Connecting People with Jobs

Impact Evaluation of Vocational Training and Employment Subsidies for the Unemployed in Lithuania



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Foreword

Giving people better opportunities to participate in the labour market is a key policy objective in all OECD and EU countries. More and better employment increases disposable income, strengthens economic growth and improves well-being. Well-tailored labour market and social protection policies are a key factor in promoting the creation of high quality jobs and increasing activity rates. Such policies need to address pressing structural challenges, such as rapid population ageing and evolving skill needs, driven by digitalisation and the green transition. They should also foster social inclusion and mobilise all of society.

The COVID-19 pandemic has increased the need to promote more inclusive labour markets. Even before the crisis, employment rates differed markedly across population groups. Long-term unemployment, weak labour market attachment of some population groups and unstable or poor-quality employment reflect a range of barriers to working or moving up the jobs ladder. It will be a major challenge for policy makers in the coming years to lift these labour market obstacles, support labour mobility and make labour market participation accessible for all.

Another challenge that policy makers face is to make the most effective and efficient use of limited public funds. Knowing what policies work requires the collection of the necessary data, careful planning of impact evaluations and use of their results to guide policy making. Advances in data collection and storage and modern computer power means that countries now have a greater ability than ever before to conduct evaluations of their policies using high-quality administrative data and survey data. Expertise is needed to conduct robust and credible policy evaluation but also effective communication of their results to inform policy makers.

The OECD is carrying out a set of reviews of labour market and social protection policies to encourage greater labour market participation and promote better employment opportunities, with a special focus on the most disadvantaged who face the greatest barriers to finding quality jobs. This includes a series of country studies, *Connecting People with Jobs*, which provide an assessment of how well active labour market policies (ALMPs) help all groups to move into productive and rewarding jobs, and policy recommendations for improving their effectiveness.

This report is undertaken in the framework of a bigger project of the OECD with the European Commission which aims to raise the quality of the data collected and their use in the evaluation of the outcomes and effectiveness of labour market programmes, so that countries can better evaluate and design policies to benefit their citizens. In particular, this review uses rich administrative data from different registers in Lithuania to evaluate the impact of two types of labour market measures: employment subsidies and vocational training for unemployed people. The analysis looks at outcomes beyond the probability of employment and examines how the selected ALMPs affect different population groups. Finally, the report makes recommendations for improving the effectiveness of Lithuania's ALMPs and strengthening the capacity of the Lithuanian authorities in conducting labour market programme impact evaluations.

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Table of contents

Foreword 3

Acknowledgements 4

Executive summary 9

1 Assessment and recommendations 11
1.1. Lithuania should continue to strengthen its system of active labour market policies 12
1.2. Evidence-informed policy making is crucial to improve the system of ALMPs 13
1.3. Vocational training and employment subsidies help to connect people with jobs, but could be fine-tuned further 16

2 Recent trends in the Lithuanian labour market and active labour market policies 24
2.1. Introduction 25
2.2. Labour market situation and trends in Lithuania 25
2.3. The system of active labour market policies in Lithuania 32
References 39
Note 41

3 Counterfactual impact evaluation approach and outcomes examined 42
3.1. Introduction 43
3.2. Vocational training and employment subsidy programmes are two of the main ALMPs in Lithuania 44
3.3. Counsellors' discretion plays a role in targeting ALMPs 46
3.4. People closer to the labour market are more likely to get support, particularly vocational training 48
3.5. The rich administrative data provide a detailed information on unemployed individuals and their labour market outcomes 51
3.6. The impact evaluation methodology accounts for counterfactual outcomes 53
3.7. A rich set of labour market outcomes are evaluated 56
3.8. Looking beyond employment prospects to analyse occupational mobility 57
References 58
Notes 60

4 Evaluation of vocational training provided by the Lithuanian Public Employment Service 61
4.1. Introduction 62
4.2. The vocational training programme has a positive effect on most outcomes examined 62

4.3. The impacts vary across sub-groups of unemployed people and depend on characteristics of training provided 67
References 75
Annex 4.A. Additional figures 77
Notes 85

