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What works in wage subsidies for young people: A review of issues, theory, policies and evidence

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Márton Csillag
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Employment
and Labour
Market Policies
Branch

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ACI2: Jobs and Skills for Youth

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Preface

The primary goal of the ILO is to work with member States towards achieving full and productive employment and decent work for all. This goal is elaborated in the ILO Declaration 2008 on *Social Justice for a Fair Globalization*,¹ which has been widely adopted by the international community. Comprehensive and integrated perspectives on measures aimed at achieving this goal are embedded in the Employment Policy Convention of 1964 (No. 122), the *Global Employment Agenda* (2003) and – in response to the 2008 global economic crisis – the *Global Jobs Pact* (2009) and the conclusions of the *Recurrent Discussion Reports on Employment* (2010 and 2014).

The Employment Policy Department (EMPLOYMENT) is engaged in global advocacy and supporting member States in their efforts to place more and better jobs at the centre of economic and social policies and growth and development strategies. Policy research and knowledge generation and dissemination are essential components of the Employment Policy Department's activities. The resulting publications include books, country policy reviews, policy and research briefs and working papers.²

The *Employment Policy Working Paper* series is designed to disseminate the main findings of research on a broad range of topics undertaken by the branches of the Department. The working papers are intended to encourage the exchange of ideas and to stimulate debate. The views expressed within them are the responsibility of the authors and do not necessarily represent those of the ILO.

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¹ See http://www.ilo.org/global/about-the-ilo/mission-and-objectives/WCMS_099766/lang--en/index.htm [30 Nov. 2015].

² See <http://www.ilo.org/employment> [4 Nov. 2015].

Foreword

Across the globe, young women and men are making an important contribution as productive workers, entrepreneurs, consumers, citizens, members of society and agents of change. All too often, the full potential of young people is not realized because they have no access to productive and decent jobs. Although they are an asset, many young people face high levels of economic and social uncertainty. A difficult transition into the world of work has long-lasting consequences not only on youth but also on their families and communities.

The International Labour Office has long been active in youth employment, through its normative action and technical assistance to member States. One of the means of action of its Youth Employment Programme revolves around building and disseminating knowledge on emerging issues and innovative approaches.

In 2012, the International Labour Conference issued a resolution with a call for action to tackle the unprecedented youth employment crisis through a set of policy measures. The resolution provides guiding principles and a package of inter-related policies for countries wanting to take immediate and targeted action to address the crisis of youth labour markets. In follow-up action, the ILO's Youth Employment Programme (YEP) has been implementing knowledge building efforts under the ILO's Area of Critical Importance, Jobs and skills for youth.

Wage and hiring subsidy programmes have been part of the toolbox of Active Labour Market Programmes (ALMPs) for more than 30 years; the recent economic crisis has had a particularly detrimental effect on the labour market situation of youth and a number of European countries have introduced hiring subsidies as a means of fighting youth unemployment. Prompted by the resurgent interest of policy-makers in utilizing subsidies to boost job creation, as well as the lack of comprehensive reviews of such policies specifically targeting youth, this paper is a contribution to filling a knowledge gap. The paper devotes specific attention to the role of design elements in determining a programme's effectiveness.

The review finds that hiring subsidies in the form of payroll tax reductions have been found to have rather moderate positive effects on youths' employment probability. Generous and long-lasting hiring subsidies targeted at disadvantaged youth in Europe, coupled with strict conditionalities for employers, can have more substantial positive effects on the long-term integration of young people into the labour market, not least because they can be more generous. By contrast, short-term hiring programmes are only effective if they comprise a substantial training element. The effects of programmes in lower and middle income countries have been more heterogeneous than in higher income countries; often programme targeting is sub-optimal, employer take-up can be low and short-term employment gains due to programmes tend to fade out relatively quickly.

The paper was prepared under the guidance of Niall O'Higgins (YEP) who is coordinating knowledge-building efforts in for the Area of Critical Importance, Jobs and skills for youth. Useful comments were also provided by Sara Elder and Susana Puerto of YEP, and Gianni Rosas, Director of the ILO office in Rome as well as by Werner Eichhorst (IZA) and other participants at the technical workshop on jobs and skills for youth held in the ILO on November 16th, 2015.

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1. Introduction

Wage and hiring subsidy programmes have been part of the toolbox of Active Labour Market Programmes (ALMPs) for more than 30 years, and have been shown to produce moderately positive results (Card et al., 2010). Previous reviews of the evidence (Almeida et al., 2014) have also stressed that the success of these programmes depends to a large extent on the specificities of the design (including the amount of the subsidy, the target group and any attached conditions for employers). The recent economic crisis has had a particularly detrimental effect on the labour market situation of youth, and a number of European countries have introduced hiring subsidies as a means of fighting youth unemployment. Prompted by the resurgent interest of policy-makers in utilizing subsidies to boost job creation, as well as the lack of comprehensive reviews of such policies specifically targeting youth, this paper is a contribution to filling this gap. A novel feature of this paper is that it devotes specific attention to the role of design elements in determining a programme's effectiveness.

1.1 Definition of wage subsidy programmes as distinct from other active labour market measures

We define wage subsidies (or hiring subsidies, or employment subsidies) as transfers to employers or employees that cover at least part of the eligible individual's wage or non-wage employment costs. Their main goal is to provide incentives for employers to hire members of the target group. In our analysis, we include measures which involve:

- direct transfers to firms (hiring subsidies) or workers (wage supplements), conditional on the worker to whom the subsidy relates being in formal employment;
- general cuts in payroll taxes or social security contributions, targeted at youth;
- on-the-job training programmes, as long as they have a significant subsidized employment component, meaning that at least two-thirds of the young person's time is devoted to "actual work". We exclude programmes where the primary component is training.

Furthermore, we only include a labour market measure if, during the period of the subsidy, the subsidized worker carries out work which provides an element of added value for the firm. We exclude subsidies with a duration shorter than three months: although this cut-off is somewhat arbitrary, our aim is to evaluate true work relationships and eliminate internships or summer work. Finally, we focus on programmes that aim to integrate workers into the primary labour market, and therefore exclude direct job-creation schemes, such as public works programmes and reserved employment for disabled people.

The structure of our report is as follows: section 2 begins by discussing how hiring and wage subsidies can help youth to integrate into the labour market, and points out some of the design issues of such programmes that might have an impact on their effectiveness. In section 3, we provide an overview of programmes that have existed over the past 20 years, by region, highlighting some programmes that are either considered to be typical or which are noteworthy due to their specific design features. In section 4, after a very brief introduction to the methodology of evaluation studies of hiring and wage

subsidies, we review the evidence on the effectiveness of these programmes based on 20 research papers. Finally, in section 5, we draw conclusions about the design of effective wage subsidies for youth.

2. Role of wage subsidy programmes in integrating young people into jobs: The impact mechanism

In the following section, we briefly summarize the theoretical considerations behind employment subsidies. The basic rationale for introducing a wage subsidy is that it will lead to an increase in employment for the groups targeted. This is due to the fact that the subsidy reduces the cost of labour for employers, and as a result increases the demand for labour services.³ There are several alternative mechanisms that can contribute to better labour market outcomes for the groups targeted, which we will review in subsection 2.1. There are, however, several indirect effects that can undermine the success of these programmes, briefly summarized in subsection 2.2. There is a wide consensus that the potential effectiveness of wage subsidy programmes crucially hinges on the specific design (and economic context) of these policies;⁴ subsection 2.3 is devoted to an analysis of these considerations.

2.1 How wage subsidies promote integration

The initial problem to be overcome is the lack of demand for jobseekers with little work experience or with low skill levels. The first reason why employers might be reluctant to hire certain groups is that they lack information on their productivity and skills, a situation which is especially relevant for young persons (new labour market entrants) with limited, or no, work experience. In other words, employers ask for a “risk discount” and are prepared to hire youth with little or no work experience only at a wage that is lower than the (expected) marginal productivity of their labour. Additionally, employers may perceive low levels of educational qualifications or extended periods of non-employment as signals of low productivity. As a result, employers might be willing to offer young persons employment at low wages, but, employment protection legislation might prevent firms from hiring at rates below the statutory minimum wages, with consequent increases in unemployment. Wage subsidies can compensate employers – by reducing wage costs – for the (supposed or real) lower productivity or perceived risks inherent in hiring young persons with little work experience or low levels of education, making them worth hiring from the employer’s point of view.

This positive effect on the target group’s employment probability will persist in principle only as long as the subsidy is paid. However, two factors can lead to longer term integration effects even after the subsidy has run out.⁵ First, if the main barrier to youth employment is the risk associated with recruiting a person with no work experience, then the period of subsidized work can act as a screening device, providing direct information on the young person’s productivity. Second, the subsidized employment can promote skill formation through “learning-by-doing”, leading to increased productivity and subsequent improvement in employment prospects over the longer term (Heckman et al., 2002).

In relation to the different mechanisms through which wage subsidies may increase young people’s employment prospects outlined above, various measures of success are used by researchers. In particular, in order to ascertain the short-term effect of subsidies,

³ A worker-side subsidy increases potential employees’ take-home wages, encouraging more workers to enter the labour market. Due to this expansion of labour supply, employment rates will rise.

⁴ See, for example, Neumark and Grijalva (2013), Almeida et al. (2014) and Brown (2015).

⁵ The relative importance of these two mechanisms depends on the target group of the subsidy: while the first (overcoming employers’ reluctance to hire where evidence of productivity is lacking) might be relevant for all young persons, the second (promoting skill formation) is of particular importance for disadvantaged (low-skilled) young jobseekers.

the proportion of young people who have found a subsidized job among those eligible (relative to the job-finding rate of those who are not eligible) is commonly measured. To determine whether long-term integration goals are met, researchers examine the employment probability (or wages) of those who participated in the programmes during the period after the subsidy has ended (see section 4.1 for a more comprehensive overview of evaluation methods).

Employer wage subsidies can also have supply-side effects, in both the short and the longer term. First, being aware of their eligibility for a wage subsidy might change jobseekers' perceptions of success rates in the labour market. With the expectation of shorter unemployment durations, eligible workers might increase their job-search efforts, which might also lead to greater success in finding employment. In this sense, wage subsidies increase effective labour supply. Second, wage subsidies can also – through the opportunity to gain work experience – influence workers' preferences for certain work or careers, and therefore young people can target more “suitable” opportunities in their subsequent job search. Hence, through this so-called “job ladder effect”, the subsidy can improve the quality of future job matches (Kluve, 2014). In contrast, if workers accept less skilled or informal jobs in the absence of the subsidy, this can create a trap and harm their career paths in terms of future employment prospects or earnings (Viollaz, Ham, and Cruces 2012); therefore, an effective wage subsidy may have long-term positive effects on both employment probability and job quality.

2.2 The pitfalls of wage subsidies

Wage subsidy programmes are frequently criticized for potential shortcomings which can lead to negative effects that outweigh the abovementioned positive aspects.

One such criticism is that indirect effects offset any potential impacts on overall employment. First, the subsidy may support a high share of eligible workers who would have been hired in any case, regardless of whether the subsidy were offered – in other words, due to the potentially high *deadweight* (also referred to as windfall wastage). Taking into account these deadweight costs can lead to the conclusion that other active labour market measures are more cost effective.

A second concern is that firms do not raise the level of their workforce in response to the subsidy but, instead, hiring a member of the target group leads to the firing of ineligible workers who have similar characteristics and can be easily substituted by eligible workers (this is called the *substitution* effect). Thus, in the extreme case, the subsidy may not raise overall employment, but simply “reshuffle” the pool of non-employed. It can, however, be argued that if youth non-employment can have long-lasting scarring effects, then it is not undesirable to substitute older workers with younger ones.

Finally, increases in employment in firms that use subsidized labour might come at the expense of job losses at firms that do not have eligible workers, as the first type of firms gain a cost advantage and out-compete the second type of firms. In other words, job growth in subsidized firms “displaces” jobs in firms that have no employees who are eligible for subsidies.

Wage subsidy measures targeted at youth can also have perverse effects; for example, by increasing young persons' incentives to exit education. Subsidies which target disadvantaged youths (e.g. those with a lower level of education or low wages) might be especially prone to these disincentives, as acquiring the skills that would lead to increases in productivity and wages implies losing eligibility for the subsidy (Oskamp and Snower, 2006, O'Leary et al., 2011). For example, the model for skill formation developed by Heckman et al. (2002) suggests that, under some circumstances, a wage subsidy can reduce incentives to invest in skills development, as the subsidy is too attractive to “waste time” on schooling or training. If this is the case, wage subsidies

might promote positive labour market outcomes amongst young people in the short run, but may be detrimental in the longer term.

