of low-wage workers are able to capture (at least partly) benefits through reduced pre-tax wages at the expense of workers, especially those positioned at the lower end of the skill distribution, the ineligible or those eligible only for low rates of in-work benefits (see Nichols and Rothstein (2016) for a detailed discussion).

How do in-work benefits fare along the business cycle? While their redistributing role may fare well during expansions, this is unlikely to be the case in recessions as they are not countercyclical (Bitler et al. 2020; Van der Linden 2021). In-work benefits are well-suited to increasing the labour supply of low-income households, but they are not designed to protect them against job loss, nor do they act as a safety net (Bitler et al. 2020). In particular, low-skilled workers are susceptible to job losses not only during downturns but also in the context of technological change and ever-increasing external competition. This leads Van der Linden to conclude that “one may wonder whether the very close connection between income and the holding of a job, that [in-work benefits] have reinforced, will still be sensible in the coming decades” (2021, 9).

²⁴ The conventional economic theory suggests that an increase in minimum wages reduces employment. However, in the case of monopsony, both employment and wage equilibrium levels are lower than they would have been under perfect competition conditions. Thus, an increase in the minimum wage can lead to higher employment. See, for instance, Card and Krueger's (1994) seminal study.

2.4 Unemployment protection

Unemployment insurance is a central pillar of passive labour market policies (PLMP). UBs, in particular, protect workers against the risk of job loss by offering them a replacement income that is either proportional to or independent of their last income. Specifically, UBs smooth consumption of dismissed workers and prevent their premature exit from the labour market – due to temporary unemployment – by encouraging them to search for jobs. On the other hand, unemployment assistance (UA) provides income support to out-of-work, low-income households and should be distinguished from UBs, which are not means-tested (Vroman 2002). UBs outperform UA in smoothing consumption of involuntarily unemployed individuals, whereas the latter performs better than the former in redistributing income to low-income households and reaching a wider population (Vodopivec 2004). From a macro perspective, both act as automatic stabilizers due to their countercyclical nature.

Qualifying conditions. UBs differ across countries in terms of their eligibility and entitlement dimensions (Boeri and van Ours 2008). The former represents a set of conditions that determine access to it; for instance, a minimum duration of the employment period before job loss (workers with relatively short job tenures might not qualify for UBs) and the reasons for lay-off (typically, but not necessary, applies to all those being fired for reasons other than misconduct). Often, eligibility for UBs requires close interaction with ALMPs, such as compulsory training. On the other hand, entitlement rules refer to the maximum duration of replacement income and its level (duration usually increases with the length of job tenure). In contrast, UA typically covers individuals with little, insufficient or no prior work experience. For instance, if low-income out-of-work jobseekers do not satisfy the eligibility conditions for UBs (such as a minimum number of months previously worked) they may be eligible for UA.

Design. The design of the unemployment protection system varies considerably between countries. UBs and UA are either stand-alone measures – although the former is by far the more common of the two – or they are integrated (two-tier systems). Specifically, UBs act as a “port of entry” for eligible involuntarily unemployed and, once those are exhausted, jobless individuals may claim UA, provided that their income is below a certain threshold. For instance, the Australian system is entirely based on UA, whereas Austria is an example of a two-tier system. In Austria, UBs can be claimed for up to one year and after this period low-income jobless individuals may be eligible for UA.

Coverage. About 22 per cent of unemployed workers around the world receive UBs, although the cross-country share varies both according to the country's level of development and within the same income groups (ILO 2017). The coverage rate is particularly low in Africa (5.6 per cent) and in the Americas (16.7 per cent) and somewhat higher in Asia and the Pacific region (22.5 per cent) but still markedly below the coverage rate observed in high-income countries (ILO 2020). Asenjo and Pignatti (2019) show that, in 2015, the coverage rate²⁵ ranged from 100 per cent in advanced European economies (namely, Austria, Belgium, Finland and Germany) to less than 10 per cent in some of the selected emerging countries (Colombia, Serbia and Türkiye). Thus, the coverage rates, as well as the replacement rates, are substantially lower in emerging and developing economies, which are also characterized by a considerably higher share of informal workers – who are not eligible for UBs – and higher levels of poverty. Hence, the unemployment insurance schemes that exist in emerging and developing economies are considered insufficient in terms of protecting workers against job losses. Also, the absence of UBs schemes virtually fails to keep unemployed individuals attached to the formal labour market, thereby allowing high levels of informality to persist.

Source of funding. Most UBs schemes consist of a mandatory public insurance system that covers employees in the formal sector, with some variation in the coverage according to the typology of the contractual arrangement (e.g. atypical jobs are often associated with limited access). The cross-country patterns in financing are typically categorized in two broad groups. The Bismarckian type of welfare state is based on

²⁵ The authors define coverage rate as “the share of unemployed individuals receiving unemployment insurance” (Asenjo and Pignatti, 2019, 13).

social insurance contributions paid by both employers and workers. In some countries, the entire contribution is paid by the employer, even though the incidence of the contribution depends on the elasticity of both demand and supply. The contribution rate varies significantly across countries, from roughly 1 per cent of gross earnings in Albania to 8 per cent in Denmark (Asenjo and Pignatti 2019). Any deficit is typically covered by the government. Alternatively, in the Beveridge type welfare state, UBs are financed through general taxes. Means-tested UA is financed entirely by government in either system (Vroman 2002).

More generous UBs – in terms of income replacement rate and/or duration – are expected to reduce the search intensity of jobseekers and to raise the duration of unemployment spells, resulting in lower unemployment outflows. In addition, Lalive (2007) shows that the magnitude of the extensions of UBs matters too, pointing out that large interventions (those running for, say, 170 weeks) increase unemployment duration and reduce the number of transitions into employment, whereas small interventions (for example, of 13 weeks) do not necessarily increase unemployment spells. Furthermore, job-search intensity increases as the termination of UBs approaches. This implies that UA, if permanent, is likely to be more closely associated with moral hazard than UBs. In addition, UA payments are contingent on household income and, as such, may adversely affect the labour supply choices of other family members (Vroman 2002).

Furthermore, UBs can also affect post-employment outcomes. Higher replacement rates can improve the bargaining power of workers over firms, putting upward pressure on wages. This, in turn, may reduce the job creation rate. Moreover, more generous UBs can also improve the quality of job matches (Tatsiramos and van Ours 2014). In other words, longer duration of UBs might be beneficial to the extent that it allows workers to search for jobs that are more precisely aligned with their core competencies and to refuse unsuitable job offers. An extension of the standard search model with finite UBs and endogenous search effort predicts that job-search effort increases with proximity to the benefit exhaustion while the target wage decreases over the unemployment spell (Marinescu and Skandalis 2021). Put differently, workers who are eligible for longer duration UBs should exhibit lower job-search effort and higher target wage expectation than those with shorter duration UBs.

Departing from analysis of UBs as a job-search subsidy, Acemoglu and Shimer (1999) demonstrate that when workers are risk-averse, moderate UBs raise the output level and enhance the composition of jobs. Intuitively, UBs protect risk-averse workers and encourage them to take more risks, such as seeking higher-wage jobs entailing higher unemployment risk. Finally, under the assumption that only active jobseekers are eligible for UBs, more generous benefits can create incentives (i.e. entitlement effect) for (non-eligible) inactive individuals to start searching for a job, resulting in higher labour force participation rate and unemployment inflows (Boeri and van Ours 2008).

On the other hand, an inadequate unemployment protection system could sustain a vicious cycle of employment opportunities for liquidity-constrained unemployed individuals – who are often “forced” to accept the first job offer, which can “lock” them into low-paid and low-productivity jobs – thereby increasing job mismatches. Conversely, UBs allow eligible (liquidity-constrained) unemployed workers, to be more selective in their job search, creating higher quality job matches at the expense of higher unemployment duration. Chetty (2008) shows that 60 per cent of UBs’ impact on longer unemployment spells is due to a liquidity effect rather than moral hazard. However, recipients of UBs may end up becoming structurally unemployed if their skills erode before they can find a new job.

Overall, the theoretical predictions suggest that unemployment insurance schemes create work disincentives that lead to longer unemployment spells. This has to be weighed against improvements in post-unemployment outcomes, if more generous UBs lead to higher wages and better job matches.

From a macro perspective, UBs act as automatic stabilizers for aggregate demand by smoothing income fluctuations (i.e. consumption smoothing). Therefore, the trade-off between the costs associated with work disincentive effects and benefits of the consumption smoothing effects and better job matching should be considered when designing the UBs scheme, a particular challenge in emerging and developing countries. For instance, Duval and Loungani (2019) advocate that UBs should be less generous in developing countries

than in advanced economies characterized by low informality rates. They argue that unemployed individuals in emerging and developing countries are more likely to take up an informal job while receiving UBs, implying that the presence of a large segment of informal market exacerbates the usual work disincentives created by income support schemes. This conventional view, however, underestimates the fact that UBs are essentially a buffer against joblessness, hence the liquidity effect is likely to be even more important in low-income countries. Intuitively, poorer workers are more likely to be affected by negative shocks and less likely to have enough savings to replace a temporary wage loss. The efficiency cost of longer duration UBs is not necessarily higher in countries with a larger informal sector, it may even decline with higher levels of labour market informality (Gerard and Gonzaga 2018).

The efficiency of UBs schemes depends not only on their eligibility and entitlement dimensions, but also on their interaction with other policies, which can decrease undesired labour market effects associated with UBs.

Finally, recent research effort has focused on exploring whether the generosity of UBs should vary over the business cycle. Landais et al. (2010) demonstrate that the optimal UBs scheme depends on the state of the labour market, suggesting that optimal UBs could be more generous in recessions than in expansions.

In what follows, we examine whether the theoretical predictions regarding the effects of UBs are borne out in the data, reviewing the recent macroeconomic and microeconomic empirical evidence effects.