5 Evaluation of employment subsidy programmes administered by the Lithuanian Public Employment Service 86
5.1. Introduction 87
5.2. Employment subsidies have positive effects on most outcomes examined 87
5.3. The effects of employment subsidies vary across sub-groups of unemployed people 92
5.4. Any direct displacement effects of the subsidised employment programme appear to be small 97
References 101
Annex 5.A. Additional figures 103
Notes 106

FIGURES

Figure 2.1. The employment rate suffered less in Lithuania than the OECD average during the COVID-19 pandemic, and the unemployment rate increased partly due to the growing labour force participation rate 26
Figure 2.2. Wages have increased fast in Lithuania, exceeding labour productivity 28
Figure 2.3. Lithuania is forecast to lose close to one-quarter of its population by 2050 29
Figure 2.4. The employment gap between tertiary and secondary education in Lithuania is one of the widest in OECD 30
Figure 2.5. Geographic distance is a severe barrier to employment for the out-of-work people in Lithuania 31
Figure 2.6. Structural unemployment in Lithuania is potentially higher than the EU average 31
Figure 2.7. A very high share of jobseekers contact the public employment service in Lithuania 33
Figure 2.8. Lithuania invests little in active labour market policies relative to other OECD countries 34
Figure 3.1 Groups such as younger jobseekers and men are disproportionally included in vocational training or employment subsidies 49
Figure 3.2. Incidence of vocational training with tripartite agreement and employment subsidies varies considerably across firm size categories in Lithuania 50
Figure 3.3. Incidence of vocational training with tripartite agreement and employment subsidies varies slightly across firm age categories in Lithuania 51
Figure 3.4. Individuals who become re-employed after unemployment disproportionally enter lower-paid occupations 58
Figure 4.1. Vocational training in Lithuania has positive effects on employment probability and duration, but insignificant or slightly negative effects on occupational mobility 64
Figure 4.2. Vocational training has positive effects on cumulative earnings but insignificant effects on wages and cumulative earnings net of subsidies in the long term in Lithuania 65
Figure 4.3. Compared to other studies, the estimated effects of vocational training on employment probability are particularly positive in the short term in Lithuania 66
Figure 4.4. The positive employment effects of vocational training in Lithuania are particularly strong for certain sub-groups such as individuals over 50 years of age 69
Figure 4.5. The effects of vocational training on occupational mobility varies across age groups in Lithuania 71
Figure 4.6. Training has heterogeneous effects on employment probability across sub-groups in both Lithuania and other countries 73
Figure 5.1. Employment subsidies have positive effects on employment and, to a lesser extent, occupational mobility 89
Figure 5.2. Employment subsidies have positive effects on cumulative earnings, but insignificant effects on daily wages 90
Figure 5.3. Compared to other studies, the estimated effects of employment subsidies on employment probability are particularly positive in the short term in Lithuania 91

Figure 5.4. The positive employment effects of employment subsidies are particularly strong for certain sub-groups such women over 50 years of age 94
Figure 5.5. Employment subsidies help mitigate downward occupational mobility for men over 50 95
Figure 5.6. Employment subsidies have heterogeneous effects on employment probability across sub-groups in both Lithuania and other countries 97
Figure 5.7. Larger firms experience more replacement flows 100

Annex Figure 4.A.1. The effects of vocational training on employment probability, duration and occupational mobility varies by gender in Lithuania 77
Annex Figure 4.A.2. Men in Lithuania experience a greater boost to cumulative earnings and cumulative earnings net of subsidies 78
Annex Figure 4.A.3. Vocational training in Lithuania has a negative effect on the occupational mobility of certain sub-groups such as the long-term unemployed 79
Annex Figure 4.A.4. Groups experiencing boosts to employment probability from vocational training in Lithuania may also experience lower occupational mobility 80
Annex Figure 4.A.5. Vocational training in Lithuania has a positive effect on cumulative earnings for most sub-groups of unemployed individuals 81
Annex Figure 4.A.6. Young Lithuanian men entering vocational training through tripartite agreements have much lower occupational mobility than their peers 82
Annex Figure 4.A.7. Tripartite agreements in Lithuania are associated with particularly positive employment effects but have a negative effect on occupational mobility over some time horizons 83
Annex Figure 4.A.8. Tripartite agreements have particularly positive effects on cumulative earnings in Lithuania, but the effects on wages are unclear 84
Annex Figure 4.A.9. The presence of a tripartite agreement and having formal vocational training are both associated with more positive employment outcomes in Lithuania 85
Annex Figure 5.A.1. Estimated effects of employment subsidies on employment probability, employment duration and wages by gender 103
Annex Figure 5.A.2. Estimated effects of employment subsidies on occupational mobility, cumulative earnings and cumulative earnings net of subsidies by gender 104
Annex Figure 5.A.3. Estimated effects of employment subsidies on occupational mobility, by jobseeker characteristics 105
Annex Figure 5.A.4. Estimated effects of employment subsidies on earnings by jobseeker characteristics 106