Finally, stigma effects can occur when firms view the targeted subsidy as an indication of the potential employee's low productivity and, contrary to the policy intent, they avoid hiring from the group of those eligible. Alternatively, the targeted workers themselves may feel that eligibility is stigmatizing and degrading, and may try to conceal their eligible status.

2.3 The design of subsidies: Theoretical and practical considerations

2.3.1 The payee

The first issue to consider is the extent to which the potential employment gain depends on the specific recipient of the subsidy. According to basic economic theory, whether the payee is the employer or the employee should not matter in terms of employment and wage outcomes in a flexible labour market⁶ as the extent to which the employer and employee each benefit from the subsidy depends only on the elasticity of labour demand and labour supply.⁷ However, if there is no downward flexibility in wages, it is more advisable that the employer receives the subsidy. For example, if the amount of the subsidy is just equal to the difference between the legislated minimum wage and the marginal productivity of the worker (which, by assumption, is lower than the minimum wage), and the subsidy is paid to the employer, the worker can be hired at the minimum wage, the subsidy leads to a large increase in employment and the whole amount of the subsidy is captured by the employer as compensation for the lower productivity. On the other hand, if subsidies go to workers (for example, in the form of an income tax credit), the subsidy raises employment by increasing workers' take-home pay while reducing negotiated wages.⁸ If there are (binding) minimum wage laws in force, then the negotiated wages cannot decrease and therefore the wage supplement (paid to workers) is likely to have no effect on formal employment.

2.3.2 Target group

Regarding the targeting of subsidies, the first question is whether the subsidy should apply to both incumbents and new hires or only to the latter. Since general wage subsidies are likely to be more costly, as they apply to a wider group of workers and may lead to large deadweight effects, they are not advocated by economists. Hiring subsidies, on the other hand, require more complex administration and monitoring, which can reduce the take-up of the subsidy (reducing its impact) as well as increasing costs.

When considering the targeting of hiring subsidies, the issue is whether they should apply to all new youth hires or only to a specific group of (disadvantaged) young persons. The first option is likely to be costly and lead to deadweight effects as it also subsidizes job-to-job transitions of youth who are otherwise employable. It might therefore be more advisable to provide subsidies to currently unemployed youth. If a major factor influencing the level of youth unemployment can be attributed to a lack of signals of young people's productivity, then making first-time jobseekers the target of hiring subsidies would be the most effective policy. In contrast, targeting subsidies at disadvantaged youth (those who have been unemployed for more than six months, or

⁶ This is referred to as the "invariance of incidence" or the "equivalence hypothesis".

⁷ The more elastic the labour supply (relative to labour demand), the larger will be the employment increase and the smaller will be the rise in wages.

⁸ Thus, the take-home pay is equal to the worker's marginal product.

those with low skill levels⁹) is sensible if it is assumed that, for these groups, there is a gap between the market (minimum) wage rate and their productivity, and that subsidized jobs can lead to skill formation through learning-by-doing. In general, finely focused targeting can contribute to higher cost effectiveness by limiting deadweight effects, but it can also lead to a higher risk of substitution and stigma effects.

2.3.3 Generosity

The generosity of the subsidy, which is determined by the reduction in employers' wage costs as a result of the programme and the duration of the subsidy, is the main determinant of employers' willingness to recruit young persons, and of the increased demand for young workers as a result of the subsidy.

The subsidy clearly needs to be sufficiently high to make it profitable for the employer to hire the young person; however, theory offers little guidance on what the optimal subsidy amount might be. For subsidies that aim to promote the employment of all young persons, it is sensible to define the subsidy proportional to wages. However, if the goal of the programme is the integration of disadvantaged youth, then setting a maximum threshold for the subsidy or defining it as a fixed amount can be effective, since this design naturally predisposes employers towards hiring low-skilled (and hence low paid) youth, due to the fact that subsidies of fixed amounts cover a larger proportion of wage costs for low-paid workers. Furthermore, if policy-makers seek to offset the gap between young persons' productivity and the minimum wage, then higher subsidies should be given for hiring those with greater disadvantages (such as longer unemployment duration or lower qualifications).¹⁰ Finally, it is logical to front-load wage subsidies (so that the amount reduces over time during the subsidy period) since productivity will increase with experience, and hence the need to subsidize wages reduces as the young person's length of employment increases.

Temporary hiring subsidies are more efficient than open-ended ones. The duration of the subsidy should reflect the type of problems that it is intended to overcome. Subsidies of short duration (six months or less) are useful for overcoming employers' initial reluctance to hire due to the absence of informative signals on young peoples' productivity. Medium-term and longer subsidy periods (from nine months up to two years) can permit young workers to develop necessary skills, and as a result increase their productivity, which in turn means that, in the end, there is no further need for the subsidy. Subsidization beyond this learning-by-doing period tends to be cost ineffective as it leads to deadweight losses. Long-term subsidies are therefore extremely rarely used – typically only in the case of target groups with multiple disadvantages (for example, low-skilled, long-term unemployed and health impaired).

2.3.4 Conditionalities

Imposing conditions on employers can help to limit unintended behavioural responses that reduce the effectiveness of hiring subsidies. First, in the absence of rules that oblige employers to pay back subsidies if the hired worker is dismissed during the subsidy period, it is likely that the basic integration goals of the policy will not be met. Second, in order to prevent employers from churning their workers to exploit hiring subsidies, as well as to ensure longer term integration, employers can be obliged to

⁹ Or, in certain contexts, young women.

¹⁰ Note, however, that this can create perverse incentives for the young person and the firm to “wait” until they become eligible for higher subsidies. Higher subsidies for lower skilled individuals can also result in a reduced incentive to invest in education in the medium to long term.

extend the contract of the subsidized worker after the expiry of the subsidy. Third, restrictions can be imposed on subsidized employers so as to reduce substitution effects and to promote net job creation (for example, by stipulating that a firm is only eligible to be granted the subsidy if it has not previously dismissed any of its workers in a given period).

In order to ensure that the subsidies contribute to the long-term integration of youth, further rules can make it compulsory for employers to provide training or other forms of skills development to the subsidized worker, which may further enhance the effectiveness of these programmes.

2.3.5 Implementation issues

The specificities of the implementation of wage or hiring subsidies have consequences for the effectiveness of the measures through the selection of participants, indirect (administration) costs and take-up.

Unlike training programmes, hiring subsidies involve a two-way matching process. It is therefore impossible to rule out positive selection – in which the most employable individuals are recruited from the pool of eligible candidates – leading to deadweight losses. This tendency can be counteracted by the presence of an implementing agency, such as the public employment service (PES), which pre-screens participants for eligibility. This process does, however, increase both administration costs and the risk of stigma effects. Requirements governing employers' conduct will not be satisfied unless the funding agency monitors compliance regularly and effectively, which also requires additional capacity in terms of agency staff and data sources, making these programmes more expensive.

Imposing conditionalities on employers might reduce negative indirect effects, but these do increase the administrative burden and compliance costs for firms, reducing the potential benefits of the subsidy for employers. The extent of these costs is difficult to quantify, as different types of employers might weight them differently, based on their subjective valuation of the burden. Furthermore, in order to avoid very low take-up rates, stricter compliance rules need to be counterbalanced by more generous subsidies. There is a trade-off between the additional costs incurred due to deadweight and substitution effects and reduced effectiveness due to low take-up.¹¹

The form of the wage subsidy (the “payment vehicle”, as Almeida et al., 2014, refer to it) is the way in which the subsidy is paid to the beneficiaries – whether it is a reduction in social security contribution or payroll tax (targeted at youth), a tax refund (where the subsidy is paid through the tax system, in the form of a refundable tax credit) or a direct payment to the employer or the worker covering at least part of the worker's wage. Both evidence and theory are sparse on the significance of the payment vehicle considered in isolation, although there are some implications and inherent features of the way in which the subsidy is granted that can affect its take-up and success rate. Naturally, payroll tax reductions can only be as large as the tax wedge itself, whereas direct transfers and tax credits can also cover part of the wage in addition to non-wage costs. Payroll tax cuts therefore usually signify a less generous subsidy. The administrative burden on

¹¹ On the one hand, subsidies with very light conditions for employers might have high costs due to the fact that the net employment effect of the programme can be modest (due to deadweight and substitution effects). On the other hand, programmes which impose strict conditions on employers – while avoiding indirect effects and thus leading to the creation of new jobs – can only ensure employer take-up if the subsidy amount is high. Furthermore, while programmes with strict conditions might be highly beneficial for those who actually participate in them, they might contribute to the creation of very few employment opportunities overall (due to low take-up rates).

payees also varies with the form of subsidy, with direct payments usually requiring more time and administration costs, and hence potentially limiting take-up.

3. An overview of recently implemented employment subsidy programmes

This section reviews hiring and wage subsidies for young persons in a large number of countries, with a focus on differences in the design and aims of the programmes. The overview of policies is based on a collection which we gathered relying on two main sources: (i) inventories that cover active labour market programmes and enable users to analyse and process data easily (i.e. including numerically encoded programme features that can be analysed in a spreadsheet), and (ii) our own compilation of impact evaluation papers on wage subsidy measures. In Appendix I, we describe the process of assembling the information on the relevant programmes and point out the limitations of the inventories in attempting to carry out a comprehensive and detailed analysis of wage subsidy programmes. In subsections 3.1 and 3.2, we briefly summarize the measures identified in the evaluation studies and inventories by geographical region, with specific emphasis on the design of the programmes.

3.1 Programmes in developed countries

3.1.1 Countries of the European Union

In Europe, wage subsidies for various target groups are relatively widespread and have been implemented since the early 1980s. In France and Germany, these programmes were introduced partially in response to rising youth unemployment following the recessions caused by the oil crises (see box 1). Most of these early programmes offered generous hiring subsidies (up to 50 per cent of youth wages) for a limited period of time (up to 12 months), targeted at disadvantaged (low-skilled) jobseekers. Firms had to meet several behavioural conditions, including an embargo on dismissals during, and for a limited period after, the subsidy period, demonstrable growth in the number of persons on a firm's payroll and limits on the number of subsidized hires per firm.

The unemployment crisis of the early 1990s saw the creation of a new wave of hiring subsidies, for example those in Denmark and Sweden, which were more limited in duration (typically six months), while new, specifically youth-focused programmes were introduced in the late 1990s in Germany and the United Kingdom. The novel feature of some of these programmes was that they combined on-the-job training and counselling with wage subsidies.

The Youth Practice (Ungdomsprakt) programme, launched in 1992 in Sweden, aimed to provide work experience for youths (aged 18 to 24) with completed high school education who had been unemployed for four months. The placements lasted six months, participants received an "allowance" (which was below market wages) partly financed by the PES, and beneficiaries were also obliged to participate in training as well as counselling and job-search assistance provided by the PES; however, in practice these obligations were not strictly enforced (Larsson, 2003; Costa Dias et al., 2013). Under the terms of the United Kingdom's New Deal – rolled out in 1998 – youth (aged 18 to 24) who had been unemployed for at least six months, could be placed, following a mandatory four-month job-search programme, in subsidized jobs, whereby a flat-rate hiring subsidy was paid to employers over a 26-week period (equivalent to about 40 per cent of the starting wage) and employers were obliged to offer at least one day's training per week to the young person (for which employers received a flat-rate reimbursement).

Box 1
The evolution of youth hiring subsidies in France

Hiring and wage subsidies for employers in the private sector targeted at young people have a long history in France, dating back to 1977. This example provides a brief overview of the evolution of these types of programmes over the past 20 years. While previous programmes were short-lived and consisted mainly of a decrease in payroll taxes for the hiring of young (unqualified) persons, in 1996 a generous hiring programme (the “Employment Initiative Contract”) was initiated for long-term unemployed youth (aged 16 to 25) without higher education. Within this programme, in addition to an exemption from paying social security contributions, employers were entitled to a subsidy amounting to up to 47 per cent of the minimum wage for two years. The targeting of this programme became increasingly strict and, in 2002, the hiring subsidy was restricted to those individuals who had been unemployed for at least two years. At the same time, a new programme (the “Youth-in-Business Contract”) entitled employers who hired low-skilled youth (aged 16 to 22) on open-ended contracts to subsidies amounting to roughly 20 per cent of labour costs for two years and half this amount for a third year. However, dismissals of youth were prohibited during the subsidy period. In 2006, the programme was extended to include youth with low educational attainment up to the age of 25, but the subsidy duration was cut to two years. In 2008, the abovementioned hiring subsidy for low-skilled youth was abolished and integrated into the new versions of the Employment Initiative Contract.