Recent evidence on unemployment benefits

The existing cross-country evidence based on the OECD countries typically finds an unemployment-increasing effect of UBs (i.e. higher replacement rates) (Bassanini and Duval 2006; De Serres et al. 2012; Escudero 2018; Gal and Theising 2015; Orlandi 2012), albeit with some exceptions to this observation. For instance, Belot and van Ours (2004), without controlling for country and time fixed effects, show that the replacement rates of UBs correlate positively with unemployment. When these two effects are accounted for, the coefficient turns negative, although statistically insignificant, suggesting that more generous UBs do not increase the unemployment rate. Moreover, once the authors account for different policy interactions, the coefficient becomes statistically significant.

Although these studies provide some valuable insights into the sign of UBs' effect, most are plagued by endogeneity issues. As argued by Howell et al. (2007), little attention has been paid to the fact that the relationship between the change in UBs and unemployment rates is simultaneous. To test this, they deploy a simple Granger-causality test using data on the OECD countries, inferring that most (if any) of the statistical association runs from variations in unemployment to changes in the generosity of UBs, and not vice versa. The authors call for results from surveyed studies to be interpreted with some caution and conclude by writing that "a healthier dose of scepticism is required to give the data a chance to challenge orthodox views".

In terms of unemployment flows, Ernst (2015) estimates the system of four equations (with lags and feedback effects) using the three-stage least squares (3SLS) method for 14 OECD countries over the period 1990–2007. Contrary to the standard expectations, Ernst (2015) finds that UBs emerge as the most effective measure for reducing unemployment inflows and increasing unemployment outflows. In contrast, and in line with theoretical predictions, De Serres et al. (2012), using similar data over the same period, find that average UBs replacement rates have an adverse effect on unemployment outflows at the aggregate and sub-group levels (youth, women and men). They also find that a higher average duration of benefits is associated with unemployment persistence. In contrast, Ernst's (2015) assessment of short-term versus long-term effects reveals that labour market policies are more effective in the short-term than in the long-term, except for UBs, which represent an effective way of reducing unemployment in the long term. Contrary to common wisdom, according to which UBs should be limited in their scope and duration to avoid creating disincentives to work and erosion of public finances, the author shows that premature fiscal consolidation through cuts in UBs not only depresses the pace of job creation but also worsens the fiscal position. These different assessments can be related to differences in the measure of UBs' generosity between these two

studies as well as to methodological differences: Ernst (2015) considers the global envelope of public spending on UBs in a (dynamic) general equilibrium framework. In contrast, De Serres et al. (2012) specifically look at the replacement rates of UBs and their impact in a partial equilibrium framework.

Moving to the heterogeneous employment impact of UBs, Gal and Theising (2015) report that a negative effect of UBs is more pronounced for the low-skilled. In contrast, the employment rates of old-age persons are more responsive to UBs than those of prime-age men, confirming that UBs provide an alternative path to early retirement.

The cross-country empirical evidence from the OECD countries on the complementarities suggests that the negative impact of UBs can be offset or reduced by activation policies (Bassanini and Duval 2006). Along these lines, Pignatti and Van Belle (2021) examine the effects of public expenditure on ALMPs and PLMPs, as well as their complementarities in terms of labour market outcomes by pooling the data from 121 advanced, emerging and developing countries over the period 1985–2016. The authors show that both the employment and the labour force participation rates increase, while the unemployment rate decreases with additional spending on ALMPs. In contrast, PLMPs discourage both employment and labour force participation rates and increase unemployment rates. However, when policy complementarities are considered, the negative effect of PLMPs disappears if a country's spending on activation policies is sufficient.

In some countries, unemployed workers can do some part-time work without losing their entitlements to UBs. One such example is Germany, where UBs recipients are allowed to take "mini-jobs", exempted from social security contributions, with the intention of increasing their employability. However, evidence on the impact of mini-jobs on labour market outcomes is not very encouraging. Caliendo et al. (2016) find that being in a mini-job during the unemployment spell is unlikely to increase the probability of unemployment outflow to a regular job. Although these workers have a lower probability of re-entering unemployment after finding a regular job, they earn significantly less in comparison to the unemployed without a mini-job.

Their effect is likely to differ along the business cycle. Schmieder and von Wachter (2016) provide a literature review on the effects of UBs during the Great Recession in the United States and Europe. They suggest that most studies have found an adverse but moderate effect on unemployment duration, pointing out that those who focused solely on the UBs' impact were inclined to overestimate it. Median estimates from the European studies suggest that for a one-month increase in benefit duration, non-employment duration increases by roughly 11 days. Moreover, Schmieder et al. (2012) study the long-term effects of extending the duration of UBs over the business cycle, showing that the marginal labour supply response to extensions of UBs is highly countercyclical – providing some rationale for the extension of UBs in downturns. In line with this, Faberman and Haider Ismail (2020), using high-frequency data, look at the effects of the Coronavirus Aid, Relief, and Economic Security (CARES) Act 2020 in the United States, which extended existing UBs by US\$600 in response to the COVID-19 crisis. Their preliminary results suggest that the expansion of UBs did not disincentivize job-search activity nor did the higher replacement rates discourage workers from returning to work. These findings support the idea that the effect of UBs is not necessarily adverse, especially during severe downturns.

The effect of UBs on job quality has received somewhat less attention in the empirical literature. As previously discussed, theory predicts that more generous UBs may increase post-unemployment wages by improving the quality of job matches, since UBs recipients become more selective when accepting job offers and their accompanying wages (Tatsiramos and van Ours 2014). However, empirical evidence reviewed by Schmieder and von Wachter (2016) points out a small but still negative effect on wages, which is typically interpreted in the light of skills depreciation. In contrast, Nekoei and Weber (2017) find a positive impact on wages using data on job separations which occurred between 1980 and 2011 in Austria, while Jäger et al. (2020) and Lalive (2007) analyse different reforms of UBs in Austria and both report that post-unemployment earnings are virtually unresponsive to changes in entitlement.

2.5 Old-age pensions

Old-age pensions represent the most prevalent income protection measure globally, with around 70 per cent of persons above statutory retirement age receiving them (ILO 2017). The effective coverage rates vary greatly between countries. In the high-income countries, specifically those in North America and Europe, coverage rates are close to 100 per cent, while in Africa, Southern Asia and the Arab States over 70 per cent of the population above pensionable age does not receive a pension (see Figure A6).

Public social protection expenditure on pensions and disability benefits for persons above statutory retirement age represents almost 7 per cent of the world's GDP, ranging from 10.7 per cent in Europe to less than 2 per cent in sub-Saharan Africa and South-Eastern Asia. Demographic changes related to increasing life expectancy have led to growing concerns about the fiscal sustainability of pension systems and, accordingly, a call for their reform in advanced countries. Indeed, the dominant policy discourse around retirement schemes focuses on increasing the statutory retirement age. On the other hand, coverage rates are significantly lower in most emerging and developing economies. Hence, policy debate is currently focusing more intently on pensions systems' inability to offer adequate protection against income losses to old-age workers. The World Social Protection Report 2017–19 (ILO 2017) suggests that even in countries that introduced universal pension schemes for their working population above a certain age, their level is often either insufficient to keep old-age workers above the poverty line or excludes informal workers, which represent a large segment of their labour markets. Hence, the income security of old-age persons and eligibility for pension benefits are closely related to the inequalities that subsist in the labour market.

This picture appears even more troubling when we look at pension gender gaps. For example, in Albania 100 per cent of its male population above statutory retirement age receives an old-age pension, as opposed to roughly 60 per cent of the female population (ILO 2017). However, these pension gaps are related not only to the eligibility conditions (e.g. formal versus informal workers, women versus men) but also to the entitlement levels. For instance, in the European Union (EU), women are, on average, entitled to pensions that are 40 per cent lower than those of men. The pension gender gap ranges from 4 per cent in Estonia to 46 per cent in the Netherlands. This is a direct consequence of existing gender disparities in the labour market that mirror, or even compound, pension inequalities. In other words, historical wage gaps are likely to be translated into pension gaps. However, this is not necessarily always the case as public pension schemes can incorporate some progressive features that favour those on lower pensions (Tinios et al. 2015) or provide universal coverage irrespective of the claimant's contribution record.

The pension systems are either financed through a "pay-as-you-go" system, where current pension contributions finance (at least partly) current pension benefits or through individual accounts (where current pension benefits are equivalent to past contributions and the market return on them). The level of retirement income can either be based on the calculation of lifetime contributions (so-called defined contributions) or on the length of employment and final salary (so-called defined benefits). Nevertheless, many national pension schemes use a "multi-tier" approach that essentially combines the elements discussed above (see Tinios et al. 2015).

The effect of retirement on the labour supply is straightforward. It directly reduces labour supply through the outflow from employment (or unemployment) out of the labour market. The empirical evidence suggests that retirement typically implies a direct transition from full-time employment to the status of inactivity (Blundell et al. 2016).

Much research has focused on how changes in statutory retirement age and other retirement incentives affect labour supply of elderly persons in advanced countries, whereas the literature on developing countries is mostly focused on poverty alleviation effects. Apart from being endogenous to employment opportunities open to seniors, the decision to retire is contingent on several other factors, such as the design of the public pension scheme, health conditions and early retirement options.

The institutional framework is a leading factor in explaining the employment of old-age persons. Public pension schemes often impose a statutory pensionable age (65 years, on average); however, individuals may decide to retire before or after it, based on the incentives intrinsic to the design of the specific public pension scheme. Sometimes, early retirement programmes are offered with the intention of reducing unemployment (e.g. to facilitate intergenerational change). However, employees can often retire before the statutory retirement age through alternative pathways, including disability and unemployment benefits (Boeri and van Ours 2008). Staubli and Zweimüller (2013) explore the impact of the Austrian public pension reform, which increased the early retirement age. They find that it raised both employment and unemployment in the affected age cohort. The employment response was particularly high among high-wage workers in good health. In contrast, the reform did not have such a significant effect on the labour market attachment of low-wage and less healthy individuals, who opted for alternatives to early retirement programmes (i.e. disability and unemployment benefits). Ultimately, the reform's underlying reduction of government expenditure was partly offset by a rise in unemployment and disability benefits. Furthermore, Soosaar et al. (2021) examine the effects of a rise in statutory and early retirement age for women in Estonia and report that these two reforms meaningfully increased the employment rate of treated women.