TABLES

Table 3.1. Length of participation and costs vary across programmes in Lithuania 44
Table 3.2. Participation in vocational training and employment subsidy programmes in Lithuania varied considerably during the 2014-20 period 46
Table 3.3. Age criteria in Lithuania are most prominent for participation in vocational training and employment subsidy programmes 47
Table 3.4. Several data sources are used in the evaluation 52

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Executive summary

Remarkable resilience to the COVID-19 pandemic has characterised the Lithuanian labour market during the past years. The employment rate has returned close to its pre-pandemic level (72.4% among 15-64 year-olds) by 2021, 4.6 percentage points higher than the OECD average. Labour force participation in Lithuania has also increased faster than on average in the OECD during the last decade, and exceeded its pre-pandemic level in 2021. Despite these mostly positive developments, Lithuania is still facing labour market challenges. For example, the high labour force participation rate partly reflects an unemployment rate that was higher than the OECD average in 2021 (7.4% vs 6.3%). There are still wide employment gaps by educational attainment and municipalities, and a substantial gender wage gap. Furthermore, Lithuania's population shrank by 26% between 1990 and 2020 and is forecast to shrink further by 22% by 2050, while the working-age population is declining even faster. To build a more inclusive labour market and counteract the consequences of the population decline, Lithuania should strengthen employment support through active labour market policies (ALMPs). In addition to jobseekers registered with the Lithuanian Public Employment Service (LES), ALMPs should reach out to other groups, including: discouraged workers and other inactive people who would like and are able to work; people in low-paid jobs and at risk of job loss; and people at or beyond the pension age who would like to continue working.

The labour market reform of 2017, prepared closely with researchers, centralised and modernised the set-up of ALMP provision and aimed to strengthen its effectiveness. The new "social model" strengthened the role of the social partners in ALMP design, re-organised the LES, and revised the design of ALMPs. Despite the good intentions, spending on ALMPs was not scaled up following the reform. Lithuania spent only 0.21% of GDP on ALMPs in 2019 (versus 0.45% in the OECD on average) and only 1% of the labour force participated in ALMPs versus 5% in the OECD on average. At the same time, changes to ALMP composition following the reform have not materialised yet and the package of ALMPs provided does not respond well to the needs of jobseekers.

Lithuania's rich data which can be linked across registers can play an important role in improving the design and delivery of ALMPs while supporting the case for scaling up the budget of interventions that work. The availability of such data and the legal basis for ALMP monitoring and evaluation introduced with the social model offer a unique opportunity for Lithuania to implement more evidence-informed policy making. Additional efforts in this domain could help Lithuania improve the effectiveness and cost-effectiveness of its ALMPs as well as the tools, approaches and processes used by LES.

Lithuania needs to make further efforts to make ALMPs more effective, more available, and to target them more to people who need them the most. The key policy recommendations emerging from this review include:

- **Increase spending on ALMPs**, with an emphasis on programmes that support upskilling and reskilling and promote employment in the primary labour market, and ensure funding sustainability.
- **Expand the reach of ALMPs** by strengthening the LES engagement with employers and strengthening comprehensive support to people furthest from the labour market who need employment services corresponding to their individual needs combined with other services, such as social, health and education services.