In 2010, hiring subsidy programmes were streamlined, and the “Unique Inclusion Contract” appeared, which offers a subsidy on the hiring of disadvantaged jobseekers on fixed-term contracts. The contracts can run from six months to two years, and the subsidy amount is regulated by the regional PES offices, but cannot exceed 47 per cent of minimum wages. In order to claim the subsidy, employers must not have dismissed any regular employees in the six months prior to recruiting a person eligible for the subsidy. In the aftermath of the recent financial crisis, youth unemployment continued to grow in France between 2010 and 2012, resulting in new hiring programmes specifically targeting youth being initiated. During 2013, two programmes, which were primarily oriented towards non-profit organizations, but also open to the private sector, were launched. The first, “Jobs of the Future” for unqualified youth (aged 16 to 25) who have been out of work for at least six months, offers subsidies amounting to 35 per cent of minimum wages (€500 per month) for a period lasting up to two years upon hiring and, in principle, a complementary mentoring/training plan should be drawn up. The second programme, “Generation Contract”, offers lump-sum payments of €4,000 per year for three years upon hiring young persons (aged 16 to 25) on permanent contracts, along with the obligation to keep (or hire) older employees (aged 55 and over) and assigning an older “mentor” to newly appointed young employees.

Source: Aeberhardt et al., 2011; Gineste, 2014.

In several Continental European countries, wage subsidy programmes aiming to promote the reintegration of long-term unemployed, those at risk of long-term unemployment and disadvantaged (low-skilled) persons, have been used for more than 15 years. These programmes were open to young people after a shorter qualifying period of unemployment than that applicable to adults (or young people benefited from other preferential treatment) or were complemented by programmes specifically targeting youth. In Germany, the federal ALMP called “Immediate Action Programme for Lowering Youth Unemployment” aimed to reduce youth unemployment between 1999 and 2004. Under the programme, firms hiring young persons (under the age of 25) had the opportunity to choose between a subsidy that covered 40 per cent of the worker’s wage for two years, or an alternative that covered 60 per cent of the wage but lasted for only one year (Caliendo et al., 2011). In accordance with other hiring subsidy programmes in Germany, strict conditions were imposed on employers: if they dismissed the worker during the subsidy period, or a period equal to half the length of the subsidized period after the subsidy ran out, they were obliged to pay back half of the subsidy. A hiring subsidy programme instituted in 1999 in Austria (Eingliederungsbeihilfe) was similarly generous, with subsidies lasting for up to two years covering up to 60 per cent of gross wages. While adults become eligible for this subsidy after 12 months of

unemployment, youth (aged 16 to 24) qualify after six months of registration. In both the Austrian and German programmes, selection for participation depends to a certain extent on soft profiling by PES caseworkers. The ACTIVA programme, rolled out in 2002 in Belgium, offers employers flat-rate reductions in payroll taxes and direct wage subsidies for hiring long-term unemployed persons. Low-skilled (those who have not graduated from upper secondary school) youth qualified for the subsidy after six months of unemployment, and employers of this group of beneficiaries benefited from 50 per cent higher reductions in payroll taxes for a period twice as long (two years) as that applicable to employers of adults or youth with higher skills.¹²

There has been a growing number of wage subsidy programmes for youth in Europe in the past ten years, largely in response to the rising youth unemployment in the wake of the recent economic crisis. These take a variety of forms. In Sweden, in order to promote the employment of youth, payroll taxes for *all* young workers were reduced in two subsequent steps between 2007 and 2009, effectively resulting in the halving of payroll taxes for youth between the ages of 18 and 26.¹³ Since 2010, policy-makers in Finland have taken the path of simplifying administrative procedures and promoting hiring subsidies for young persons by issuing vouchers to eligible jobseekers. In the United Kingdom, a new hiring subsidy (forming part of the Youth Contract) targeted at youth who have been unemployed for six months was introduced in 2012. This subsidy, which is set at a flat rate and paid in arrears, covers around 40 per cent of a young person's wages for a six-month period. In Belgium, the already existing hiring subsidy (ACTIVA) was temporarily (for appointments made during 2010) made more generous – with complete exemption from payroll taxes, higher direct subsidies and longer subsidy periods – and this increase was directed towards youth under the age of 19.

In countries that were particularly badly affected by the recent crisis, a large number of different incentives were enacted to promote the employment of young persons. In Portugal, this initially took the form of a lump-sum subsidy for hiring as well as a two-year exemption from social security contributions in 2009. In 2012, a new combined hiring subsidy and vocational education programme was introduced for those who have been unemployed for six months, including a wage subsidy covering 60 per cent of the wage for a period of 18 months for youths hired on an open-ended contract. In Greece, since 2010, a number of different (temporary) hiring subsidies (including subsidized internship programmes followed by hiring subsidies) have been implemented, taking the form of a reduction in social security contributions (up to 80 per cent) for up to two years.

In countries with strict employers' protection legislation, characterized by a *two-tier labour market* (mainly, France, Italy and Spain in Europe), wage subsidies addressing youth employment issues have certain notable common aspects. In the 1980s, they aimed to lower youth unemployment through the introduction of subsidized fixed-term contract jobs. For example, the "Job Training Program" in Italy (effective between 1984 and 1991) introduced a two-year fixed contract for hiring youth, complemented by a generous reduction in employers' social security contributions (coupled with the requirement to offer on-the-job training). More recently, with the advent of widespread job precarity among youth (characterized by a cycle of fixed-term jobs and unemployment), programmes in these countries specifically aim to increase the number of youth working on permanent contracts. Policy-makers in Spain introduced payroll tax cuts for hiring

¹² The main conditionality for employers was that they could not hire an individual eligible for a subsidy (a) if another worker had been made redundant in the same line of work within the previous six months and (b) if the person had worked at the same company in the previous six months.

¹³ A hiring subsidy (New Start Jobs) targeting long-term non-employed was also introduced in 2007, which entitled employers to a subsidy equal to the level of payroll tax. Youth (aged 18 to 25) were eligible for the subsidy after a six-month period of non-employment, and their employers were entitled to the subsidy for one year. The rate of the subsidy was doubled in 2009.

youth on open-ended contracts, along with a reduction in firing costs for open-ended contracts (between 1997 and 2001), and lump-sum payments for hiring youths on permanent contracts (between 2006 and 2010). In Italy, temporary tax credits for firms hiring workers on open-ended contracts (between 2001 and 2003), similar programmes for youth (starting in 2011) and lump-sum payments for converting fixed-term into permanent contracts for youth (in 2012) were used. In order to allow these measures to contribute to overall employment growth, policy-makers have introduced conditionalities for employers that curtail the churning of workers¹⁴ or tie subsidies to an expanding workforce.

In Central and Eastern European countries, hiring subsidies for disadvantaged unemployed (including youth and first-time jobseekers) have been used since the middle of the 1990s (for example, in Hungary and Poland) or early 2000s (in Bulgaria, Croatia, Estonia and Romania). Most of these programmes largely followed the lead of Continental European countries: with generous subsidies paid to employers (up to 50 per cent of wages) for, typically, a year and with conditions imposed on subsidized firms which were similar to those applying to programmes in Germany. A number of these countries introduced new programmes in the immediate aftermath of the recent economic crisis, with large variations in the type of programmes. For example, a hiring subsidy in the form of a lump-sum payment for employment contracts that last for (at least) one year (corresponding to roughly 55 per cent of minimum wages) was introduced in 2009 in Slovenia. In contrast, a hiring subsidy in the form of reductions in payroll taxes targeting first-time jobseekers was introduced in Hungary in 2005: this was in the form of a voucher issued to the eligible jobseeker, which entitled the employer to a reduction in labour costs for a two-year period. This programme was later (in 2011) replaced by an employment subsidy programme targeting young persons (under the age of 25) also for two years. Most recently, in the context of the Youth Guarantee, and with financial support from European Social Funds, new youth hiring subsidy programmes have been implemented (in Croatia, Latvia and Lithuania) or have been extended (in Bulgaria) since 2012. These initiatives have some common features: they target first-time jobseekers and youth (aged 16 to 29) and provide a generous subsidy (between 25 and 50 per cent of youth wages) for a fixed amount of time (nine to 12 months).

3.1.2 Anglo-Saxon countries

In major English-speaking OECD-countries outside Europe, subsidies are either aimed at disadvantaged youth, and are often linked with on-the-job training, or cover all youth hires and take the form of tax credits. In the United States, there were two large-scale federal programmes which included disadvantaged youths among the targeted groups, while a wealth of state-level hiring subsidy programmes exist which are rarely targeted (Neumark and Grijalva, 2013). The Targeted Jobs Tax Credit (between 1979 and 1994) provided relatively generous hiring incentives through tax credits (primarily for low-wage jobs), initially for a two-year period.¹⁵ The Job Training Partnership Act (between 1983 and 1988) provided temporary hiring subsidies (for six months) to employers who recruited disadvantaged jobseekers and offered on-the-job training programmes. In Canada, while direct payments to employers in apprenticeship programmes are prevalent at the regional level, at the federal level the Youth Hires Programme provided a small payroll tax reimbursement between 1999 and 2000 for

¹⁴ In Spain, firms that had wrongfully dismissed any of their workers eligible for the payroll tax cut in 1997 were not allowed to hire another worker eligible for the subsidy within one year; also, the subsidized worker could not have been an employee of the firm in the previous 24 months (Elias, 2014; Kugler et al., 2002).

¹⁵ The duration of the subsidy was later halved to one year.

increasing the number of young employees on the payroll (Webb et al., 2012). The Australian Special Youth Employment Training Programme (SYETP) was a large-scale programme between 1976 and 1985 targeting disadvantaged youth, which provided a short-term flat-rate wage subsidy for employers; despite its name, there was little emphasis on actual training (Richardson, 1998). The subsequent Jobstart programme was a hiring subsidy targeting long-term unemployed, irrespective of age, with durations and subsidy rates varying according to age and length of unemployment.

3.2 Programmes in developing countries

Despite the apparent tendency of developing countries to adopt increasing numbers of wage subsidy measures (Almeida et al., 2014), youth wage subsidies seem to be far less common in the developing world compared with OECD-countries. Impact evaluation studies of youth wage subsidy programmes are also much scarcer in these countries. On the one hand, this can partly be explained by the “evidence gap” relating to labour market programmes in developing countries, as generally fewer impact evaluations are conducted there due to lack of data and research capacities. On the other hand, the scarcity of evidence is partly due to the fact that youth wage subsidy programmes are less popular in developing countries.

This situation may be explained by two primary reasons. First, training programmes can be more effective than subsidies as youths have fewer skills, due to the lower quality of education available in developing countries. Notably, in Latin America and the Caribbean, youth-targeted training programmes tend to have a greater impact on employment rates than in Europe (Corseuil et al., 2013; Kluve, 2014). These programmes are not included in our analysis; however, box 2 provides an overview of some typical large-scale on-the-job training programmes in Latin America.

Second, the scope of formal wage employment is often limited in developing countries. The majority of workers are self-employed as own-account workers or contributing family workers. Recognizing the limited possibilities for formal job growth, encouraging (formal) self-employment of youth with entrepreneurship subsidies is generally considered to be a more successful way of promoting youth employment (Kluve et al., 2014). Start-up subsidies can thus take over the role of hiring subsidies in some countries, and are particularly popular in the Middle East and Africa.

We found very few examples of large-scale wage subsidy programmes in Latin America and the Caribbean as youth-oriented measures in that region primarily focus on a training element. The most notable example comes from Chile, where the *Subsidio al Empleo Joven* (SEJ) was initiated in 2009 and targeted vulnerable youth aged between 18 and 24 (for the details of the programme, see box 3). It was a rare example of a “pure” large-scale wage subsidy programme where training was not a compulsory element.

Box 2

Evaluation of combined on-the-job training programmes in Latin America

A number of large-scale, work-based training programmes have been implemented in Latin America; for example, in the Dominican Republic, Colombia and Mexico.

In the Dominican Republic, a combined classroom training and internship programme of experimental design (*Juventud y Empleo*) was implemented from 1999 to 2007. The target group comprised low-income youth (aged 18 to 29) with less than secondary education who were enrolled on a three-month off-the-job training course followed by a two-month internship at private firms, during which they received a stipend. Several impact evaluations (Ibarrarán et al., 2006; Card et al., 2011; Ibarrarán et al., 2014) were conducted on programme effects, finding no evidence of positive overall impact on employment, although they did find some small positive effects on earnings.

Another randomized-controlled trial, the *Jóvenes en Acción*, was introduced in Colombia between 2001 and 2005. The programme provided a three-month period of classroom training and three months of on-the-job training to disadvantaged youth between the ages of 18 and 25. Participants worked five hours per day on average during their unpaid internship, and received a food and transportation allowance. Unlike *Juventud y Empleo*, the impact evaluation of this programme yielded positive estimated impacts on employment probability and earnings (Attanasio et al., 2011).