In defined contribution systems, workers have incentives to continue working and retire later as their future pension will increase with additional years of contribution, while in defined benefit systems, individuals have fewer incentives to work after reaching standard or early pensionable age. Before reaching the statutory or early retirement age, they have a dual incentive to keep working as the pension level increases with the length of employment attachment and higher final wage (only applicable if wages increase with tenure). Furthermore, work incentives can be affected by adjusting the pension benefits for early or late retirements (Blundell et al. 2016). For instance, if benefits are adjusted downwards (upwards) for early (late) retirement claims, this is likely to delay retirement decisions and workers' exit from the labour force. Ernst and Teuber (2008) calibrate an overlapping-generations model for the Netherlands to assess the impact of different tax-benefit reforms. In the Netherlands, old-age pensions are granted to all people aged 65 or above, irrespective of their contributions, provided that they have lived in the country for most of their life. They argue that reducing the level of pension is likely to increase the participation of senior workers by postponing (early) retirement without causing poverty among retirees.

However, an important factor that should not be neglected is health. The deterioration of their health can make senior workers inflexible to changes in statutory retirement age or the introduction of financial incentives. The empirical literature surveyed by Blundell et al. (2016) appears to support the hypothesis that health is a relevant factor in explaining (at least partly) retirement decisions and, correspondingly, variations in elderly persons' employment. In addition, persons with severe health issues may be eligible for disability benefits, which are often conditional on unemployment, leading to lower elderly employment rates.

2.6 Disability benefits

Disability benefits are publicly financed income support schemes that offer assistance in cash and/or in kind directed at individuals with functional disabilities and severe health problems (ILO 2017). Employment gaps between people with and without disabilities are substantial. Jones (2021) reports that, in 2011, the percentage point employment gap ranged from 10 in Sweden to roughly 35 in the Netherlands and Hungary. These pervasive trends are even more sharply accentuated in developing countries, especially for women (Stoevska 2020). This situation has motivated a large body of literature investigating, on the one hand, the various types of discrimination that people with disabilities face and, on the other hand, the role of disability benefits in explaining these huge employment gaps. Despite different policies and regulatory initiatives intended to eradicate the discrimination that people with disabilities experience in the labour market, many aspects of discrimination still persist in terms of both access and fairness.

For instance, empirical evidence from France suggests that the introduction of obligatory quotas for disabled people, aimed at facilitating the employment of disabled persons in the private sector, did not deliver the expected results (Jones 2021). Barnay et al. (2019) find that it actually had a negative impact, which

authors interpret in the light of the possibility of having to pay a fine if employers declined to hire a disabled applicant.

Some advanced countries introduced reforms in response to an increasing number of disability benefits claims due to concerns about their fiscal sustainability and effectiveness in facilitating the labour market inclusion of people with disabilities. McHale et al. (2020) provide a review of the evidence on the employment impact of the recent reforms of eligibility criteria for disability benefits implemented across OECD countries. They find that the employment of people with disabilities was not responsive to most of the reforms that have restricted eligibility criteria for disability benefits in European countries, although these undoubtedly reduced the pressure on public budgets as part of fiscal consolidation policies. On the other hand, results from the reforms implemented in Canada and the United States that have relaxed the eligibility criteria are somewhat mixed. Half of the studies find that this approach significantly reduced the employment of persons with disabilities, while the other half find no meaningful associations. For instance, Autor and Duggan (2003) show that relaxing the eligibility criteria of the US federal Disability Insurance programme, significantly reduced labour force participation of people with low levels of education (i.e. high school dropouts). They also indicate that these individuals were twice as likely to exit the labour market in response to adverse shocks.

Frutos and Castello (2015) explore the rich administrative database in Spain on the employment and health conditions of persons with disabilities. Their results indicate that, on average, all else being equal, the probability of working is 5 per cent lower for individuals receiving disability benefits than for their counterparts who do not receive them. However, when they account for different levels of disability, the work disincentive appears to be significant only for a group with minor disabilities (i.e. close to the threshold of qualification for disability benefits). This finding suggests that a simple dichotomous indicator (i.e. disabled or not) can be misleading as it overlooks differences in work incentives according to the level of disability.

Finally, as we discuss throughout this text, social protection programmes – UBs, retirement and disability benefits – interrelate in significant ways. Lawson (2015) theoretically confirms this argument by demonstrating that more generous UBs significantly reduce enrolment in disability insurance schemes, generating considerable fiscal savings.

2.7 Which policies work best for women?

Gal and Theising (2015), using the OECD cross-country data, show that in-kind family benefits (i.e. subsidized childcare services) correlate positively with the employment rate of prime-age women. As such, they have the potential to help women return to work. In contrast, the results for family benefits provided in cash (i.e. child allowances) and public sector employment are not statistically different from zero. Using similar data but focusing on the full-time and part-time female employment rates, Thévenon (2013) estimates some correlations with different policy measures. They show that the childcare enrolment rate correlates positively with both full-time and part-time employment whereas the subsidized childcare services correlate positively only with full-time female employment rates, suggesting, perhaps, that higher spending on providing access to childcare may facilitate women's transitions from part-time to full-time work. Instead, maternity and parental leaves appear to increase full-time employment more, relative to part-time. Importantly, however, their findings vary significantly according to the specific welfare regime under consideration.

Cipollone et al. (2014) use microdata to investigate the determinants of the female participation patterns across 15 EU countries during the period 1994 to 2009. They take advantage of observed heterogeneity across countries and different groups of women to explore the effects of social policies and labour market institutions on female labour force participation. Their estimates reveal that the former explain around a quarter of the variation in labour force participation for young women and more than a third for highly educated women. Participation rates of women with children, irrespective of educational attainment, correlate positively to the expansion of flexible work. While more generous childcare and family benefits, as

well as maternity (and paternity) leave, increase the labour market attachment of young mothers, this is mostly confined to the medium to highly skilled.

Olivetti and Petrongolo (2017) look at the impact of family policies on gender employment and wage gaps in high-income countries over the period 1970–2010. In line with previous studies, they point out that the relationship between female employment rates and parental leave entitlements is positive but not monotonic. Specifically, the former rises with an increase in entitlements up to 50 weeks, while, beyond that period, parental leaves are likely to harm female employment. The effect of parental leave has a greater influence on wage gaps than on employment gaps, implying that wage gaps narrow with longer parental leave durations. However, when they look at the outcomes for different skill groups, it emerges that the positive effects of leave entitlements are limited to low-skilled women only, whereas the wage gap for highly skilled women expands as a result of longer leave entitlements. In contrast with early childhood spending, which has a positive impact as previously found, the average payment rate and replacement ratio of leave entitlements appear to reduce female employment.

Martínez and Perticará (2017) provide some microeconomic evidence, based on a randomized experiment in Chile, which suggests that the introduction of afterschool care for older children (aged between 6 and 13 years old) has a positive impact on female labour market outcomes. More specifically, they show that programme participation increases the employment rate by 5 per cent and labour force participation by 7 per cent.

Taken together, the studies discussed above tend to find overall positive effects of publicly financed childcare on female employment, especially for the full-time regimes. However, the evidence on the labour market impact of maternity and parental leave entitlements and benefits is controversial. Cipollone et al. (2014) find that their positive effect is more pronounced for young and highly skilled women, in contrast to Olivetti and Petrongolo (2017), who report that they benefit only low-skilled women.

► Conclusion

Summary

The empirical literature evolved along different lines of research to investigate the role of ALMPs and UBs in shaping labour market outcomes. In terms of labour market outcomes, studies focused either on the aggregate impact on employment, unemployment and labour force participation rates or labour market flows. In terms of policy measures, research concentrated either on generic spending on ALMPs and PLMPs or on specific policy measures. In terms of the approach, they either put the emphasis on the role of specific ALMPs and UBs or they look at them within a broader macroeconomic context.

The evidence on the aggregate effect of fiscal interventions is extensive, albeit unsettling. The existing evidence suggests that spending on ALMPs generally has either positive effects or no effect on labour market outcomes, but the impact of individual policies varies considerably across studies. While there is some consensus about the effectiveness of public employment services, there is much less evidence in favour of training (especially in advanced countries) unless it is associated with careful assessment of in-demand skills, although well-designed programmes that incorporate the two elements are apparently more effective. On the other hand, the extension of UBs is typically associated with longer unemployment spells and higher unemployment rates. However, studies that have assessed the joint impact of ALMPs and PLMPs reveal evidence of their potential complementarities. Moreover, the effectiveness of labour market policies appears to depend crucially on their implementation and duration (Escudero 2018). Moreover, different sociodemographic groups respond in heterogeneous ways. This implies that labour and social policies have important implications for labour market inclusiveness. Some research suggests that the low-skilled react more strongly to ALMP measures, providing a rationale for more targeted ALMPs in this case (Escudero 2018; Oesch 2010).

Taken together, studies surveyed here suggest that the labour market policies and institutions play an important role in shaping the unemployment rate dynamics, but macroeconomic context matters too. Some policies, such as employment retention schemes, fare better in recessions, while this is unlikely to be the case for other interventions (e.g. in-work benefits). Some evidence suggests that generous UBs tend to increase unemployment unless implemented under monetary policy accommodation (Lastauskas and Stakėnas 2021), while ALMPs are less likely to reduce unemployment during periods of monetary tightening (Oesch 2010).

The main issue with divergent evidence, which is often observed, concerns conflicting policy implications. Thus, it is still an open question whether we really know enough to successfully guide policymakers. The content of labour and social policies varies significantly across countries and is closely linked to the country's level of income and development, while their impact may crucially depend on the institutional setting as well as macroeconomic conditions. Another possible interpretation for this lack of consensus is that studies often fail to distinguish between different monetary policy stances and regimes (see section 3.1). The current paradigm favours ALMPs and advocates for more investment in these and less in PLMPs. While this approach may work in times of low unemployment, it is not well suited for use during economic slacks and ALMPs are not a panacea. The lack of aggregate demand is likely to be the explanation for a considerable part of unemployment. Firms that face limited demand for their goods and services are unlikely to open new vacancies and increase hiring, leading to less job creation and increased unemployment.