- **Improve targeting** by assessing individual needs for services and by promoting the use of the new profiling tool and evaluating its impact. Ensure support is provided according to clients' needs and in line with the measures' effectiveness for different groups of jobseekers.
- **Expand upskilling and reskilling opportunities**, particularly for people who need them the most and for whom the social returns in terms of achieving a more inclusive labour market may be greatest, notably older jobseekers aged 50 and above, low-skilled persons and long-term unemployed.
- **Promote access to online training**, possibly in modular form to support upskilling and reskilling, enabling more varied training opportunities particularly for jobseekers in remote areas.
- **Ensure that the employment subsidies reach groups that are further from the labour market** such as older jobseekers and people living in non-urban areas.
- **Invest in evidence-informed policy making** by establishing a mechanism for counterfactual impact evaluations (CIE) of ALMPs, enriching the data available for carrying out CIEs and expanding research opportunities.
- **Complement CIEs of ALMPs with process evaluations** (assessing how implementation corresponds to strategies and policy design)**, as well as impact evaluations of the tools and approaches used by LES** and use the results of CIEs to conduct systematic cost-benefit analyses to demonstrate the cost-effectiveness of ALMPs and make the LES business case.
- **Modernise the IT infrastructure in the LES** to support data analytics and knowledge dissemination, such as data warehouse or data lake solutions linked to user-friendly business intelligence tools.

1 Assessment and recommendations

Lithuania has made good progress in improving its system of active labour market policies and modernising its public employment service. Vocational training and employment subsidies have high positive effects on participants' labour market outcomes, thus helping jobseekers to connect to good jobs. These measures have the potential to be even more effective by fine-tuning their targeting. Training could be targeted more to low-skilled and older jobseekers, and combined with job matching and placement services. Employment subsidies are particularly important for older jobseekers and those living in non-urban areas. Furthermore, the system of active labour market policies has the potential to support a stronger Lithuanian labour market, particularly if increased funding is tied to systematic and rigorous impact evaluations, which can facilitate evidence-informed policy making and effective policy design.

1.1. Lithuania should continue to strengthen its system of active labour market policies

1.1.1. Lithuania has seen strong employment growth over the past decade but challenges remain

Lithuania has seen positive labour markets trends over the past years. At 73% in 2019, the employment rate among 15-64 years old was higher than the OECD average of 68.7%. Moreover, employment has been resilient to the COVID-19 pandemic, with the employment rate dropping by only 1.4 percentage points in 2020, versus 2.5 percentage points for the OECD on average, and returning close to its pre-pandemic level by 2021 (at 72.4%). At the same time, the labour force participation rate increased faster in Lithuania than in the OECD on average and continued to grow in 2020, partly accounting for a relatively high unemployment rate (7.4% in 2021) and partly reflecting rising real wage levels.

One factor making the labour market tighter is the decreasing population of Lithuania. Between 1990 and 2020, Lithuania's population shrank by 26% and the working-age population (15-64 years old) shrank by 29%. Population decline is expected to continue. Lithuania is forecast to lose a higher share of its population by 2050 than any other OECD country (22% of its total population and 31% of its working-age population). To counteract population decline and the associated labour shortages, it is crucial that Lithuania provides employment support to people who are willing and able to work. This support should reach groups beyond jobseekers who are typically registered with the public employment service (PES) such as: discouraged workers and other inactive persons who would like and are able to work; people in low-paid jobs and at risk of job loss; and people at or beyond the retirement age who would like to continue working.

Despite the mostly positive trends in the Lithuanian labour market, disparities between population groups remain. While employment has increased strongly among persons with low education level, gaps with persons with higher and secondary education remain larger than in other OECD countries. There also large geographic disparities in the Lithuanian labour market, with the employment rate in Vilnius reaching 81.4% versus 50% in the remote and rural areas like Anykščiai, Ignalina, Lazdijai and Šakiai municipalities. In addition, geographic obstacles to jobs are particularly important in Lithuania, with about a quarter (23.5%) of 16-64 year-olds who were not in employment in 2019 living in a thinly populated area and in a household without a car.

1.1.2. A recent reform helped improve the institutional set-up and reach of active labour market policy provision

The labour market reform that was introduced in July 2017 in Lithuania centralised and modernised the organisational set-up of active labour market policy (ALMP) provision. The new social model introduced aimed to strengthen both labour market security and flexibility (flexicurity) and increase ALMP effectiveness and reach. The Lithuanian Employment Service (LES) which was established with the reform, has since experienced continuous and fundamental changes in its structure and management, its operating model, processes and infrastructure. The role of the social partners in ALMP design was strengthened with the inclusion of the relevant topics in the Tripartite Council discussions to provide strategic advice for the LES and the Ministry of Social Security and Labour. Such inclusion of the social partners has been assessed positively by all stakeholders involved in the provision of ALMPs.