In Mexico, the *PROBECAT* training programme (renamed *SICAT* in 2001 and *Bécate* in 2005) started in 1984 and had expanded dramatically by the second half of the 1990s. Participation was not limited to youth (but most participants were under 25) and comprised a mixture of classroom and on-the-job training for a three-month period, during which participants received a scholarship. At the end of their internship, firms were obliged to hire at least 70 per cent of the trainees. Based on the impact evaluation by Delajara et al. (2006), the programme had a small but positive impact on the employment probability of participants, but had no effect on wages.

Further Latin American examples of combined wage subsidy and training measures for unemployed youth are provided by programmes in Chile (the *Chile Joven* from 1991), Argentina (the *Proyecto Joven* from 1993) and Uruguay during the early to mid-1990s; the impact of these programmes, however, was never evaluated (Smith, 2006).

In North Africa and the Middle East, high unemployment rates among youth present a serious problem. Spending on active labour market policies for youth is relatively high in this region, and hiring subsidies are common.

In view of the relatively high unemployment rate of graduates in North Africa, hiring subsidy programmes often target higher education graduates in an attempt to achieve long-term labour market integration. Such programmes for graduates seeking their first jobs have been used in Tunisia since the late 1980s. The *Stage d'Initiation à la Vie Professionnelle* programme included a combination of reductions in payroll taxes and direct hiring subsidies for a period on 12 months, with the subsidies varying according to the level and subject of graduate degree, on average covering one-third of starting wages. Employers had to repay subsidies (and payroll taxes) in the event that they broke the contract, and they were only allowed to recruit a new subsidized graduate if they could prove that they had hired at least one-quarter of their subsidized workers over the previous three years under permanent contracts.

Box 3

A shared subsidy: The Subsidio al Empleo Joven programme in Chile

In order to tackle persistently high youth unemployment rates and to increase youth employment in formal jobs, two recent wage subsidies have been instituted in Chile. The 2008 pension reform¹⁶ incorporated a small decrease in payroll taxes for employers hiring young persons (aged 18 to 35) in low-wage jobs for up to two years. In 2009, a new programme offered wage subsidies targeting vulnerable youth between the ages of 18 and 25. This programme had a number of interesting features. Eligibility was based on a “vulnerability score” (Ficha de Protección Social), and hence it effectively targeted those young persons who belong to the poorest 40 per cent of the population, with eligibility running out one month after the individual’s 25th birthday. The subsidy was shared between the employer and the worker, who each had to apply separately. Workers were entitled to a direct subsidy (a wage bonus) which amounted to 20 per cent of their wages, paid either annually as a lump sum or in monthly instalments. Employers received a monthly payment of up to 10 per cent of the eligible worker’s wage. The exact amount of the subsidy depended on the worker’s wage, with a higher percentage allowed for lower wage earners. In the event that the employer’s social security contribution payments were not up to date, the claim for the subsidy could be rejected (which happened in approximately 11 per cent of the cases), although this condition did not apply to workers. Therefore, a case could arise in which only the employee received the benefit.

Evaluations of the measure (Bravo and Rau (2015); Gersdorff and Benavides (2012) revealed that take-up by firms was relatively low (at about 3–5 per cent), and about half of the firms which took advantage of the subsidy were microenterprises with fewer than ten employees. Considering all the eligibility criteria, approximately 20–30 per cent of workers were covered by the subsidy.

A similar programme has been in place since 1999 in Algeria, providing subsidies of 12 months’ duration to employers who hire graduates from higher education. A new and more generous hiring subsidy programme (Contrat de Travail Aidé) started in 2008, and subsidies were made available for the hiring of all first-time jobseekers. The amount and the duration of the wage subsidy is dependent on the young person’s level of qualifications, and employers also benefit from a reduction of payroll taxes during the period of the subsidy.

A similar programme (Idmaj), was established in Morocco in 2006, which is the largest active labour market policy targeted at youth in the country, with an average of 50,000 participants each year during the period 2006–13. This programme targets young graduates from universities and baccalaureate holders (and young people with equivalent levels of education who graduated from vocational-type programmes), who are registered as unemployed. The programme offers payroll tax reductions for firms if they employ young workers for a fixed-term paid internship programme lasting between 18 and 24 months, as well as a reduction on personal income tax for youths participating in the programme. In the event that the employer recruits the intern, a tax exemption for a further 12 months is possible (Ibourk, 2012).

Finally, in Jordan an experimental programme (New Opportunities for Women) targeted recent female college graduates. Randomly selected participants received a voucher that entitled their potential employers to a six-month flat-rate wage subsidy with a value equal to the minimum wage.

¹⁶ The pension reform also included a 50 per cent cut in employees’ pension contributions for low wage earners (defined according to slightly different terms to those in the SEJ) between 18 and 35, which applied for 24 months. Either this subsidy or the SEJ could be applied for (it was not possible to take up both). The employment impacts of this part of the reform have not been evaluated.

The reduction in payroll taxes for new recruits in 2008–09 in Turkey had the dual aim of (a) decreasing informal employment and (b) favouring the integration of relatively disadvantaged groups into the labour market. The Employment Package entailed a waiver of all employers' social security payments – which constitute approximately 15 per cent of labour costs – for hiring women and young men (aged 18 to 29), who had not been formally employed during the previous six months and with the condition that the new appointments would increase the size of the firms' workforce. The subsidy was designed to last for four years, covering all social security payments in the first year of hiring and subsequently decreasing annually in four steps. While this programme was originally intended as a temporary measure, it has been extended several times, most recently in 2011.

There seem to be very few youth wage subsidy programmes in Sub-Saharan Africa. With the exception of South Africa (which is a richly documented case, see box 4), none of these measures has had an impact evaluation. The inventories surveyed also suggest that most measures which offer subsidized work for youth are similar to public works programmes: transitory employment on the secondary labour market, such as construction work, maintaining public infrastructure and temporary work in the agricultural sector.

Box 4
The youth wage subsidy pilot and subsequent debates in South Africa

South Africa is characterized by extremely high youth unemployment rates, especially among black Africans: close to two-thirds of non-white South Africans aged 20–24 were unemployed in 2012 (Levinsohn et al., 2014). To tackle this problem, a committee of experts came up with a proposal for a youth wage subsidy in 2006 and a pilot programme was launched in 2010. The programme had a randomized-controlled trial design: vouchers were handed out to randomly selected unemployed youth between the ages of 20 and 24. The voucher entitled its holder to a subsidy with a total value of 5,000 South African rands, which could be claimed over a minimum of six months and until the total amount was exhausted. The maximum monthly amount of the subsidy was half the wage or 833 rands (whichever was lower). This monthly cap corresponded to about 40 per cent of the median wage in the target group (ibid.). The subsidy was also transferable between companies before exhaustion.

After the pilot, which was considered generally successful, plans for a national roll-out were worked out and debated. A simulation based on a structural search model (Levinsohn and Pugatch, 2014) estimated that a wage subsidy of 1,000 rands per month would lead to a decrease in the share of long-term unemployed youth by 12 percentage points.¹⁷ A firm-level survey conducted in 2011 (Schoer and Rankin, 2011) investigated employers' reactions to a hypothetical youth wage subsidy. Their results indicated that the majority of the surveyed firms would have considered hiring more young workers, although they also suggested that they would not necessarily increase their labour force but would substitute younger workers for older ones.

After several roundtable discussions and background studies, President Jacob Zuma signed the Employment Tax Incentive Act in 2013, which introduced the wage subsidy nationwide. In contrast to the original scheme, which offered direct payments at a relatively high level, the new scheme offered tax incentives for up to two years to employers who, after 1 October 2014, hired low- to middle-level wage earners (those earning below 6,000 rands) aged between 18 and 29. This measure has been receiving substantial media attention ever since its first planning phase, as the Congress of South African Trade Unions (COSATU) has been opposing the wage subsidy, based on fears about the displacement of older workers and rising levels of unemployment, with demonstrations and the threat of strikes.

Based on data from the two inventories, as well as our own research, youth wage subsidy programmes are basically non-existent in East Asia.

¹⁷ The assumption of the model was that the subsidy would be passed to jobseekers in its entirety in the form of wage offers, thus presenting a very optimistic best-case scenario.

1. An assessment of what works: A review of the evidence

In this section, after a brief overview of the evaluation strategies for wage subsidies, we provide an in-depth analysis of the empirical studies assessing the programme effectiveness. Throughout this analysis, we will be covering studies by categories of programmes, hence we provide a basic sketch of the typical features of these stylised categories in Table 1.

Table 1. Main features of programmes, by programme type

Programme type	Targeting	Target group	Generosity (% of wage costs)	Duration	Conditionality	Payment vehicle
<i>Payroll tax reduction</i>	All eligible	All youth	Low (maximum 10%)	Temporary or permanent	Weak, mostly for hiring	Payroll taxes
<i>Hiring subsidies for disadvantaged youth</i>	Finely targeted, caseworker selection	Disadvantaged (LTU, low education)	High (50%)	12–24 months	Strict (no dismissal; no direct substitution)	Direct payment
<i>Work experience programmes</i>	Broad	Unemployed	High (50% or more)	3–6 months	Weak	Direct payment
<i>Subsidies in two-tier labour markets</i>	Broad	Unemployed	Low (10–15%)	24 months	Recruitment on permanent contract	Varies
<i>Combined hiring subsidy and on-the-job training</i>	Finely targeted, profiling	Unemployed (LTU)	Medium (20–40%)	6–12 months	Provision of training	Direct payment
<i>Experimental programmes in developing countries</i>	Broad	Varies	High (40–50%)	6 months	Weak, (hiring in formal job)	Vouchers, direct payment

4.1 Evaluating the impact of wage subsidies: A primer on methods

The main objective of evaluation studies is to estimate what would have happened to programme participants (those eligible for a wage subsidy) in the absence of the programme (i.e. the counterfactual). This is done in order to separate out effects that have little to do with the intervention (stemming, for example, from the composition of programme participants or more favourable economic conditions in programme areas) from the impact of the programme.¹⁸ The primary challenge then is to find a suitable “control group”, composed of individuals whose characteristics that may influence their labour market opportunities are similar to those of the programme participants (the “treatment group”), but who do not participate in the wage subsidy at hand. Here we will provide a very brief overview of the methods used in micro-econometric evaluation

¹⁸ The impact of a programme is defined as the difference between the actual outcomes of programme participants and their counterfactual outcomes – that is, outcomes which would have occurred had they not participated in the programme.

studies, specifically calling attention to some pitfalls, as well as providing some insight into whether substitution and deadweight effect can be addressed.

At this point a further, very specific empirical issue that arises when evaluating wage subsidy programmes (relative to many other ALMPs) should be noted: while some studies aim to identify the effect of *being eligible* for a wage subsidy, others examine the impact of *receiving a wage subsidy*. These choices are often due to the specific design of the programme, as well as the specificities of the data at hand.

Looking at all those eligible to receive a subsidy (but not necessarily receiving it) is useful for estimating whether the “offer” of a subsidy increases the (re)employment probability of the target group,¹⁹ as well as evaluating the take-up of the subsidy. This type of study is primarily based on programmes with relatively simple eligibility rules (say, a young person who has been registered as unemployed for six months is entitled to a wage subsidy). The areas of interest are eligible persons’ labour market outcomes both during the subsidy period and in the longer run. However, the latter can only be estimated if researchers have access to administrative data (and hence know whether a particular job was subsidized) and if the programme provided only a temporary subsidy.

In contrast, for programmes where eligibility is (partially) dependent on the decision of the PES caseworker, the “offer” of a subsidy is typically not recorded in (administrative) data sets used by researchers, hence they can only know whether the individual participated or not. In this context, the treatment group is composed of individuals who were recruited with a subsidy. In this case the outcome of interest is primarily whether participants are able to retain jobs after the subsidy is exhausted.²⁰

Experimental evaluation studies are often deemed the most reliable (they have the highest level of internal validity), as in these the offer of a wage subsidy is randomized, which guarantees that the members of the “treatment” and the “control” group have the same productive characteristics. The drawback is that it is not easy to estimate what the effects of a scaled-up programme would be, since many of the indirect effects might not materialize during the experiment, and only simply designed programmes can be evaluated as the researchers often do not have the tools to monitor and enforce behavioural conditions.