On the other hand, the impact evaluation literature examining the effects of specific fiscally relevant policies is vast and has relied either on randomized control trials or quasi-experimental approaches. Many factors, such as design (i.e. target group, duration), implementation, institutional setting and other country peculiarities, are likely to influence the effectiveness of a specific policy. These studies typically compare the mean outcomes between treatment and control groups. As such, they have limited external validity and conclusions from our narrative review should be taken with a pinch of salt. Systematic surveys fare

better in this context. Some researchers attempt to generalize the effects of ALMPs from the large body of evaluation literature using meta-analysis. To name a few, Kluve (2010) focuses on the European countries, Escudero et al. (2017) on Latin America and the Caribbean and McKenzie (2017) on developing countries. Other systematic reviews of microeconomic impact evaluation studies covered countries at different income levels (Card et al. 2018; Levy Yeyati et al. 2019), while Kluve et al. (2019) focus entirely on the youth programmes. We summarize several empirical regularities that emerged from meta-analyses in box 2. A schematic overview of the results from our narrative review is available in table A1.

► **Box 2: Evidence from meta-analysis of the effect of ALMPs**

- *Short run versus long run:* Some recent systematic literature reviews provide indicative evidence that ALMPs are more effective in the medium and long term (Card et al. 2018; Kluve et al. 2019). This is especially true for training schemes, which account for half of the authors' respective samples. However, these findings do not hold when the analysis is restricted to the LAC countries, i.e. in that case, medium-term impacts are not statistically different from short-term impacts.
- *Business cycle:* The effectiveness of ALMPs is contingent on the prevailing macroeconomic conditions. Some studies find that the effect of ALMPs is countercyclical; that is, they are more likely to show more positive and fewer negative impacts when the labour market is contracting (Kluve 2010; Card et al. 2018). In contrast, evidence based on the LAC countries (such as from Escudero et al. 2017) and on experimental studies only (such as Levy Yeyati et al. 2019) challenges this conclusion, suggesting that their impact is procyclical and that ALMPs are unlikely to provide a "magic bullet" against unemployment during downturns.
- *Level of income:* Effects are greater in middle- and low-income countries, especially for programmes targeted at youth (Kluve et al. 2019; Escudero et al. 2017). Also, the level of development might determine whether effects are counter- or procyclical, possibly due to differences in administrative capacity.
- *Heterogeneous impact on different social groups:* Women, as well as the long-term unemployed, appear to benefit more from ALMPs (Card et al. 2018; Escudero et al. 2017). In contrast, youth and seniors are associated with less positive outcomes, while job assistance programmes ("work first") appear to be more beneficial for disadvantaged participants (Card et al., 2018). Conversely, the meta-regression analyses based solely on experimental studies and the LAC countries suggest that training programmes are more effective for youth.
- *Type of programme:* Public sector employment programmes have a negligible or even negative impact on employment (Card et al. 2018; Kluve 2010). In contrast, wage subsidies and job-search assistance (i.e. PES) appear to be effective in increasing the employment probability of beneficiaries, while training programmes show only marginal positive effects (Card et al. 2018; Kluve 2010; McKenzie 2017). Interestingly, Kluve et al. (2019) find that the design and implementation of youth programmes are actually more important than the type of policy in terms of their effectiveness, although programmes that integrate several measures outperform those based on a single measure.
- *Outcome:* ALMPs appear to be more effective in increasing the employment rather than boosting the earnings of treated groups (Levy Yeyati et al. 2019). A positive effect of ALMPs is more pronounced for formal employment in LAC in relation to other labour market outcomes (Escudero et al. 2017).

Programme duration: Escudero et al. (2017) reveal that ALMPs in LAC are more likely to have a positive and significant impact if their duration exceeds four months. In other words, programmes implemented for a limited time are unlikely to yield the intended results.

Gaps in the literature

There are some methodological and conceptual issues to take into consideration. The first one concerns the level of analysis. The evidence from the impact evaluation studies should be interpreted with some caution. While these studies allow for causal inference, they often do not provide information on the net aggregate effects and are associated with limited external validity. Sometimes they are based on a small sample of the population or specific districts/regions in one country. Moreover, the impact on the treated population could be overestimated if a labour market intervention entails significant indirect costs. For example, a targeted hiring subsidy may lead to considerable deadweight costs if firms choose to hire subsidized workers at the expense of unsubsidized workers who would have been hired in the absence of a policy. Therefore, accounting not only for the indirect impacts – including deadweight, substitution and displacement effects – but also for income and consumption channel is critical for understanding the overall efficacy of fiscal interventions. Correspondingly, generalization of the findings beyond the impact of the specific intervention on the specific target group to the whole population or to countries at the same level of development remains challenging (although authors occasionally attempt to do this). By contrast, macro studies are able to account for the net aggregate effects. However, macro studies cannot be regarded as flawless as they (more than) occasionally suffer from internal invalidity and often disregard feedback effects. In other words, policy responses are endogenous to the labour market conditions, and while studies try to account for this, they often fail to isolate causal effects from simple correlations. Hence, future macroeconomic research should undoubtedly address these issues and attempt to deliver more meaningful results within a dynamic framework. Needless to say, macro and micro studies should go hand in hand. Ideally, one should start from the microeconomic analysis in order to grasp local labour dynamics – i.e. heterogeneous labour demand and labour supply responses – and complement it with the estimation of general equilibrium effects.

The second issue is conceptual and concerns the complementarities between alternative fiscally relevant programmes as well as their interdependencies with labour market institutions. For instance, evaluating the impact of one specific intervention in isolation (e.g. in-work benefits), which may depend on the level of minimum wages, is essentially misleading. Therefore, it is necessary to take into account possible complementarities, even between different policies of the same type (e.g. childcare and parental leave).

Future research should aim to close the widening gap between vast, inconclusive microeconomic evidence and relatively scant cross-country evidence in developing economies. The evidence on the complementarities between different policies is almost exclusively based on the OECD countries. One exception is a study by Pignatti and Van Belle (2021), which includes some developing countries in the sample, but the authors' decision to pool advanced and developing countries in the same sample is problematic as structural and institutional differences between these country groups are significant and likely to bias the results. It would have been much more relevant to focus exclusively on developing economies. Also, considering that they explore the effect of the total spending on ALMPs and PLMPs, disaggregating the expenditure data in order to disentangle different mechanisms could provide additional insights into cross-country differences in policy impact. In the absence of better data with a wider country coverage, this might not be feasible.

Considering the controversial microeconomic evidence on the effectiveness of ALMPs along the business cycle, it remains an open question to what extent economies should rely on ALMPs during severe downturns and periods of weak labour demand (especially policies intended to stimulate labour supply).

Furthermore, the empirical studies surveyed here seldom consider economic conditions, and even less frequently the role of monetary policy and exchange rate regimes (Lastauskas and Stakėnas 2020). While some policies may enhance work incentives, the degree of matching that will take place depends on the labour market conditions and broader macroeconomic context. Accommodating monetary policy creates a macroeconomic environment that enables jobseekers to find work. Hence, the interaction between various labour policies and monetary policy is relevant. Although some baby steps are being made, there is still a considerable research gap left to be addressed, especially concerning different exchange rate regimes that have implications for countries' competitiveness.

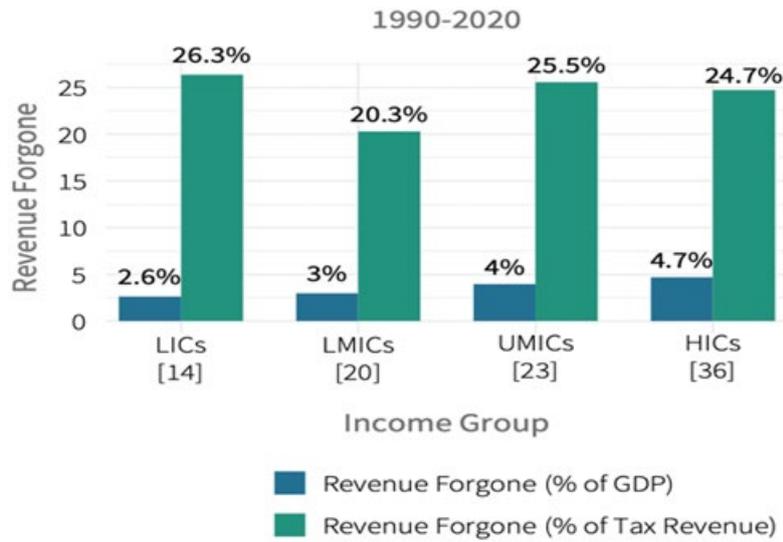
A great deal of research has focused on the “usual suspects” (e.g. employment, labour force participation, unemployment) while much less has focused on job quality and even less on labour market inclusivity. Therefore, more studies that explore the impact of fiscal spending and transfer programmes on job quality – wages, formal employment, hours worked, contractual arrangements – would be welcomed. For instance, we know that non-standard workers have limited access to UBs, but we know much less about how much the generosity of UBs or specific ALMPs enhance or diminish the possibility of getting a better-quality job in terms of security (e.g. full-time permanent employment). Part-time and temporary jobs are not necessarily “bad” as the former may sustain the labour market attachment of women with children, whereas the latter may act as a “stepping-stone” to more stable employment. However, some studies show that a considerable share of part-time jobs is actually involuntary and that the probability of transition to full-time employment is low. Similarly, workers with temporary jobs may end up in low-quality job traps. The accumulated research evidence shows that the expansion in the number of non-standard workers, a side effect of the much advocated structural reforms in Europe, negatively affected the organizational learning processes and accumulation of competencies required for successful innovations (Reljic et al. 2021). This, in turn, lead to lower productivity growth (Kleinknecht 2020). When it comes to inclusivity, further research is necessary to shed some light on the role of fiscal interventions in shaping its four dimensions – access, fairness, protection, voice – lately proposed by El-Ganainy et al. (2021). For instance, is there a role for public sector employment in increasing outflows from informal employment or reducing gender gaps in developing countries? How does the creation of public jobs affect dimensions of labour market inclusivity in the private sector?