Lithuania records one of the highest shares of jobseekers contacting the public employment service to find work across the OECD countries, reaching 86.4% in 2020. Even though the requirement to register with the LES to access health insurance may partly explain this high share, this is not the whole story, as similar requirements in other countries have not produced the same results. This high registration rate among jobseekers should be explored further by the LES to improve the reach of its services, especially among

those persons who are further from the labour market and are usually the ones who require more comprehensive and intensive support.

Lithuania has intensified its efforts to engage more with employers since the 2017 reform by providing dedicated employers' counsellors in the LES aiming to meet the employers' needs. These efforts should continue and be strengthened to attract more vacancies requiring higher qualifications that are currently quite limited.

1.1.3. Lithuania spends relatively little in ALMPs, which do not adequately respond to needs

Even though the 2017 reform aimed to make ALMPs more accessible, spending on ALMPs did not increase to support the change. Lithuania spent 0.21% of GDP on ALMPs in 2019, which is less than half of the average of OECD countries (0.45% of GDP). Allocations to the traditional package of ALMPs increased only marginally to reach 0.23% of GDP in 2020, despite the COVID-19 crisis. As a result of this low spending on ALMPs, less than 18% of registered jobseekers entered into ALMPs in 2019. This corresponds to only 1% of the labour force participating in ALMPs in Lithuania in 2019, versus 5% in the OECD on average. As such, although the LES has the potential to help many jobseekers due to the high share of registered jobseekers, this support remains very limited.

The 2017 reform introduced changes to ALMP provision by targeting them according to jobseekers needs and reshuffling the ALMP basket. On the one hand, more emphasis was placed on training measures, including their workplace components and new possibilities for more varied support were introduced. On the other hand, ALMPs that were considered as non-effective, such as public works and job rotation schemes were dropped. Nevertheless, these changes are not visible yet and the ALMP basket remains mainly focused on employment incentives (particularly through "social enterprises" that however do not currently support well the people furthest from the labour market) and less so on training measures and PES support.

ALMPs are primary funded through European Union (EU) sources in Lithuania while national funding is mainly used as co-financing. This financing model results in volatile resources, strongly dependent on EU funding cycles and less responsive to changes in labour market conditions and needs for ALMP support. Nevertheless, looking ahead, additional ALMP funding through EU sources such as the Resilience and Recovery Plan and ESF+ is likely to improve both ALMP spending and the composition of the measures provided to jobseekers, employers and people at risk of unemployment. To ensure these additional resources are used effectively, it is important that budget allocation is driven by evidence on what works.

1.2. Evidence-informed policy making is crucial to improve the system of ALMPs

1.2.1. Impact evaluations of ALMPs can help design more effective ALMPs and allocate funding more sustainably

Robust counterfactual impact evaluations (CIEs, which estimate the net effect of an intervention relative to the "counterfactual" situation of no intervention) of ALMPs can help secure sustainable and sufficient funding for such interventions which is better linked with labour market changes and emerging needs. On the one hand, the results of these evaluations can serve to adapt or terminate ineffective policies while providing evidence to boost those interventions that work, leading to more effective support for jobseekers and employers. On the other hand, such evaluations, when effectively communicated to the public and policy makers, can help the Ministry of Social Security and Labour and the LES attract the necessary resources for effective ALMPs and secure more substantive and sustainable funding.

Impact evaluations require rich data and thorough evaluation techniques, while their impact on actual policy making relies on making them an integral part of the system which designs and implements ALMPs. Evidence-informed policy making needs to be systematic and involve the whole cycle of designing, monitoring and evaluation, generating knowledge, disseminating knowledge, and adjusting policies based on evidence. But it also involves process evaluations which assess how implementation of interventions corresponds to design and strategies and which can help design more efficient policy implementation practices. Furthermore, impact evaluations should not only concern evaluations of ALMPs but also evaluations of the tools, processes and approaches used by the PES.