A second fruitful approach is often applied when the eligibility for subsidies is determined by a cut-off value of some observable characteristic (for example, age or months of prior unemployment).²¹ Since determinants of potential outcomes are not expected to exhibit a jump at these points, a comparison of persons just below and just above the threshold value can produce reliable estimates of the effect of eligibility for the subsidy. However, the risk that the potential positive impact of the programme is due to substitution effects is pronounced in this case.²² It should also be noted that this method relies on a comparison with those individuals close to the threshold, hence extrapolation to the whole population can only be achieved using strong assumptions.

A third commonly used method examines the trends in labour market outcomes of those eligible for the programme and those who are ineligible around the time of the introduction of the subsidy.²³ Specifically, it compares the change in outcomes between the participant group and the selected comparison group – who typically come from similar (but ineligible) age groups, or from those who live in similar locations but where

¹⁹ This is what is called in the evaluation literature the “intention to treat” parameter.

²⁰ Since, in this type of analysis, by definition all “treated” individuals have taken up the subsidy, so looking at employment rates during the subsidy period can only inform researchers whether any of those recruited with the subsidy were fired “early”.

²¹ This is the so-called “regression discontinuity” method.

²² Since individuals just above and just below the cut-off value for eligibility can be assumed to be otherwise identical, and hence easily substitutable.

²³ This is the so-called “difference-in-difference” method.

the programme was unavailable – before and after the introduction of the programme. The idea behind this method is that the trend in the labour market outcomes of the comparison group yields an accurate representation of what would have happened to the participant group in absence of the programme. This relies on the assumption that there were no other changes (due to legislation or labour market shocks) corresponding to the introduction of the programme that might have affected the outcomes of the two groups *differentially*.²⁴

Finally, there are methods that rely on the assumption that, given a sufficiently rich dataset, if those who are ineligible but otherwise possess the same observable characteristics (relevant to determining labour market outcomes) are “matched” to participants, then the two groups will only differ in their employment chances due to the programme. This method has most frequently been used in cases where no data about the offer (only the take-up) of a wage subsidy are recorded, and requires very careful consideration of how the pool of ineligible comparators is selected.²⁵

It must also be noted that none of studies based on individual (worker) level data can provide direct evidence regarding the indirect effects of subsidies.²⁶ This can only be done based on linked employer–employee data; however, we are unaware of any studies that currently provide evidence on these issues for youth programmes. Hence, most of the studies reviewed provide “gross” effects for the employment probability of the targeted youth.

4.2 Payroll tax reductions

The evidence on payroll tax reductions targeted at youth is scarce and analyses report mixed results. The common feature of the programmes reviewed is that they did not explicitly target disadvantaged young people, that they led to modest reductions in labour costs and that their aim was to increase the employment rate of youth in general.

Egebark and Kaunitz (2014) estimate the impact of the payroll tax changes enacted in 2007 in Sweden on young persons (aged 18 to 24).²⁷ This change led to an 11 percentage point reduction in payroll taxes (representing approximately a 9 per cent decrease in total labour costs) and applied *unconditionally* to all young employed persons.²⁸ The authors show that this decrease in payroll taxes resulted in a very modest increase in the employment probability of the target group, of around 2 per cent, relative to slightly older individuals. However, when taking into account substitution effects, the net impact of the tax reduction on the absolute employment rate of young persons is shown to be only about 1 per cent. Due to this very small effect on employment, the payroll tax reduction is unlikely to have been particularly cost effective: the total costs of

²⁴ This is the so-called “parallel trends” assumption.

²⁵ Researchers typically use two groups, selected from among those who started their unemployment spell at the same time as the wage subsidy recipients: those who – in the period during which the subsidy beneficiaries started their jobs – found jobs without a subsidy, or those who were still unemployed at that time.

²⁶ Researchers relying on worker data mainly use circumstantial evidence to determine indirect effects. For example, to establish substitution effects of youth wage subsidies, they compare the outcomes of a slightly older age group – who are likely to be those most easily substituted for youth – with even older groups.

²⁷ Note that effects of the financial crisis only became evident on the Swedish labour market in 2009, so this analysis concerns a relative boom period.

²⁸ The authors use a difference-in-difference type of methodology, with slightly older (non-eligible) individuals constituting the control group.

additional jobs created for young persons is close to four times the total hiring costs of these individuals.²⁹

Evidence of a more effective payroll tax reduction policy emerges from the work of Webb et al. (2012) on the Canadian Youth Hires programme, which temporarily decreased the labour costs of hiring young persons (aged 18 to 24) by about 3.5 per cent in 1999–2000. This subsidy came in the form of an automatic refund of employers' contributions to the unemployment insurance (UI) fund and led to an *increase* in the aggregate UI insurable payroll for those in the relevant age group relative to the base year of 1998. The authors find a 3.5 per cent increase in the number of weeks spent in employment for the target group, relative to a slightly older comparison group (aged 25 to 29). However, they also present evidence that the increase in young persons' employment came at the expense of these slightly older individuals – hence, the net impact of the tax reduction was probably closer to 2.5 per cent.

The Employment Package of 2008 in Turkey included a generous subsidy for hiring women and young men (aged 18 to 29) who had not been formally employed during the preceding six months in the form of a reduction of employers' payroll taxes. The subsidy applied exclusively to new hires that increased firms' employment, and it lasted for five years, covering all payroll taxes initially – equivalent to about 15 per cent of labour costs – and subsequently decreasing in five annual steps to zero. Barza (2011) evaluates the short-term impact of the subsidy on the outcomes of young men (aged 25 to 29).³⁰ Her results show a very small positive impact on formal employment, in the region of a 4 per cent increase in employment probability for eligible young men. The author also shows that this increase is mainly due to young persons moving from unemployment and inactivity into formal employment, and only about one-quarter of the impact is due to employers formalizing the employment contracts of previously informal workers. This policy was originally available for hires over a one-year period, but it was prolonged for an additional year. Ayhan (2013), while examining the impact of the policy over a two-year period, presents positive results as the policy increased the hiring rate of young men (aged 25 to 29) by 1.3 percentage points, relative to slightly older men.

These studies highlight some important aspects of payroll tax reductions. First, it is evident that hiring subsidies are more effective in increasing the employment probability of the target group than wage subsidies. Second, the institutional context and labour supply incentives play an important role in influencing the employment effects. In countries where the labour supply of young persons is more responsive to potential wage increases (either because the welfare system is less generous³¹ or because there is significant informal employment) hiring subsidies lead to larger increases in formal employment.

4.3 Targeted hiring subsidies for disadvantaged young persons

In this section, we summarize the evidence on hiring subsidies that specifically target disadvantaged youth and provide direct payments. There is substantial variation in the aims and characteristics of programmes, and we will discuss these different types of programmes separately.

²⁹ Which corresponds to the total payroll tax revenues foregone relative to the (estimated) number of additional jobs created due to the programme. Hiring costs relate to total wage costs less payroll taxes.

³⁰ This analysis is carried out using a difference-in-difference methodology, by contrasting the change in outcomes between 2007 and 2008 of young men aged 25 to 29 with that of men aged 30 to 34.

³¹ The net replacement rate of unemployment benefits for low-wage single persons is more than 20 percentage points higher in Sweden than in Canada or Turkey.

4.3.1 Subsidy programmes aiming to provide long-term integration for youth in Europe

The main features of these programmes are that they cover a substantial fraction (typically 40 per cent or more) of the young person's wage costs, they can be claimed for a limited, but relatively long period (typically for one to two years), and often the offer of the subsidy is partially dependent on a PES caseworker's decision. The aim of these programmes is to provide sufficiently long subsidized jobs to enable youth to develop skills and improve their long-term employment opportunities.

Caliendo et al. (2011) study the impacts of two wage subsidy programmes – the standard wage subsidy available for insured unemployed and a youth-targeted wage subsidy – on the long-term outcomes of unemployed youth (aged 18 to 24) in Germany, who entered unemployment in 2002. The “standard” wage subsidy covered up to 50 per cent of the participant's wages (paid to the employer) for up to one year; while the youth wage subsidy ran for two years, covering 40 per cent of the young person's wages. Employing workers with a subsidy entailed some strict conditionalities for employers: if they dismissed the worker during the subsidy period or within a period equal to half the length of the subsidy after the subsidy ran out, they were obliged to pay back half of the subsidy. The authors – comparing the outcomes of wage subsidy beneficiaries with youth who did not participate in an active labour market policy but who otherwise had similar observable characteristics – find very large post-programme employment effects on unsubsidized jobs for both programmes. Moreover, the employment probability of participant youth was not only substantially higher immediately after the subsidy period, but the effect of the programme – although it decreased over time – persisted for up to five years after entry into the programme. In other words, even two to three years after the subsidy had run out, youth who had participated in a wage subsidy programme had employment rates which were approximately 10–15 per cent higher than non-participants.³² Unsurprisingly, the impact of the youth-targeted wage subsidy (as opposed to the general one) was higher, since the value of the targeted subsidy was higher for the employer. Finally, it is worth noting that the beneficial effects of the subsidies were higher in the Eastern part of the country, where the labour market was more depressed, and that highly skilled youth obtained the greatest benefit from the subsidies.

A similarly generous wage subsidy – lasting for up to two years and covering up to 60 per cent of gross wages – targeting long-term unemployed³³ in Austria has recently been evaluated by Eppel and Mahringer (2013). However, this programme does not have strict non-dismissal clauses. Their results point to somewhat more muted effects of the programme: young persons have accumulated approximately nine to nine-and-a-half months more employment and about four months more unsubsidized employment than similar non-participants (which equates to a 10 per cent increase) five years after the start of programme participation.³⁴ However, it is worth noting that, according to the authors' estimates, approximately 60 per cent of those who found a job with the help of the subsidy would also have been employed in its absence.³⁵

This type of wage subsidy has also been used in Eastern Europe; however, reliable impact evaluations are very scarce – indeed, the only study that examined the outcomes of young persons is that of O'Leary (1998). He evaluated a programme implemented in

³² This means that subsidized workers have accumulated approximately eight-and-a-half to nine months' more unsubsidized employment over a period of five years than non-participants.

³³ For young persons, this meant having been unemployed for at least six months.

³⁴ However, for prime-age (25–44) and older (45–54) unemployed persons, the effects are even more pronounced.

³⁵ As a result, a simple cost-benefit analysis reveals that the programme would break even after five years. However, this analysis is restricted to the direct labour market effects of the programme and only considers the gains accruing to the public budget.

1996 in Hungary, which targeted young persons who had been unemployed for at least six months. The subsidy lasted for up to one year, covered 50 per cent of wage costs and the employer was penalized for dismissing the worker both during the period of the subsidy and afterwards for a period at least as long as the subsidy's duration. Comparing the outcomes of wage subsidy beneficiaries with similar non-participants³⁶ one year after the subsidy ended shows a small positive impact of the programme for young persons (aged 16 to 29); their employment probability being about 15 per cent higher than non-participants. However, much of this success is attributable to participation in (further) subsidized employment, as employment in non-subsidized jobs in the primary labour market is only slightly higher for wage subsidy beneficiaries.³⁷

While the results of these studies are mixed, they point out that: (a) generous hiring subsidies with long durations can be conducive to improving the long-term employment outcomes of youth; (b) it is likely that imposing non-dismissal obligations on employers is beneficial for long-term employment prospects of subsidized youth; (c) fine-tuning the targeting of these subsidies is important, since they can have substantial deadweight effects.

4.3.2 Work experience programmes

These are programmes that aim to provide short-term work experience to young persons, with the primary objective of providing firms with concrete evidence of participants' productivity and therefore increasing their employability.

The Special Youth Employment Training Program, which was in place until 1985 in Australia, offered a flat-rate subsidy for youths (aged 16 to 24) who had been unemployed for at least four months in the previous year.³⁸ The subsidy lasted for only 14 weeks and covered about 50 per cent of typical youth wages. Richardson (1998) and Knight (2002) examined the impact of the programme roughly one year after participation, and found a small positive effect of around 10 per cent on participants' employment probability. A similar programme, which provided subsidized work experience for youth (aged 18 to 24) with a high school education who had been unemployed for four months, existed in Sweden between 1992 and 1995. The placements, which lasted six months, were heavily subsidized, paid below market wages and were meant to be supplementary in nature (i.e. not displacing existing jobs).³⁹ Evaluations of the short-term (Larsson, 2003) and the medium-term (Costa Dias et al., 2013) impacts of the programme on participants' employment probability show small *negative* results.

Although the evidence on short-term work experience programmes is very limited, it appears that those in which young persons are recruited in the market sector and are paid wages are more successful than programmes that create subsidized positions which are explicitly "additional". A potential explanation for this latter result is that the work performed in these positions neither builds human capital nor is sufficient to provide evidence of productivity in the workplace for potential future employers.