Finally, most studies only look at effects “on impact” with little consideration for medium- and long-term consequences of fiscal interventions. Moreover, no evidence is available for career effects, in particular interventions early in one’s labour market experience (similar to school-to-work transition studies). For instance, we know that adverse long-term effects on earnings and employment prospects are particularly severe for first-time job-seekers and workers dismissed during recessions (Davis and von Wachter 2011). Essentially, even temporary economic downturns can generate considerable negative consequences for long-term labour market outcomes. One natural question is to what extent can fiscal interventions prevent this by preserving viable jobs. So far, we know that employment retention schemes are particularly well suited in this context, but we know much less about their longer-term effects. Therefore, future research should put a greater focus on career prospects and job quality outcomes from a long-term perspective.

As we documented at the beginning of the paper, the scale of the global fiscal response to the COVID-19 crisis was unprecedented (e.g. the take-up of employment retention schemes is striking in Europe, as is the extension of UBs in the United States). Of course, this means that future studies have more policies to evaluate and they should focus on the effectiveness of the various fiscal interventions that have been extensively used.

Annex

► **Figure A1. Tax expenditures by country income groups (%)**

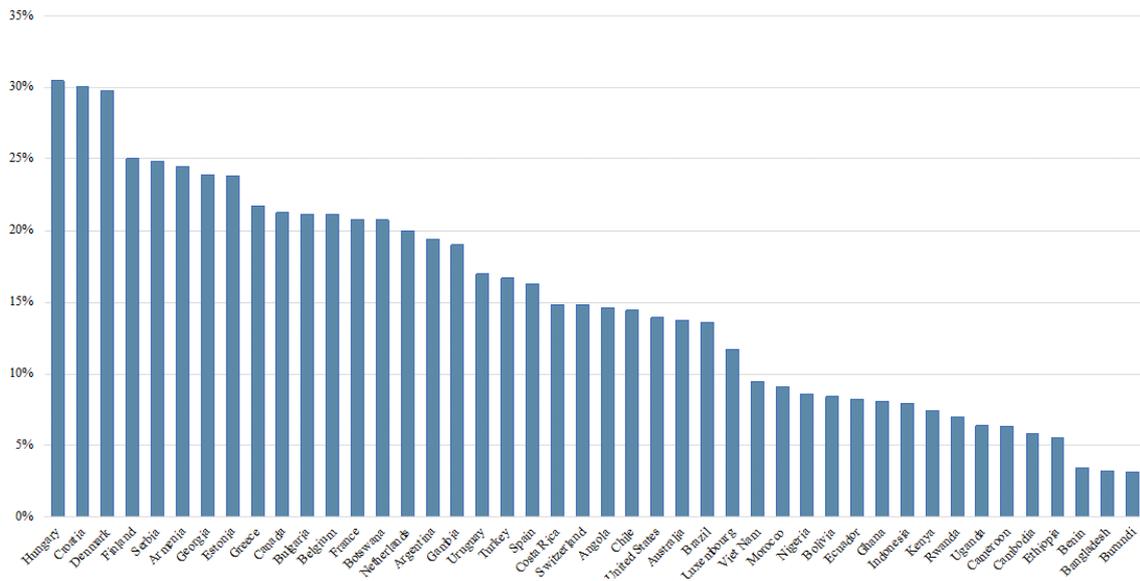


Note: Numbers in brackets indicate the number of countries within each income group that report on both tax and GDP data.

Source: Haldenwang et al., 2021.

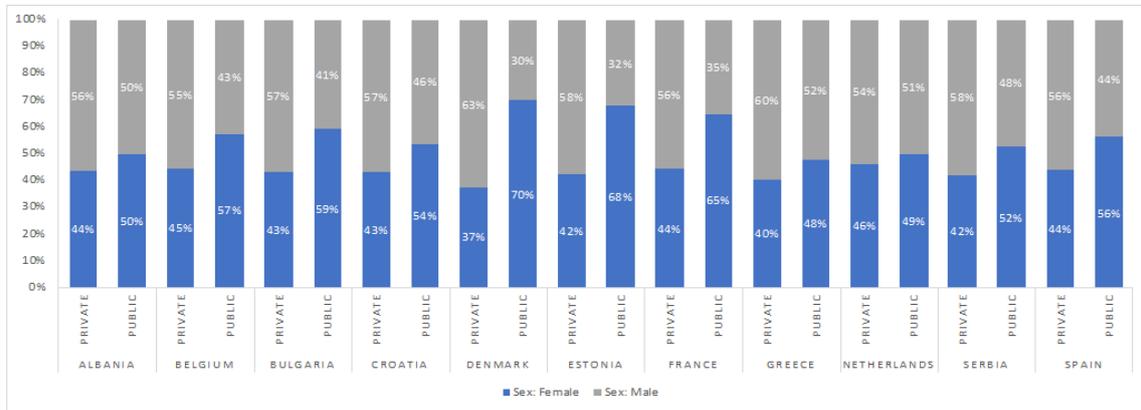
Note: LICs – lower income countries; LMICs – lower middle-income countries; UMICs – upper middle-income countries; HICs – high income countries. Numbers in brackets indicate the number of countries within each income group that report on both tax and GDP data.

► **Figure A2. Share of public sector employment in total employment (%)**

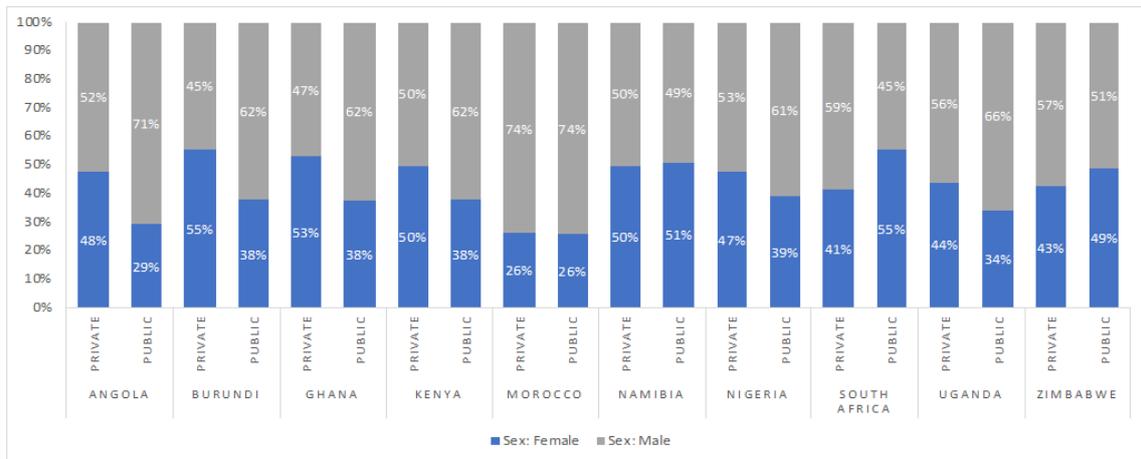


Source: Authors' calculations based on ILO data.

► **Figure A3. Female versus male share in employment by institutional sector in selected European countries (%)**

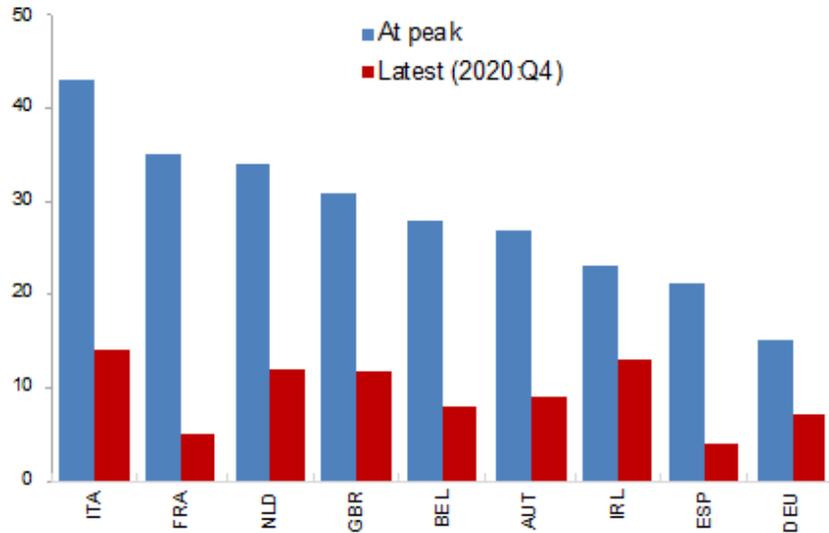


► **Figure A4. Female versus male share in employment by institutional sector in selected African countries (%)**

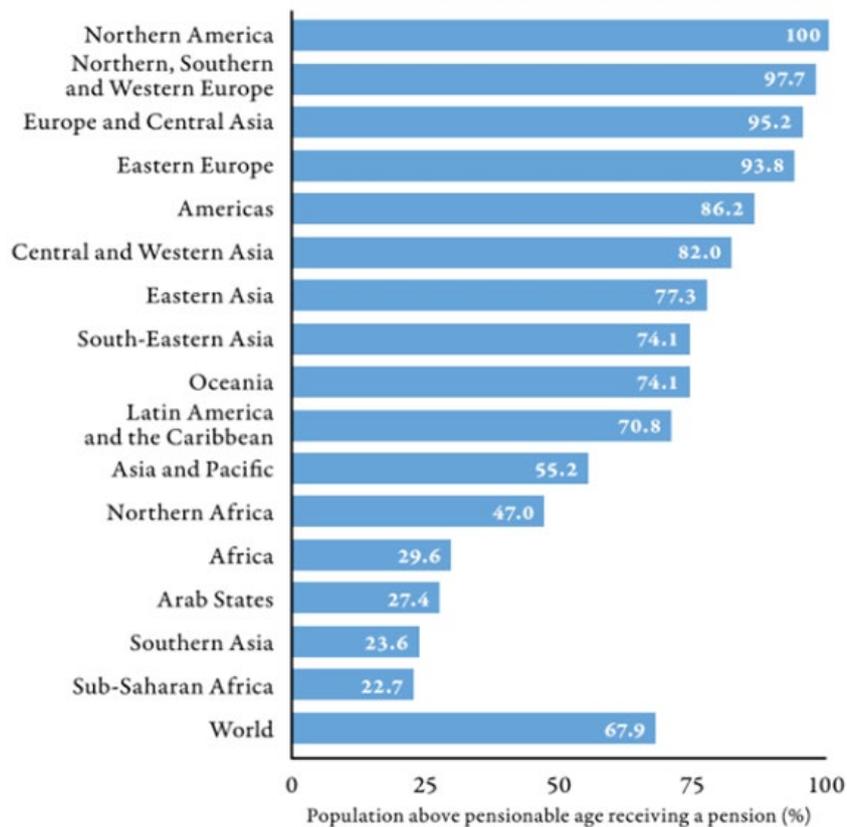


Source: Authors' calculation based on ILO data.