Lithuania has made progress in evidence-informed policy making. First, the introduction of the social model has created a strong legal basis for ALMP monitoring and evaluation and has assigned an important role to the LES for assessing the effectiveness of ALMPs. Second, Lithuania has improved its monitoring and evaluation framework by making use of more data from different registers and improving its IT infrastructure to support data management. Nevertheless, there is still progress to be made at least in four directions. First, it is important to move from a simple monitoring of ALMP outcome indicators to CIEs which are required to generate evidence on whether labour market outcomes are determined by ALMP participation. Second, it is necessary to ensure that aspects of job quality are included in the outcomes analysed. Third, further investments are needed to modernise the relevant IT systems in order to enable data extraction and sharing for research purposes. Finally, Lithuania could gain by communicating more effectively the results of the ALMP evaluations that are conducted to secure support and the necessary funding.

1.2.2. Robust evaluation techniques are required to establish whether ALMPs have the intended impact on participants

Evaluating the impact of an intervention requires comparing the labour market outcomes of participants with their theoretical labour market outcomes had they not taken part in the specific intervention. This is the counterfactual, that is what would have occurred to them in the absence of the intervention. This counterfactual cannot be observed, but must instead be estimated. Simply comparing the outcomes of participants with those of non-participants would not answer this question because these two groups of jobseekers may differ in ways that determine both their participation in the intervention and their subsequent labour market outcomes. It is therefore important to find ways to compare jobseekers who are as similar as possible by using data on their demographic characteristics (gender, age), their observed skills (e.g. foreign language, ICT skills, etc.) and qualifications, financial (dis)incentives to leave unemployment (unemployment benefits, other types of income), other employment barriers, their geographic area of residence and job search, and their labour market history. In addition, it is crucial to compare jobseekers with similar unemployment durations to minimise any role that unobservable characteristics can play in explaining the moment during an unemployment spell that people enter an ALMP as well as their subsequent employment outcomes.

An approach that has been used in the related literature and is also used in this report is based on a “dynamic selection-on-observables” methodology. This approach compares the labour market outcomes of jobseekers who enter an ALMP (specifically vocational training and employment subsidies) in a given month of their unemployment spell with those who have not (yet) entered one of those ALMPs at a similar unemployment duration. In addition, this approach also compares individuals who have the exact same characteristics along a number of additional dimensions: calendar month and year of entry into the programme, age group, and whether individuals are receiving unemployment benefits.

1.2.3. Evaluations should look at outcomes beyond the probability of employment to account for aspects of job quality

Most CIEs of ALMPs in the international literature examine as main outcomes the probability of employment and, when possible, earnings. Even though the impact of an intervention on one’s probability

of job finding is the first indicator to look at, it does not provide any information about the type of job obtained, any job-quality related characteristics or sustainability of employment. To address this, this report relies on Lithuania's rich data available to evaluate the impact of ALMPs on a wider set of outcomes. More specifically, it is possible to look at the cumulative employment duration, as an indicator of job sustainability. In addition, the evaluation examines wages and cumulative earnings over the observation period, as well as cumulative earnings net of subsidies or training cost. This later indicator is used to compare the benefits of an intervention expressed as cumulative earnings over a three-year horizon with the direct cost of the intervention.

In addition to these indicators, this report proposes an innovative way to assess the impact of ALMPs on occupational mobility. The main reason for analysing this outcome is because it is often the case that jobseekers who return to employment tend to enter lower-skilled occupations or return in occupations that pay lower wages because of scarring effects of (long-term) unemployment. The key question that the analysis in this report aims to answer is whether ALMP participation can in fact counteract these effects, offering a boost not only in terms of the likelihood of finding a job but also in terms of career progression in case a job is found. The measure of occupational mobility relies on an occupational index which is based on observed wages. Based on data on wages of all employed people in Lithuania during the 2018-20 period, a wage index is calculated for each detailed occupational code. Increases and decreases in that index can be interpreted, respectively, as positive and negative changes in an individual's occupation. Changes in this index are then used as an additional outcomes indicator in the CIE of vocational training and employment subsidies conducted in this report.