³⁶ Note that the authors' data set contains a limited number of background variables, hence the reliability of the estimates is questionable.

³⁷ It must be noted that a raw comparison of employment outcomes of participants and non-participants (without adjusting for differences across the two groups in observable characteristics) yields differences that are three times as large. This is a clear indication that employers are selecting individuals who would have been able to find a job in any event, hence the deadweight effect of the programme may have been large.

³⁸ This programme, in spite of what its name suggests, did not include a significant training element, although employers were supposed to provide "training plans" to youths.

³⁹ In principle, youths were intended to undertake regular job-search activities and were to be provided with on-the-job training; however, neither of these intentions were strictly enforced.

4.3.3 Hiring subsidies in developing countries

Wage subsidies from middle-income countries outside Europe have seldom been evaluated, and the existing evidence is mainly based on pilot programmes.

In North Africa, the expansion of higher education and a contraction of work opportunities in the public sector has led to an increase in graduate unemployment. In response, Tunisia introduced the “Introduction to Professional Life” (SVIP) programme which targeted recent graduates who had been looking for their first job and had been unemployed for three months by providing a subsidy covering approximately one-third of wages as well as employers’ social security contributions for up to one year. This programme has been popular, with about one-quarter of the target group participating. Broecke (2013) evaluates the impacts of this programme up to one-and-a-half years after the expiration of the subsidy, by contrasting the outcomes of participants and non-participants with similar observable characteristics. He finds that joblessness among programme participants is reduced by about 25 per cent, participants are more likely to be employed in a private firm, but less often have a permanent contract.⁴⁰ However, due to the design of the programme, which was on a first-come first-served basis, it is likely to have had large deadweight effects.

Two recent experiments have explored the effects of wage subsidies in middle-income countries. In Jordan, participants in the New Opportunities for Women programme, targeting recent female college graduates, were randomly selected to receive a voucher entitling their potential employers to a six-month flat-rate wage subsidy with a value equal to the minimum wage. Groh et al. (2012) report that the receipt of the voucher more than tripled young women’s employment probability during the period of the subsidy, and this effect was particularly pronounced outside the capital, where the labour market for female graduates is especially weak. However, while the employment probability was 10 per cent higher among those who received a subsidy voucher than those in the control group, the positive impact of the wage subsidy was much dampened four months after the subsidy ran out, at which point, the difference was no longer significant. The most likely explanation for this short-lived positive effect of the wage subsidy is that most of the jobs created were temporary (and un-registered),⁴¹ and it is very probable that they arose from the displacement of other graduates.

An experimental wage subsidy programme in South Africa, where youth (aged 20 to 24) were allocated a voucher entitling the employer to a refund of 50 per cent of the young person’s wages for a six-month period, proved to be more successful. Levinsohn et al. (2014) show that the short-term impact of the subsidy (one year after allocation) was close to a 25 per cent increase in employment probability and, while the medium-term effect (two years after allocation) was more modest, those allocated the voucher were still 10 per cent more likely to be employed. The authors provide some evidence that it was not only firms’ behaviour driving this positive result (as the take-up rate of the subsidy was low), but also due to the effect of a decrease in young people’s reservation wages. They further point out that, due to the role of networks in information flows, youth with family members in formal employment might have gained greater benefit from the vouchers.

⁴⁰ The effect of the programme was found to be more pronounced in areas outside greater Tunis, where the participation probability of youth in the programme was lower – an indication of ineffective targeting.

⁴¹ The effect of receiving the subsidy voucher was around 50 per cent lower on employment in jobs that were registered with the social security authorities. In fact, it is likely that almost 90 per cent of additional jobs were non-registered.

This latter finding is partly echoed in the evaluation of the experimental wage subsidy programme for workfare (public works) participants in Argentina that was rolled out in 1998. The programme entitled firms to a direct wage subsidy for employing randomly selected individuals with a value equal to roughly 40 per cent of the wage costs of a minimum wage worker, for up to 18 months, under the condition that they formally register the worker. Galasso et al. (2004) found that younger (below the age of 30) voucher recipients' wage employment rates almost doubled.⁴² However, this increase was primarily in temporary informal jobs, as very few employers actually claimed the subsidy.⁴³ This suggests both that voucher beneficiaries changed their search behaviour and that potential employers may have interpreted the voucher as a positive signal.

Wage subsidies provided to both employees and employers for disadvantaged young persons since 2009 in Chile have been shown to lead to a significant labour supply response by Bravo and Rau (2015). This programme entitles disadvantaged youth up to the age of 25 to an income subsidy which amounts to 20 per cent of earned income for low wages (wages less than 1.5 times the minimum wage), while their employers are eligible for a subsidy equal to 10 per cent of the young person's wages. However, the take-up of the employee subsidies was much higher than that of the employer component, as the employee and the employer had to claim independently.⁴⁴ The introduction of the programme led to an increase in youth participation rates and a 6 per cent increase in (formal) employment rates, with no consequent changes in wages. The authors also provide evidence that the positive response was not due to displacement of older workers.

Several common findings are worth noting in regard to the programmes reviewed above. First, that employer take-up of the subsidies was generally low,⁴⁵ which could have been due to insufficient information being available to employers, or high administration costs. Second, much of the impact of these programmes comes from labour supply reactions, and points to the fact that eligibility for a subsidy may influence youth's job-search behaviour. Third, it would be important to disentangle the conditions under which these vouchers change employers' perceptions of those eligible for subsidy. Fourth, the design of existing hiring subsidy programmes in developing countries, possibly due to the lack of both statistical and soft profiling by PES staff, is likely to lead to large deadweight losses. This points to a fundamental design issue for hiring subsidies: how to design programmes that are sufficiently simple (in terms of their administrative burden) to encourage employers to recruit young persons into registered jobs, but where the targeting is sufficiently sophisticated to avoid large deadweight costs.

4.4 Wage subsidies in two-tier labour markets

In labour markets with strong employment protection legislation for jobs within the primary labour market (those with permanent labour contracts) and relatively unstable, precarious jobs in the secondary labour market (those with fixed-term labour contracts), the aim of hiring subsidies for permanent contracts is to improve young persons' employment quality and their overall employment outcomes.

⁴² This was measured immediately after the subsidy period ran out. Note that the effect of the subsidy seemed to fluctuate over the follow-up period, which is probably due to the seasonal variation in labour demand.

⁴³ This is probably due to the fact that at the time, a large number of employers operated in the informal sector, and registration of the worker was likely seen as too costly (as it might have led to legal action against the firm by the government).

⁴⁴ In three-quarters of the employment relationships where subsidies were claimed, only the employee received the subsidy.

⁴⁵ However, it is difficult to judge, based purely on pilot schemes, whether a national roll-out coupled with publicity campaigns would lead to higher take-up rates.

In France, a hiring subsidy for recruiting young (below the age of 22), low-skilled persons on open-ended contracts was initiated in 2002. Employers received the subsidy for three years, corresponding to roughly 14 per cent of total labour costs for a minimum wage worker for the first two years, and to 7 per cent in the third year. However, the employer was not allowed to dismiss the young person during the first three years of the employment relationship. Roger and Zamora (2011) evaluate this policy by comparing eligible young persons' probability of being employed with a permanent contract to similar ineligible youths' outcomes at the time of the introduction of the policy, and find no discernible impacts. They point out that only about half of all eligible firms claimed the subsidy, which might be an indication that the protection awarded to workers by the policy was potentially too costly for firms.

In 1997, a reduction of payroll taxes for the hiring of young persons below the age of 30 on open-ended contracts was implemented in Spain. This hiring subsidy represented approximately a 7.5 per cent reduction in the labour costs and lasted for two years. During this period, employers were not allowed to dismiss the newly hired young workers. At the same time, dismissal costs for persons on permanent contracts were decreased by 25 per cent. Kugler et al. (2002) evaluated the impact of this change and found an increase in the probability of employment of young persons in permanent contracts of 2.5 per cent (for young men) and 6 per cent (for women), which was attributable to increased transitions from non-employment and temporary contracts to permanent contracts. Elias (2014) found slightly smaller positive impacts, as he estimates that about 46 per cent of appointments under the new programme to be due to deadweight effects. However, he presents evidence to show that there was no displacement of older workers.

A comparison of the results of these studies suggests that (a) hiring subsidies for permanent contracts can only be successful if they are coupled with reductions in dismissal costs, and (b) employers need to be offered substantial wage cost reductions to promote the employment of low-skilled youth on permanent contracts.

4.5 Wage subsidy programmes with on-the-job training

While there are numerous programmes around the world that either subsidize the employment of young persons in the form of apprenticeships or combine formal classroom training with work experience programmes, the number of wage subsidy programmes with a substantial on-the-job training element is limited.

The primary example of this type of programme was the wage subsidy option within the UK New Deal. For youth (aged 18 to 24) who had been unemployed for at least six months, following a mandatory four-month job-search programme, this programme guaranteed a flat-rate wage subsidy for employers over a 26-week period (equivalent to about 40 per cent of starting wages) and employers were obliged to offer the young person training for at least one day per week (for which employers received a flat-rate reimbursement). Blundell et al. (2004) examined the short-term employment prospects of youth who had taken up the wage subsidy option, and found that it led to a 20 per cent increase in outflows to jobs, and they estimate that only about one-fifth of this impact was due to the job-search programme element of the policy. Dorsett (2006) examined the medium-term effects of the wage subsidy option and found that, 18 months after the start of the programme, participants were about 20 per cent less likely to be unemployed than non-participants, indicating that employers had retained previously subsidized workers on completion of the programme.

The use of subsidized on-the-job training for youth has a long tradition in France where, due to a two-tiered apprenticeship system, a large number of firms are certified as training providers. A series of alternative programmes since the middle of the 1980s all

had a similar structure: youth were hired on a fixed-term employment contract (for at least six months and up to two years) during which firms were obliged to provide training for at least 15–20 per cent of the young person's time and, in return, employers were exempted from payroll taxes and training costs were reimbursed by the state. Brodaty (2007) evaluated a version of this programme from the end of the 1980s, that provided shorter (six-month) contracts, and found a significant positive impact (20 per cent) on the re-employment probability of participants in the short term, especially for those who had previous labour market experience (and hence were probably more employable in any event). Looking at a programme that entailed longer contracts (of at least one year's duration) and estimating the impact up to five years after participation, Pessoa e Costa and Robin (2009) also found a small increase (of 5 per cent) in both employment probability and wages.

These studies suggest that a combination of on-the-job training and subsidized work is particularly effective for re-integrating low-skilled, disadvantaged youth and can lead to long-lasting benefits.

2. Conclusions and implications for policy

The evaluation studies reviewed here, although varied and not fully conclusive in terms of the effectiveness of wage subsidy programmes for promoting youth employment, enable us to determine a number of policy implications. We will discuss these separately by programme type and – where possible – distinguish between results from high-income and middle-income countries.

First, it seems that in high-income countries modest payroll tax cuts broadly targeted *at* both incumbent young workers and new hires leads to negligible employment gains and are cost ineffective. Hiring subsidies in the form of payroll tax cuts can, on the other hand, lead to an increase in the employment probability of young persons. This is particularly evident in labour markets with less generous welfare systems, where the labour supply of young persons is more responsive to potential wage increases. The relatively limited effects of payroll tax reductions on the employment probability of young persons is partially due to the fact that these policies entail only a small decrease in employers' total wage costs. The evidence reviewed also implies that at least one-quarter of the employment impact of broad payroll tax cuts for hiring youth comes at the expense of employment losses of slightly older workers. In middle-income countries with a relatively large formal sector, broadly targeted payroll cuts for youth hires lead to modest (formal) employment gains, given that there is sufficient administrative capacity to ensure that subsidies are only granted for newly recruited young workers. However, there is little evidence about these policies from countries with a large informal sector, though it can be gleaned from the evaluation studies that payroll tax reductions are unlikely to be sufficiently generous to induce employers to formally register workers, and therefore may have limited effects.

Second, for low-skilled youth with longer unemployment spells, heavily subsidized jobs (in which up to half of the labour costs are covered) with long subsidy periods (of up to two years) have often been conducive to promoting longer term employment gains in Europe. Human capital formation gained through learning-by-doing during these longer subsidized employment spells can enable these youth to integrate into unsubsidized employment in the long run. There are, however, a few caveats to this positive assessment. First, it is essential that these programmes are carefully targeted since, under selection procedures currently in place in European public employment services, more than half of the available subsidies go to individuals who would have been likely to find a job in the absence of the subsidy. Second, these programmes are particularly effective if they are coupled with non-dismissal clauses after the subsidy is exhausted, though the enforcement of these rules requires substantial administrative capacity on the part of the funding agency.