Note: Figures refer to the latest available year

► **Figure A5. Take-up of employment retention schemes for selected European countries**

Source: IMF, 2021.

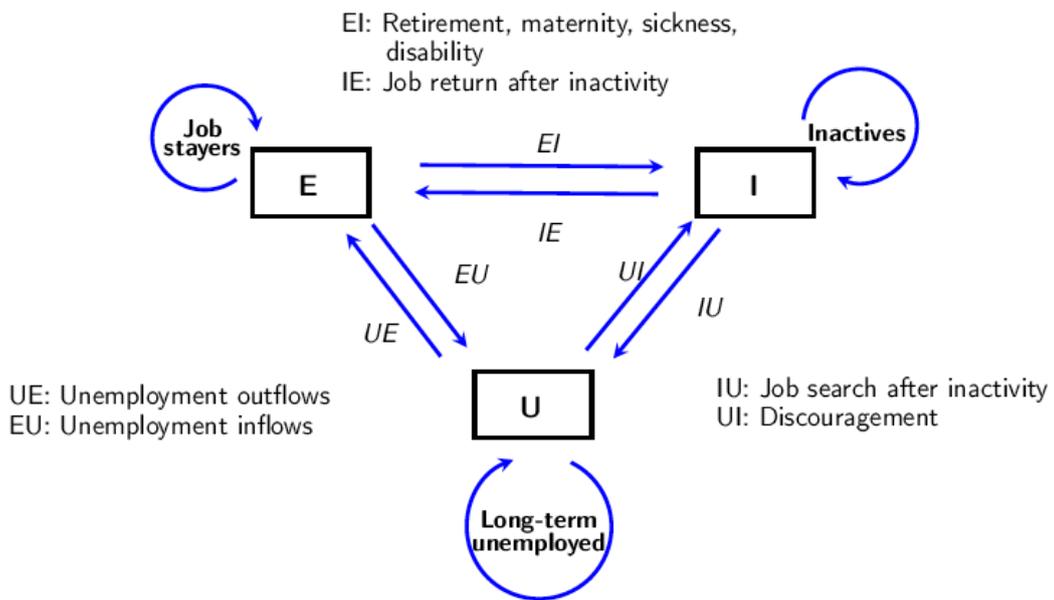
► **Figure A6. Percentage of persons above statutory retirement age receiving a pension, by region, latest available year**

Source: ILO, 2017.

Some theories on the impact of fiscal interventions on the labour market

The impact of fiscal intervention on labour market outcomes depends on the specific transmission mechanisms of policies. Two main theoretical approaches stand apart in macro labour market literature: (i) “stock” models with institutional rigidities; and, more recently, (ii) the “flow approach” with search frictions based on an analysis of workforce and job flows.²⁶ In the first literature stream, involuntary unemployment arises from nominal and real rigidities. More recent models shifted their focus onto the institutional rigidities (e.g. minimum wage, EPL) that essentially prevent wages from fully adjusting to excess labour supply. The second stream is based on the framework that explains unemployment dynamics as a result of job creation and destruction, the matching process between unemployed jobseekers and job vacancies and wage setting through a bargaining process between workers and firms (Pissarides 2000).

► Figure A7. Labour market flows



Source: Ernst, 2015.

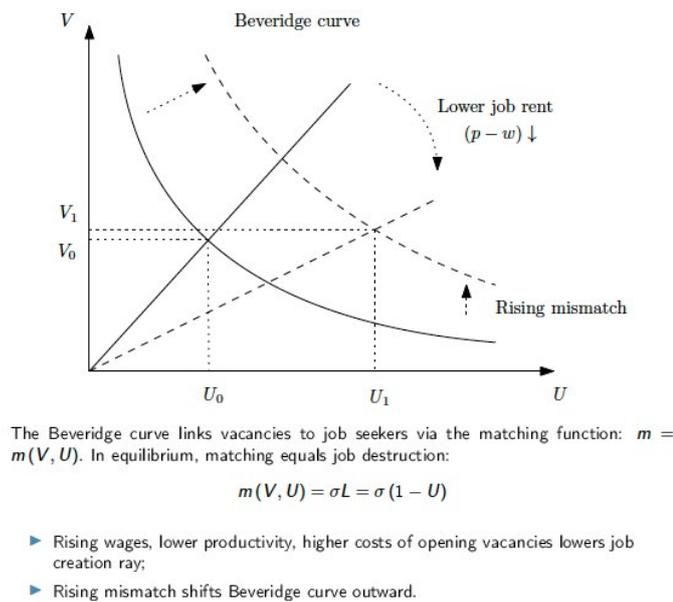
The search and matching models are based on an analysis of labour flows rather than stocks (Pissarides 2000). Firms expand and contract, affecting hiring and separation rates; the job creation (destruction) rate is a decreasing (increasing) function of wages, which essentially make the former less profitable. In addition,

²⁶ See Ernst and Rani (2011) for further discussion.

factors such as real interest rates, technology,²⁷ demand or external competition are also inducing changes in job creation. Analogously, as illustrated in Figure A7, workers search for jobs with mixed results, moving from employment to unemployment status (EU) and, conversely, from unemployment into employment (UE). In models with endogenous participation and labour supply, the workforce flows also involve transitions into and out of inactivity, including flows from employment to inactivity (EI), due to retirement, maternity and disability, and flows from unemployment to inactivity (UI) in the case of discouragement. Finally, once inactive workers restart their job search, they move either into employment (IE) or into unemployment (IU).

The search process is costly for both firms and workers. There are always unemployed workers searching for jobs and vacancies waiting to be filled, hence the labour market never clears. Each match entails a job rent that is negotiated between firms and workers. The workers receive their reservation wage (i.e. UBs) and a share of job rent. The respective surplus shares depend on the tightness of the labour market (i.e. the ratio of job vacancies to unemployment). In the periods of labour market slack – characterized by few vacancies and high levels of unemployment – firms will have greater bargaining power as the cost of finding a new job will be higher for workers. Conversely, when labour markets are tight – with many unoccupied positions and low levels of unemployment – workers will have bargaining power over firms as the firms' search costs increase.

► **Figure A8. Beveridge curve and the matching function**



Source: Ernst, 2015.

The key equation of the search and matching model is the Beveridge curve, which links vacancies to jobseekers in an inverse relationship via the aggregate matching function (Figure A8). The equilibrium vacancies

²⁷ The large and growing body of literature on the impact of technological change on employment ranges from skill-biased technological change (SBTC) (high- versus low-skilled) to routine-biased technological change (RBTC) (routine versus non-routine tasks). According to the SBTC, new technologies complement high-skilled jobs and substitute low-skilled. In contrast, RBTC theory predicts that automation complements non-routine jobs (manual and managerial) but disrupts those characterized by highly repetitive tasks. While the qualitative labour market implications of these two seemingly distinct literature strands are different (upskilling versus polarization), they share a common flaw of undifferentiated technology: i.e. failing to distinguish between the nature of the technological change (product versus process innovation). From the Schumpeterian perspective, technological change can develop along different trajectories, i.e. labour-friendly product innovations versus labour-saving new processes. We refer the reader to Calvino and Virgillito (2018) for further discussion.

and unemployment (V_0 , U_0) are represented by the intersection between the job creation line and the Beveridge curve. Movements along the Beveridge curve (solid line) are caused by cyclical fluctuations, while the curve shifts outwards (see dashed line) when mismatch between labour demand and supply increases. The mismatch can arise due to numerous factors: for example, a technology shock can lead to a higher rate of skills mismatch, causing an outward shift of the Beveridge curve, i.e. keeping the vacancy rate fixed at V_0 , this would increase the unemployment rate. In contrast, an increase in labour market efficiency will cause an inward shift of the curve; for instance, a training programme could help workers to adjust their skills and match to new technologies. On the other hand, factors that affect the firm's profit margin ($p - w$) will cause the job creation line to shift; for instance, a rise in UBs will increase workers' reservation wage, and accordingly their bargained wage, which reduces a firm's profitability, causing a downward shift in job creation, as illustrated in Figure A8.

Accounting for detailed labour market dynamics in macro models allows a more comprehensive understanding of the employment effect of policy interventions. These models are significant improvements with respect to the Walrasian type of labour markets, although they have their critics (Shimer 2005).