In middle-income countries, wage subsidies in the form of direct payments to firms targeting disadvantaged youth appear to lead to sizeable employment gains in the short run. These gains are particularly pronounced in regions where employment opportunities are scarce (outside large cities) – especially for higher educated youth. There are, however, several issues that influence these positive findings:

- public employment services frequently lack efficient targeting mechanisms and, as a consequence, these programmes suffer from large deadweight losses;
- only larger firms (which are uncommon in these countries) have sufficient administrative capacity to claim these subsidies, and it is difficult to design policies that favour formal employment but that will achieve a reasonable rate of take-up;
- these programmes tend to favour those youth who have better labour market prospects – those who live in areas with a larger formal employment sector (or have

family members employed in the formal sector) and hence might not be effective for disadvantaged or female jobseekers;

- the impact on employment outcomes was largely due to changes in youths' job-search behaviour – as most of the evidence comes from pilot schemes it is questionable whether the same effect would appear in the case of national roll-out
- evidence on the medium- and long-term effect of these programmes is limited, and shows that employment gains evaporate rather swiftly after the end of the subsidy period.

Third, in European labour markets that are characterized by high minimum wages and very strict employment protection for permanent contracts, even generous subsidies for hiring disadvantaged youth on permanent contracts have not proved successful. It seems that hiring subsidies can positively affect the employment probability of youth on permanent contracts only if they are coupled with reductions in dismissal costs.

Fourth, the evidence on whether short-term subsidized jobs (work trials) can lead to an increase in re-integration of unemployed youth in the longer term is scarce and mixed. It is clear that these programmes can only serve to provide evidence of young persons' productivity and hence be a stepping-stone for less disadvantaged young people. Furthermore, only those work experience programmes where placements form an integral part of the workforce contribute to increasing the post-programme employment opportunities of participants.

Fifth, those short-term programmes that incorporate on-the-job training have been proven to be conducive to improved employment prospects in the medium run, although their effect is typically more pronounced for more highly skilled youth. However, if these programmes are coupled with job-search training and mentoring, they do lead to employment gains for disadvantaged young persons.

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Appendix I. Summary table of wage subsidy measures

Region	Country	Programme	Date	Target group	(Max.) amount	(Max.) duration (months)	Conditionality: worker (W), employer (E)	Impact	Reference
Hiring subsidies in developing countries									
LAC	Argentina	Proempleo, separate estimates for young people	1999–2000	Disadvantaged (low-wage earners), no age limit	100 pesos for younger workers (200 pesos = min. wage)	18	–	Significant positive (6 pp) impact on employment in the private sector six months after the subsidy ended. Not significant after 12 months. No impact on earnings	Galasso et al., 2004
LAC	Brazil	Lei do Aprendiz	2000–	14–17-year-olds (expanded to 24-year-olds in 2005)	6–6.5% of gross wage (firms pay 2% instead of 8 or 8.5% payroll tax)	24	W must participate in formal training or education programme. E can only terminate the fixed-term contract before its end in exceptional cases	Higher probability of employment in a non-temporary job in the short term (two to three years later) and medium term (four to five years). Lower job turnover rate, large and increasing positive impact on wages ^a	Conseil et al., 2013
LAC	Chile	Subsidio al Empleo Joven (SEJ)	2009–	18–24-year-olds, disadvantaged (poorest 40%)	20 (for the employees), 10 (for the employers)	Until worker turns 25	E: social security contribution payments must be up-to-date	Significant positive employment effect (5 pp) in the first six months; decreases to 1.3 pp (3%) after 18 months. Participation rate increased by 4–5 pp (9%) for eligible population during the first year; impact decreases to 2 pp (4%) in the second year. No impact on wages ^b	Bravo and Rau, 2015
MENA	Jordan	Jordan New Opportunities for Women (NOW)	2010–2011	Female new graduates (typically 20–22)	Equal to minimum wage (150 JD = US\$210)	6	–	Significant positive effect (40 pp) on employment after six months. Impact no longer significant four months after expiry of the subsidy, except outside the capital, but impact magnitude drops considerably ^c	Groh et al., 2012
MENA	Tunisia	Stage d'Initiation à la Vie Professionnelle (SIVP)	1987–2010	New graduates, unemployed for at least three months	100–250 TND. Exact amount depends on degree subject and type, average around €60 (approx. one-third)	12	E could only continue to receive new subsidies if they had recruited at least 25% of all their subsidized graduates	8 pp lower risk of non-employment; 9.8 pp lower probability of unemployment; higher chance of working for a private company and lower chance of being on an open-ended contract (conditional on employment), no effect on earnings	Broecke, 2013

^a Upper and lower quotas for firms concerning number of apprentices (not really enforced in practice).

^b The pension reform also included a 50 per cent bonus payment to employees' pension contributions for low wage earners between the ages of 18 and 35, for 24 months.

^c Pilot, randomized-controlled trial.

Region/Country	Programme	Date	Target group	(Max.) amount	(Max.) duration (months)	Conditionality: worker (W), employer (E)	Impact	Reference
SSA	Youth Wage Subsidies for South Africa	2010	20–24-year-olds	of salary) R5,000 for six months (R833 max.; about 40% of median wage)	6	–	Significant positive effect (7.4 pp) on employment chances after one year, also after two years ^d	Levinsohn et al., 2014
Wage subsidy programmes with on-the-job training								
ECA	Contrat de Qualification	1984–2003	16–25-year-olds, disadvantaged (low-educated)	40–60% of minimum wages	6–24	W had to participate in formal training for at least 25% of their working time	Small positive effect on employment probability in medium term	Pessoa e Costa and Robin, 2009
ECA	New Deal for Young People	1998–2002	18–24-year-olds, disadvantaged (claiming Jobseeker's Allowance for at least six months)	£60/week + £750 one-time payment if training was successful (about 40% of typical starting wage)	6	W had to participate in on-the-job training for at least one day per week	The wage subsidy option was superior to all other options: negative relative impacts (8–17 pp) on chance of being unemployed (about two years later) ^e	Dorsett, 2006
Payroll tax reductions								
ECA	Payroll tax credit in Spain for new hires younger than 30 or older than 45	1997–2001	Under 30 (also over 45 or long-term unemployed). Only for permanent contracts	40% cut in payroll taxes	24	E: subsidized worker cannot have been a former employee of the firm in the previous 24 months. After May 1999, firms who wrongfully dismissed (other) subsidized workers are ineligible to hire again with a tax credit for one year	Significant positive effect: employment at age 30 increased by 2.42%. No impact on wages (Elias, 2014). Significant positive effect: permanent employment probability increased by 0.014 (i.e. 2.5%) for young men relative to men aged between 30 and 35 (Kugler et al., 2002) ^f	Elias, 2014; Kugler et al., 2002
ECA	Payroll tax cuts for youth	2007–2008	18–25-year-olds, all workers (including incumbents)	11% of gross wage (tax reduced from 32.4 to 21.3%)	Until worker turns 25	–	Significant 1.3–1.4 pp (2.7%) increase in employment in 2007, 0.7 pp (1.4%) increase in 2008 ^g	Egebank and Kaunitz, 2014
ECA	Payroll tax cuts for youth	2009–	Under 26, all workers (including)	6% of gross wage (tax reduced from 21.3 to 15.5%)	Until worker turns 26	–	No impacts/cannot be identified due to confounders	Egebank and Kaunitz, 2014

^d Pilot, randomized-controlled trial.

^e Mandatory programme consisting of three stages: (1) gateway: intensive job-search assistance (four months); (2) options: one of the options being the wage subsidy; (3) follow-up stage: counselling.

^f The programme also included a 25 per cent reduction in dismissal costs.

^g This was not a cost-effective measure, based on cost-benefit analysis.

Region	Country	Programme	Date	Target group	(Max.) amount	(Max.) duration (months)	Conditionality: worker (W), employer (E)	Impact	Reference
ECA	Turkey	Employment Package of 2008	2008–	incumbents) 18–30-year-old men (also women regardless of age)	14.5–20% (100% of payroll tax) in first year, gradually decreasing in every year, 0% in sixth year	60	E: any subsidized hire must raise employment at the firm	Small positive effect (1–2 pp.) on male employment, negative effect on male unemployment. No effect on earnings (Barza, 2011); weak positive effect on transition to employment for men (Ayhan, 2013); no significant effect on employment for young men, weak positive effect on employment for young women (Balkan et al 2014)	Barza, 2011; Ayhan, 2013; Balkan et al. 2014
NA	Canada	Youth Hires	1999–	18–24-year-olds (low/middle wage-earning youth)	About 3.5% of wages for low/middle wage-earning youth	24 (two one-off reimbursements)	E has to increase either its workforce by hiring eligible workers, or raise wages of existing eligible workers	Small positive effect (for men): employment increased by 1–4 pp/2.5 weeks per year. Not significant for women. No impact on wages or hours worked ^h	Webb et al., 2012
Targeted direct subsidies for disadvantaged jobseekers in Europe									
ECA	Austria	Eingliederungsbeihilfe	2000s	Disadvantaged (already, or at high risk of becoming, long-term unemployed), no age limits	50–66.7% of wage costs + 50% of non-wage costs	24 (36 for disabled). Average duration is 200–300 days	E obliged to participate in consultation sessions about the worker with the PES	After five years: among 15–24-year-olds, unsubsidized employment increased by 38 days (4%) for women and by 40 days (4.1%) for men; unemployment dropped by 62 (35.6%) and 49 (29.3%) days, respectively ⁱ	Eppel and Mahringer 2013
ECA	Belgium	ACTIVA	2002–	Long-term unemployed (no age limit)	Reduction in employers' social security contributions €1,000/quarter, direct wage subsidy of €500/month	16 months	E: no layoffs in firm six months prior to hiring	20 pp lower probability of returning to unemployment than control group for young persons (below age 30)	ONEM 2013
ECA	Belgium	Allocation Garanti de Minimum	1997–	Low wage earners working in part-time jobs (no age limit)	Wage top-up, maximum €157/month	No limits	W must seek for full-time employment	For long-term unemployed women: significant positive effect for transitions to full-time jobs ^j	Cockx, Goebel, and Robin 2010
ECA	Germany	Wage subsidy offered	1999–	Long-term	50% of wage	12	E must prolong the contract for	Significant positive (10–20 pp) effects on	Caliendo et

^h The programme entailed a refund of the excess of social security contributions paid by firms (provided that the total payroll increased after 1998).

ⁱ Weaker impacts were observed for youth compared with other age groups. Significant deadweight effects (of about 60 per cent) were estimated.

^j This is a re-employment bonus type programme.

Region	Country	Programme	Date	Target group	(Max.) amount	(Max.) duration (months)	Conditionality: worker (W), employer (E)	Impact	Reference
		under SGB III (WS), JUMP	2004	unemployed (no age limit)			at least as long as the duration of the subsidy; no layoffs in the previous four years	unsubsidized employment (30–60 months after start of subsidy)	al., 2011
ECA	Germany	Wage subsidy offered under JUMP (JWS)	1999–2004	Under 25	60% of wage (one-year programme), or 40% of wage (two-year programme)	12 or 24	E must prolong the contract for at least half as long as the duration of the subsidy	Significant positive (10–20 pp) monthly effects on employment chances (30–60 months after start of subsidy)	Caliendo et al., 2011
ECA	Hungary	Wage subsidy for the long-term unemployed	1990s	Long-term unemployed (no age limit)	50% of gross wage	12	E must prolong the contract for at least as long as the duration of the subsidy; no layoffs in the previous six months in the same line of work	For participants under 30: small positive impact (weaker compared with other age groups) on employment, regardless of type of job, one year after end of subsidy. No significant impact on unsubsidized employment	O’Leary, 1998
ECA	Serbia	Job subsidies in the Youth Employment and Migration (YEM) joint programme	2010–12	15–29-year-olds, disadvantaged (poorly educated, long-term unemployed or hard-to-place)	100% of contributions	24 (or 36 for youth with no prior work experience)	E must extend the contract for an additional 24 months (36 for youth with no prior work experience)	Large positive impact on employment (28 pp), negative impact on being unemployed (-24 pp) ^k	Arandarenko Nojkovic, and Vladisavljevic, 2014
Wage subsidies in two-tier labour markets									
ECA	France	Youth-in-Business Contract	2002–07	Under 22, disadvantaged (high school drop-outs)	Approximately 20% of minimum wage	24 (full amount) 12 (half amount)	E: prohibition on dismissal of the subsidized worker within 36 months	No significant effect on transitions to permanent employment, intention-to-treat (ITT) estimates relative to youths with slightly higher level schooling ^l	Roger and Zamora, 2011
ECA	Italy	Contratto di Formazione e Lavoro (CFL)	1984–1995	15–29-year-olds	39.2% subsidy of labour cost (on average)	24	W had to participate in on-the-job training. E: only firms which had not fired a substantial number of workers in the previous year could apply. From 1991, at least 50% of contracts had to be extended	Firms participating in the programme increased employment of eligible workers by almost 5% (average treatment effect), although the overall impact in the provinces was small, producing about a 1% employment increase (= ITT), as only one-fifth of firms participated	Tattara and Valentini, 2009
ECA	Italy	Conversion subsidy declared by the 5	2012–13	Men under 29 (women)	€12,000 per conversion (one-off payment)	one-off payment	E prohibition on laying off the worker during the first six	Subsidy increased the probability of transformation by 83% ^m	Ciani and de Blasio, 2015

^k The treatment group’s “job subsidy” also included self-employment subsidies. When measures are separately evaluated, the sample sizes are very small.