► Table A1. Fiscal spending and transfer programmes and their impact on labour market outcomes: selected empirical studies

Author(s)	Country and time coverage	Dependent variable(s)	Fiscally relevant programmes	Results	Estimation method
Hijzen and Martin (2013)	23 OECD countries; 2004–2010	Employment, average hours worked, total hours worked	Short-time work schemes	<ul style="list-style-type: none"> * STW increases output elasticity of average hours worked for permanent and full-time workers * STW reduces output elasticity of employment with some lag * An increase in unemployment as a result of a reduction in output tends to be smaller in the presence of STW * Generosity of UBs increases output elasticity of employment 	OLS, IV, error-correction model
Brey and Hertweck (2020)	18 OECD countries; 2009–2016	Unemployment	Short-time work scheme	<ul style="list-style-type: none"> * U-shaped relationship between STW and unemployment rate * Effect of STW is higher in countries with existing schemes (automatic) * STW is highly countercyclical 	GMM
Kopp and Siegenthaler (2021)	Switzerland; 2007–2014	Dismissals, hires, net dismissals, net jobseekers, long-term unemployed, UBs	Short-time work scheme	<ul style="list-style-type: none"> * STW increases the probability of establishment survival, preventing rather than delaying dismissals * Negative effect of STW on dismissals, hires, net dismissals, net jobseekers, long-term unemployed * STW prevents relatively more dismissals in small establishments (1–9 employees), exporting firms and high-tech manufacturing 	Difference-in-difference
De Serres et al. (2012)	15 OECD countries; 1987–2007	Unemployment, unemployment inflow (UI) and outflow (UO) rates (also by gender–age groups)	UBs gross replacement rate, UBs duration, PES, direct job creation, training	<ul style="list-style-type: none"> U (+), UO (-), UI (ns): UBs initial replacement rate U (ns), UO (ns), UI (ns): UBs duration U (-), UO (+), UI (-): PES U (ns), UO (+), UI (+): training U (ns), UO (-), UI (-): direct job creation 	LSDV, GMM
Ernst (2015)	14 OECD countries; 1990–2007	Unemployment inflows (UI) and unemployment outflows (UO)	ALMPs – direct job creation, hiring incentives, training expenditures, PES, UBs	<ul style="list-style-type: none"> UO (+), UI (-): UBs UO (ns), UI (+): PES UO (+), UI (+): training UO (+), UI (ns): hiring incentives UO (ns), UI (-): direct job creation 	SEM 3SLS
Bassanini and Duval (2006)	21 OECD countries; 1982–2003	Unemployment	UBs replacement rates and duration, ALMP and its components, ALMP × UBs, disability benefits	<ul style="list-style-type: none"> (+) UBs avg. replacement rates (+) UBs duration (-) UBs avg. replacement rates × ALMP (-) training, PES (ns) youth programmes, subsidized employment (+) disability benefits (+) interest rate shock, terms of trade (-) TFP shock 	OLS, IV, GMM
Gal and Theising (2015)	26 OECD countries; 1985–2011	Employment, unemployment, labour force participation rate (LFPR) (by education level; by demographic groups)	UBs, ALMP, family benefits (in kind and in cash), public sector employment (PSE)	<ul style="list-style-type: none"> Total E, LFPR: (-) UBs, (+) ALMP, (+) PSE Total U: (+) UBs, (-) ALMP (ns) PSE Female E: (ns) PSE; (+) ALMP; (+) Maternity leave, family benefits in kind; (ns) family benefits in cash 	FE, dynamic OLS

Author(s)	Country and time coverage	Dependent variable(s)	Fiscally relevant programmes	Results	Estimation method
Olivetti and Petrongolo (2017)	OECD countries; 1970–2010	Female employment rate, the gender gap in employment and earnings	Maximum job-protected parental leave, duration of paid leave, average replacement rate, early childcare	* Female employment rate (employment and wage gap) increases (decreases) with the duration of parental leave (only up to 50 weeks) and early childhood education and care * Female employment rate (employment gap) is a decreasing (an increasing) function of replacement rates and average payment rates.* Positive effects of leave entitlements are limited to low-skilled women only – the wage gap for highly-skilled women expands as a result of longer leave entitlements	FE
Boone and van Ours (2004)	20 OECD countries; 1985–1999	Unemployment	ALMP (training, PES, subsidized employment) UBs ALMP × UBs	(-) training, PES (+) UBs (-) training × UBs (ns) PES × UBs, subsidized jobs × UBs	FE, RE
Thévenon (2013)	18 OECD countries; 1980–2007	Female participation and employment rates (full-time versus part-time)	Family benefits, childcare, public sector employment	Full-time employment, Part-time employment (+) childcare enrolment rates Full-time employment: (+) spending on childcare services under the age of 3 (ns) public employment	2SLS, FE
Orlandi (2012)	13 EU countries; 1985–2009	Structural unemployment rate (NAWRU)	UBs, ALMP	(ns) UBs replacement rate (standard) (+) UBs – their measure (weighted average of different rates for different periods) (+) interest rate (-) ALMP (-) construction as a percentage of employment (booms and busts in housing market)	FE, 2SLS
Oesch (2010)	21 OECD countries; 1991–2006	Low-skilled unemployment	ALMP UBs replacement rates monetary policy	(-) ALMP (+) interest rates (ns) UBs replacement rate, EPL, minimum wage	Pooled OLS
Escudero (2018)	31 OECD countries; 1985–2010	Unemployment, employment to population ratio, labour force participation rate (total and for low-skilled)	Different ALMPs: training, employment incentives, a policy cluster targeted at vulnerable groups, start-up incentives	E: (+) ALMP (relatively more for low-skilled) U: (-) ALMP (training ns for low-skilled) LFPR: (+) ALMPs for low-skilled (except for training)	Pooled OLS, FE, FGLS, 2SLS
Pignatti and Van Belle (2021)	121 countries (36 developed; 64 emerging; 21 developing); 1985–2016	Unemployment rate, employment-to-population ratio, labour force participation rate	Public expenditure on ALMPs Public expenditure on PLMPs Joint effect	(+) spending on ALMPs (-) PLMPs as a percentage of GDP (+) ALMPs × PLMPs for employed population and labour force participation (-) ALMPs × PLMPs for unemployment rate	Panel, OLS, 2SLS, FGLS
Duval and Furceri (2018)	26 OECD countries	Employment	UBs reform (-); ALMP (+)	* UBs reform (-) increases employment; the employment effect of UBs reform is positive in expansions and negative in downturns, albeit statistically insignificant * An increase in ALMP spending increases employment; more so during periods of low growth than periods of high growth, albeit difference is not statistically significant * Monetary policy stimulus enhances the response of the economy to the reforms	Local projections

Author(s)	Country and time coverage	Dependent variable(s)	Fiscally relevant programmes	Results	Estimation method
Lastauskas and Stakėnas (2020)	Euro area countries; 1985–2010	Unemployment	UBs reform (+); ALMP (+)	* An increase in UBs replacement rate/ALMPs increases unemployment unless supported by accommodating monetary policy (findings are robust when crisis period is excluded) * Removed anticipation effect and a cyclical component: unemployment - UBs behaves as before, but ALMPs reduce unemployment under accommodating monetary policy	Local projections
Stepanyan and Leigh (2015)	24 upper middle-income countries; 1995–2011	Private sector employment, unemployment	Public employment	(-) private sector employment (+) unemployment (ns) unemployment when splitting the sample according to the different institutional settings	OLS, FE, GLS; SEM 3SLS
Algan et al. (2002)	OECD countries; 1960–2000	Private sector employment, unemployment	Public employment	(-) private sector employment (+) small effect on unemployment (ns) in low-wage premium and low-corruption premium countries (ns) when country-period FE are controlled for	OLS, GLS, 2SLS, 3SLS
Behar and Mok (2019)	Developed and developing countries	Private sector employment, unemployment rate	Public employment	(-) private sector jobs (narrow < wide measure) (ns) unemployment	FE, GMM
Lamo et al. (2016)	Euro area, Spain; 1980Q1–2012Q4	Private sector employment	Public sector employment and wages	(-) private sector employment in good times (with low U) (+) private sector employment in bad times (with high U) (+) private and public sector wages correlate positively in euro area in both good and bad times (+) private and public sector wages correlate negatively in Spain in bad times	Local projections
Dale-Olsen and Schøne (2020)	Norway; 2003–2012	Private sector employment and wages	Public employment	(+) private sector employment (stronger in close proximity to the stimulus area, even in the long term) (+) short-term effect on wages and firms' sales	Difference-in-difference
Faggio and Overman (2014)	UK; 2003–2007	Private sector employment	Public employment	* Focus on local labour markets (ns) total employment (+) employment in non-tradable sector (construction + services) (-) employment in tradable sector (manufacturing)	OLS, IV
Faggio (2019)	UK; 2003–2007	Private sector employment	Public employment	* Public sector employment (reallocation programmes) * The positive private sector employment effect is highly localized (receiving areas) Manufacturing (ns)/Services (+)	Treatment intensity approach, propensity score

Author(s)	Country and time coverage	Dependent variable(s)	Fiscally relevant programmes	Results	Estimation method
Abiad et al. (2016)	17 OECD countries; 1985–2013	Unemployment, output, private investment, debt-to-GDP ratio	Public investment (unanticipated changes)	* Public investments raise output, both in the short term and in the long term, crowd in private investment and reduce unemployment * The drop in unemployment is stronger in recessions, when public investment is financed by issuing debt and in countries with higher public investment efficiency	Local projections
Furceri and Li (2017)	79 emerging and developing countries; 1990–2013	Employment, output, private investment	Public investment (unanticipated changes)	(+) output (+) private investment (+) employment	Local projections
Frutos and Castello (2015)	Spain; 2008–2010	Employment	Disability benefits	(-) probability of working by 5% * When different levels of disability are accounted for, the work disincentive appears to be significant only for a group with minor disabilities	Recursive bivariate probit model
Autor and Duggan (2003)	United States; 1978–1998	Female and male employment	Disability benefits	(-) male and female employment, low education (ns) male and female employment, high education	OLS, IV
Zimmermann (2020)	India; 2005–2008	Private sector employment, family employment, public employment, daily wage, private wage, public wage	Public works	(ns) total employment (+) family employment (-) private employment (ns) wages	Regression discontinuity design
Imbert and Papp (2015)	India; 2004–2005 (pre) and 2007–2008 (post)	Private sector and public sector employment, wages, unemployment, inactive	Public works	(+) low-skilled public employment (-) private sector employment (ns) unemployment, LFPR (+) wages	Difference-in-difference
Berg et al. (2014)	India; 2000–2011	Agricultural wages	Public works	(+) agricultural wages	Difference-in-difference
Azam (2012)	India; 2004–2005 (pre) and 2007–2008 (post)	Percentage of public works in total casual workforce, labour force participation, wages of casual workers	Public works	(+) employment (+) wages (stronger effect for women) (+) labour force participation	Difference-in-difference
Escudero et al. (2020)	Uruguay; 2005, 2006 and 2008	Employment, unemployment, labour force participation rate, wages, hours worked, permanent contract	Public works, cash transfers, joint effect	* All effects on their variables of interest –labour market status (employed, unemployed, inactive) and job quality (hours worked, hourly earnings, working poor) are statistically insignificant, except for the positive employment effect of public works	Difference-in-difference combined with matching; RD
Fernández and Villar (2017)	Colombia; 2012–2014	Informality	Payroll tax reduction	(-) informality * More pronounced for males aged 25–50 years old, low education, middle-income population	Difference-in-difference
Bernal et al. (2017)	Colombia; pre (Jan. 2011–Dec. 2012) post (Jan. 2014–May 2014)	Employment, wages	Payroll tax reduction	(+) employment in micro and small firms (+) employment in services (ns) employment in large firms (200+ employees) (+) wages	Difference-in-difference

Author(s)	Country and time coverage	Dependent variable(s)	Fiscally relevant programmes	Results	Estimation method
Kugler et al. (2017)	Colombia	Different indicators of formal employment	Payroll tax reduction	(+) formal employment * (+) for all firm-size classes, but stronger for small firms * (+) stronger effect for women (ns) self-employed women (+) self-employed men (+) level and share of permanent employees in manufacturing	Difference-in-difference
Egebark and Kaunitz (2018)	Sweden; 2005–2012	Employment status, hours worked, wages	Payroll tax reduction	* Target: young workers (+) youth employment, heterogeneous across different ages (effect on younger is higher) (ns) for foreign-born and with recent record of unemployment (ns) hours worked (+) wages	IV Difference-in-difference
Saez et al. (2021)	Sweden; 1985–2019	Employment, wages	Payroll tax reduction	* Target: young workers * Persistent positive youth employment effect (even after policy was phased out) * Long-run effects are twice as large as the medium-run effects * Effect is higher in regions depicted by high youth unemployment rates (ns) wages	Difference-in-difference
Behaghel et al. (2014)	France, 2007–2008	Outflows to employment, unemployment duration	Job-search assistance	* Positive effect on outflows into employment are higher for public providers * PES reduces unemployment duration, private employment services do not * No significant evidence of programme effect heterogeneity (age, gender, skills) * No cream-skimming, but possible parking effect * Cost of outsourcing to private providers is higher than to public providers	Randomized controlled trial
Crépon et al. (2013)	France	Earnings, employment	Job-search assistance (private)	* Target: university graduates under the age of 30, unemployed for least 6 months * Positive effect on the treated, but negligible net effects due to displacement of non-participating eligible workers	Randomized controlled trial
Blundell et al. (2004)	United Kingdom; 1982–1999	Outflow to employment	Job-search assistance × wage subsidy	* Target: all young people receiving UBs for at least 6 months * The programme significantly increased transitions to employment for men	Difference-in-difference combined with matching, propensity score
Rehwald et al. (2017)	Denmark; 2011–2012	Regular employment, employment with wage subsidies, non-benefit receipt, unemployment	Job-search assistance public versus private	* No differences in labour market outcomes between public and private providers * No evidence of programme effect heterogeneity by gender and age * Costs are higher in the private programme	Randomized controlled trial

Author(s)	Country and time coverage	Dependent variable(s)	Fiscally relevant programmes	Results	Estimation method
Caliendo et al. (2016)	Germany; 2001–2008	Unemployment flows, wages	Mini-job × unemployment insurance	(ns) unemployment outflows/inflows (-) post-unemployment wages (especially for high-skilled) * Being in a mini-job decreases the probability of finding a job at the beginning of the unemployment spell but it increases the job-finding probability for the long-term unemployed and in the same sector as the previous job	Multivariate duration model
Jiménez-Martín et al. (2019)	Spain; 1990–2014	Targeted at people with disabilities	Hiring subsidies	* Exploring hiring subsidies for permanent employment (PT), temporary (TE) and conversion from TE to PT * On average, hiring subsidies are ineffective at incentivizing intended transitions to employment (PT/TE) (+) transition from TE to PT for women (+) transition to TE and PT for old-age workers * Hiring subsidies increase probability of transitioning to disability benefit scheme for young men	Difference-in-difference
Groh et al. (2016)	Jordan; 2010–2011	Targeted at female graduates	Wage subsidy	(+) employment, wages, labour force participation, hours worked * All effects disappear once the wage subsidy ends (after 6 months)	Randomized controlled trial
Cahuc (2019)	France; 2006–2009	Employment, hours worked, wages	Hiring subsidies	* Implemented during recession * One year long, targeted at small firms (<10 employees) and low-wage workers (+) employment, hours worked (no substitution effect) (ns) wages (ns) firm survival	OLS, IV, difference-in-difference, SAM model simulation
Neumark and Grijalva (2017)	United States; 1991–2011	Employment	Hiring subsidies	* Exploring the effect of countercyclical hiring credits (+) hirings > (+) net employment * Generally positive employment effects of hiring subsidies during the Great Recession (especially refundable hiring credits and those with recapture clauses)	Difference-in-difference
Bernhard et al. (2008)	Germany; 2000–2006	* Targeted at recipients of UB II (means-tested tax-financed income support)	Wage subsidy	* 20 months after entering subsidized employment, the regular employment rate of the participants is 40 percentage points higher than within different control groups	Propensity score matching
Huttunen et al. (2013)	Finland; 2004–2007	* Targeted at low-wage and full-time senior workers	Wage subsidy	* No significant employment or wage differences between eligible and ineligible workforce population * Intervention raised employment at an intensive margin for the oldest by inducing a shift from part-time to full-time jobs	Difference-in-difference
Jaenichen and Stephan (2011)	Germany; 2000–2002	* Targeted at hard-to-place workers	Wage subsidy	(+) difference between treated and control group of unemployed (ns) difference between treated and control, conditional on being employed * Difference between short-term (4–6 months) and long-term wage subsidies (7–12 months) not significant	Propensity score matching

Author(s)	Country and time coverage	Dependent variable(s)	Fiscally relevant programmes	Results	Estimation method
Kangasharju (2007)	Finland; 1995–2002	* Wide targeting (all firms except for unprofitable firms facing bankruptcy risk)	Wage subsidy	* Wage subsidy (roughly one third of the wage bill) significantly increases employment in participating firms * No displacement effect on non-subsidized firms in the same industry and region	GMM, FE, matching
Staubli and Zweimüller (2013)	Austria; 1997–2010	Employment, unemployment, disability	Early retirement age	(+) employment, unemployment of the affected age cohort * The intended effects of the reform were partly offset by a rise in claims for unemployment and disability benefits	OLS, FE
Cipollone et al. (2014)	15 EU countries; 1994–2009	Labour force participation	PCA, two factors: (1) LMI: EPL, PLMPs, ALMPs; (2) family-oriented policies: elderly and family subsidies, paternal leave	LFPR (+) LMI × presence of children (total, low-skilled, young) LFPR (-) LMI × presence of elderly (total, low-skilled, young) LFPR (ns/+) family policies × presence of children (total, low-skilled/young) LFPR (-/ns) family policies × presence of elderly (total, low-skilled/young) LFPR (-) security (ALMP and PLMP), flexibility (EPL) LFPR (+) flexibility and security	Multilevel probit
Kleven et al. (2021)	Austria; 1953–2017	Wage gender gap	Childcare Parental leave Childcare × parental leave	* No effect on gender wage gaps	Regression discontinuity
Martínez and Perticará (2017)	Chile; 2012–2013	Employment, labour force participation	Childcare	(+) female employment (+) female labour force participation (ns) hours worked, total income (+) hourly income, but not robust	Randomized controlled trial
Neumark and Wascher (2011)	United States; 1997–2006	Employment, earnings	In-work benefits × minimum wage	* EITC coupled with a higher minimum wage works better for lone mothers and vulnerable families with children (in terms of labour supply response and earnings) * EITC and higher minimum wage enhance the adverse employment and earnings effect on less-skilled and minority individuals without children (who are either ineligible or eligible only for small in-work benefits)	Difference-in-difference
Lalive (2007)	Austria; 1989–1991	Unemployment duration and outflows, wages	UBs extension (small versus large)	(ns) unemployment duration, unemployment outflows: small UBs extensions (+) unemployment duration, (-) unemployment outflows: large UBs extensions (ns) wages	Regression discontinuity
Nekoei and Weber (2017)	Austria; 1980–2011	Job quality	UBs extension	* UBs extension (from 30 to 39 weeks) has a positive impact on post-unemployment wages, but no effect on job tenure, full-time versus part-time jobs * As it affects re-employment wages, it also has positive fiscal externalities (greater tax revenue)	Regression discontinuity design

Author(s)	Country and time coverage	Dependent variable(s)	Fiscally relevant programmes	Results	Estimation method
Schmieder and von Wachter (2016)	Germany; 1987–1999	Post-unemployment wages, unemployment duration	UBs extension	<ul style="list-style-type: none"> * Negative (albeit marginal) effect on wages, job tenure, full-time versus part-time jobs * Positive effect on unemployment duration * Wages at different non-employment durations do not shift 	Regression discontinuity design
Schmieder et al. (2012)	Germany; 1975–1999	Benefit and non-employment duration	UBs extension	<ul style="list-style-type: none"> * Study the effects of extended UBs over the business cycle (+) benefit duration during a downturn (ns/-) non-employment duration * Moral hazard effect of UBs extensions is considerably lower during downturns than during periods of expansion 	Regression discontinuity design

Source: Authors' elaboration.

Abbreviations: OLS (Ordinary Least Squares); GMM (Generalized Method of Moments); LSDV (Least Squares Dummy Variables); SEM (Structural Equation Model); 3SLS (3-Stage Least Squares); FE (Fixed Effects); RE (Random Effects).

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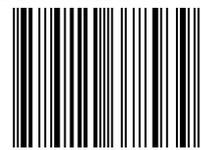
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