^l The programme only applied to permanent contracts.

^m The programme converted ongoing fixed-term contracts for eligible workers into permanent ones.

Region	Country	Programme	Date	Target group	(Max.) amount	(Max.) duration (months)	Conditionality: worker (W), employer (E)	Impact	Reference
		October 2012 Ministry decree		regardless of age)	time payment)		months; the new permanent contract had to increase the existing workforce of the firm		
Work experience programmes									
AO	Australia	Special Youth Employment Training Programme (SYETP)	1976–1985	15–24-year-olds, disadvantaged (unemployed for at least four months)	About half of average teenage wages	17 weeks	E had to agree to a “training plan” with the PES for the individual worker; in practice, not taken very seriously	Small positive effect one year after enrolment ⁿ	Richardson, 1998
ECA	Sweden	Swedish Youth Practice (Ungdomsprakt)	1992–95	18–24-year-olds, disadvantaged (unemployed for at least four months; not enforced in practice)	Worker received SEK 338 per day (about US\$36.5), employer paid only a small proportion	6	W: participation in training, counselling, actively seeking permanent employment (not enforced in practice)	Negative effects on employment and earnings one year after start of programme, no effect after two years (Larsson, 2003); insignificant impact for men based on classic matching estimators, significant negative effect on employment (men) based on the matching and instrumental variables method	Larsson, 2003; Costa Dias et al., 2013
NA	USA	Targeted Jobs Tax Credit (TJTC)	1978–94	18–24-year-olds (35 for veterans), disadvantaged (e.g. ex-offenders, disabled, etc.)	50% of wages in the first 12 months (max. US\$6,000), 25% for the next 12 months (max. US\$6,000)	24 (12 + 12)	–	Eligibility had negative effect on employment and wages (stigma effect). Having a voucher had positive effect for employment, negative for wages (but results are possibly biased due to skimming). Being certified had a large positive earning effect (but caused displacement of uncertified workers) ^o	Hollenbeck and Willke, 1991

Note: pp = percentage points. Region codes: AO = Australia and Oceania; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MENA: Middle East and North Africa; NA = North America; SSA = Sub-Saharan Africa

ⁿ The training element did not play a significant role in the programme.

^o Due to high administration costs, it was predominantly large firms that took up the subsidy.

Appendix II. Measures analysed in the report: Search strategy

In our research on employment subsidies targeting youth, we relied on two main sources: inventories that cover active labour market programmes and enable users to analyse and process data easily (i.e. which include numerically encoded programme features that can be analysed in a spreadsheet), and our own collection of impact evaluation papers on wage subsidy measures. In the following two subsections, we describe the process of collecting information on relevant programmes. We will also point out the limitations of the inventories in compiling a comprehensive and detailed analysis of wage subsidy programmes.

II.1 Wage subsidies in the Youth employment inventory and the ILO/World Bank Inventory of policy responses to the global financial and economic crisis of 2008

The *Youth employment inventory* (YEI)⁶¹ is maintained by a partnership between the German Ministry for Economic Cooperation and Development (BMZ), the Inter-American Development Bank (IDB), the International Labour Organization (ILO), the World Bank (WB) and the Youth Employment Network (YEN). It contains more than 400 measures that aim to promote employment opportunities for young people. The measures covered can be browsed by country, category of intervention, age group targeted, type of evaluation, project status or target group and data on selected measures can be exported to spreadsheet files. An overview of the measures covered by the YEI, as well as a detailed description of how it was compiled, can be found in Betcherman et al. (2007).

The *ILO/World Bank Inventory of policy responses to the global financial and economic crisis of 2008* (ILO/WB Inventory)⁶² is a database that covers employment policies by country. While the YEI focuses on youth employment programmes, measures in the ILO/WB Inventory are not limited to youth; instead, it only covers policy measures over a two-year period (2008–10). Policy responses to the 2008 crisis include macroeconomic policies, measures to increase labour demand, active labour market policies, unemployment benefits, social protection measures, social dialogue and labour standards; under each of these categories, measures are classified into further subcategories. Similar to the YEI, data can be filtered and exported into a spreadsheet, although there are fewer coded categories. A joint synthesis report on the policies covered by the Inventory is available (ILO and World Bank, 2012).

From the YEI, we selected measures that belonged to the “Subsidized Employment” main category, and also where the project intervention area was labelled as “Subsidized Employment – Employment in a wage subsidy program”. This yielded a total of 93 measures (table II.1). However, not all of these measures proved to be “classic” wage subsidies, as some of them would more accurately be described as training programmes or public work schemes based on our definition of wage subsidies (see section 1.1). If we selected only those measures which were labelled as “Employment in a wage subsidy program” and ignored those which had “Subsidized employment” as the main category,

⁶¹ Available at: <http://www.youth-employment-inventory.org> [12 Nov. 2015].

⁶² Available at: [http://www.ilo.org/dyn/crisis-inventory/f?p=17030:2:364284372402963::: \[12 Nov. 2015\].](http://www.ilo.org/dyn/crisis-inventory/f?p=17030:2:364284372402963:::)

the number of measures dropped to 48, but most of the remaining measures were closer to our understanding of wage subsidies (the number of remaining measures by region is shown in parentheses in table II.1).

Although the database contains detailed and easily accessible information on some of the programme features (for example, each type of measure covered by the programme is numerically coded), certain design elements, such as conditionality of the wage subsidy or the amount of the subsidy (in proportion to the wage), are not, or not always, coded. In addition, some of the measures are in fact complex programmes that also include other active labour market programme elements, most commonly workplace or classroom training, and it was not always clear to which element the coded characteristics (e.g. duration) referred. For these reasons, there is limited opportunity for a detailed analysis of the measures in the YEI by design element.

From the WB/ILO Inventory, we first filtered measures that had the target group of “Youth” and were classified in the category “Measures to increase labour demand”. This yielded a total of 42 measures. Similar to the YEI, a relatively large proportion of these measures related to less relevant policies, such as public works programmes. Hence, we applied a second stage of filtering to these measures as well, according to stricter criteria: we only included measures in the subcategories “Lowering non-wage labour cost”, “Subsidies or tax exonerations for hiring individuals from certain groups” and “Subsidies for job creation that are targeted on newly created jobs”. After this second filtering stage, only 20 measures were retained (the number of measures obtained by the “strict” filtering method is shown in parentheses in the third and fourth columns of table II.1).

To complement the data on our findings from the two inventories above, we have also checked the comprehensive review (Moore et al. 2014) on wage subsidies by the European Employment Policy Observatory (EEPO) as well as its country reports that were prepared as background studies for the review. The relevancy, the richness and the accuracy of the information in the background studies varied by country, and the papers referenced therein were not always accessible. Nevertheless, the reports proved to be a useful source on the details of some of the measures, and we were able to supplement our search with information on measures covered by these reports.

II.2 Impact evaluation studies on wage subsidy measures: Search strategy

To identify relevant impact evaluations on youth hiring subsidy measures, we relied on a search plan consisting of several steps. First, we explored the studies summarized or covered in existing systematic reviews and meta-analyses on (youth) active labour market measures and employment incentives.⁶³ Selection was based on two criteria:

- The measure evaluated was a youth wage subsidy or a payroll cut measure targeting youth. The definition of “youth” covered persons in the labour force under the age of 30 or, in some cases, recent graduates. We also selected studies on measures that did not specifically target youth but presented separate estimates for youth in the analysis of the impact of the programme. As far as each measure was concerned, we interpreted the definition of “wage subsidy” in a broad way: we included measures that contained other active labour market policy elements, such as on-the-job training, but only if the dominant element of the programme was the wage subsidy. One-off subsidies to employers that provided incentives for the conversion of temporary contracts into permanent ones were also included. We did *not*, however, include direct job creation programmes and subsidized employment on the secondary labour market (prime examples would be “public works” programmes in Central and Eastern European countries and “One-Euro Jobs” in Germany), as the

⁶³ The resultant list of programmes and their effects are summarized in Appendix I.

primary goal of these measures is usually not the reintegration of participants into the primary labour market but they are instead used as temporary relief measures or tests of willingness to work.

- The quality of the paper – we did not limit the scope of our search to studies published in peer-reviewed journals, but also included working papers and government reports to ensure that a sufficient number of studies were considered in our research. We did, however, pre-screen the studies based on the methodology they used to identify impact: we excluded process evaluations and descriptive studies (“before–after” type evaluations) that did not identify programme impact by experimental or quasi-experimental methods (i.e. did not rely on counterfactual estimations).

The impact evaluation studies identified through the process described above were complemented with further relevant studies that were referenced in these papers. A substantial number of additional papers were found on search engines (e.g. Google Scholar) using specific keywords (such as “wage subsidy” + “youth” + “evaluation”). We also checked the YEI and the ILO/World Bank Inventory, as they contain references to impact evaluations of some of the measures covered. For these additional studies, discovered through the snowball search, the search engines and by browsing the inventories, we applied the same inclusion criteria described above.

As mentioned in the previous subsection, the two inventories did not allow us to analyse the measures by programme features. In order to undertake this analysis, we coded the following aspects of each measure that we judged to be of relevance in the potential success of the subsidy:

- calendar time of implementation and scope of the programme (namely, whether it was a pilot, a regional or a nationwide programme, and whether it covered only new hires or incumbent workers as well);
- whether it was a youth programme or open to adults as well but the evaluation paper presented separate estimates for the impacts on youth;
- the specification of the target group (age range, whether the measure targeted vulnerable groups or not and other eligibility criteria, and whether the group of potential employers was limited);
- the way the subsidy was paid (through social security contributions, the tax system or through direct reimbursement);
- whether the subsidy was paid to the employer or the worker;
- the amount of the subsidy (percentage if it was proportional to the wages; in the case of lump-sum payments, the exact amount and a rough estimate on how it related to average or minimum wages whenever this information was available);
- the (maximum) duration of the subsidy in months;
- whether the subsidy placed any behavioural conditions on either the worker or the employer, and any sanctions in case of non-compliance with these conditions;
- whether the subsidy was combined with additional active labour market policy elements (e.g. training);
- any information on the potential administration costs and take-up rate of the subsidy (if available).

We also took note of specific features of the impact evaluation design on which each study relied, such as type of data used, identification method, comparison group and the estimated results of the evaluation. We made a distinction between estimated effects on subsidized and unsubsidized employment and also took note of any subgroup effects.

The number of evaluation studies found and coded totalled 31. Some of the papers evaluated the same measure, thus the number of measures was slightly lower (29).

Table II.1. Distribution of relevant measures by region, according to the YEI, the ILO/WB Inventory and authors' collection of impact evaluation studies

Region	Number of relevant measures in the YEI	Percentage of total	Number of relevant measures in the ILO/WB Inventory	Percentage of total	Number of relevant measures in authors' research	Percentage of total
Sub-Saharan Africa	18 (1)	19.4 (2.1)	12 (1)	28.6 (5.0)	1	3.2
East Asia and Pacific	1 (0)	1.1 (0.0)	3 (0)	7.1 (0.0)	0	0
Europe and Central Asia	16 (9)	17.2 (18.8)	6 (3)	14.3 (15.0)	2	6.5
Latin America and the Caribbean	5 (3)	5.4 (6.3)	2 (0)	4.8 (0.0)	3	9.7
Middle East and North Africa	14 (7)	15 (14.6)	4 (4)	9.5 (20.0)	2	6.5
OECD	39 (28)	41.9 (58.3)	15 (12)	35.7 (60.0)	23 31	74.2
Total	93 (48)	100 (100)	42 (20)	100 (100)	31	100

Note: The first number in columns two to five refers to the number and percentage of measures if filtering is based on "less strict" criteria, whereas the numbers in parentheses reflect the number and percentage if only the measures based on the "strict" criteria are considered (as described in section II.1).

Employment Working Papers

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