1.2.4. Lithuania's rich linked administrative data represent an invaluable resource for evaluating the impact of ALMPs

Rich data available in Lithuania's administrative registers can be linked and used to conduct CIEs of ALMPs, as well as evaluations of other labour market and social policies. As in many other OECD and EU countries, Lithuania can collect and link information on jobseekers characteristics, their participation in ALMPs and their employment outcomes by linking public employment service data (the LES register) with social security data (the Board of the State Social Insurance Fund, SODRA) and the business register (State Enterprise Centre of Registers). The dataset that is constructed by merging all these registers provides rich information on the personal characteristics of jobseekers (such as their age, education and possible barriers to become employed), their labour market outcomes (notably employment, unemployment, earnings, days worked, occupation) and their participation in various ALMPs. In addition, the data enable constructing the employment history of jobseekers before becoming unemployed as well as their previous unemployment spells history.

While the data are comprehensive and detailed, they could be further enriched along several dimensions. One variable that would be useful to include in the analysis but is currently missing in the data is that of hours worked. The impact evaluation in this report documents the generally positive effects of the programmes studied on a number of outcomes, including employment probability, but also hints at some trade-offs in terms of occupational mobility. A similar trade-off could conceivably be present in terms of hours worked. It would also be useful to obtain information on other sources of income received by jobseekers, including data on social assistance or disability benefits and income data from the State Tax Inspectorate. These could be useful in accounting for (or examining) the role of financial incentives in exiting to employment from unemployment. Finally, in terms of measuring training outcomes, it would be useful to have information on the target occupations of vocational training programmes. This could help with a systematic assessment of whether individuals are being hired in the occupations for which they have trained.

1.3. Vocational training and employment subsidies help to connect people with jobs, but could be fine-tuned further

1.3.1. Vocational training and employment subsidies are two of the main ALMPs in Lithuania, representing half of the total ALMP budget

Vocational training and employment subsidies are two of the main ALMPs in Lithuania, accounting for about one-third of participants in ALMPs and half of expenditures on ALMPs during the 2014-20 period (excluding counselling and job brokerage by the LES and COVID-19 employment support measures).

Vocational training offer unemployed people in Lithuania the possibility to select formal training (which leads to an accreditation or certificate) or non-formal training from accredited training providers. Roughly three-quarters of training taken up was formal training. The average duration of vocational training was 2.8 months, with the average durations amounting to 3.4 months for formal training and 1.3 months for non-formal training. During the 2014-20 period, approximately 94 000 episodes of such vocational trainings took place, with individuals entered vocational training in roughly 4% of unemployment spells during this period. Furthermore, about one-quarter of training measures were accompanied by a tripartite agreement between the jobseekers, the LES and an employer who commits to employ the worker after the end of vocational training for at least a period of six months. Relatively small firms with less than 50 employees employed 58% of vocational training participants who entered into a tripartite agreement over the period 2018-20.

Employment subsidies paid by LES subsidise 50% of participant's wage costs and up to 75% for individuals with disabilities, with a ceiling amounting to twice the statutory minimum wage during the 2017-19 period and one and a half statutory minimum wages thereafter. The employment subsidy is paid for six months (and indefinitely for people with severe disabilities or low work capacity). From 2017, employers are obliged to keep the subsidised worker for at least six months after the end of the subsidy. Approximately 80 000 unemployed people benefited from employment subsidies in the period between 2014-20, representing approximately 4% of unemployment spells during this period.

Small firms and new firms make a disproportionately large use of employment subsidies (as a share of their total employment). During the 2018-20 period, small firms' annual intake of employment subsidy programme participants amounted to 1.5% of their average employment and they accounted for 75% of all participants. The annual intake of employment subsidy participants amounted to 0.8% of the average employment of new firms (those younger than two years), compared to 0.5% of those aged 5-9 years. Evidence from OECD countries suggest that new firms are less likely to be making a profit and thus have a stronger incentive to seek out employment subsidies. Several sectors stand out for their extensive use of vocational training and employment subsidies, including agriculture, manufacturing, as well as wholesale and retail trade.

1.3.2. Younger jobseekers, men and high-skilled jobseekers are more likely to enter the vocational training or employment subsidy programmes

Jobseekers under the age of 30, particularly men, are disproportionally likely to enter vocational training or the employment subsidy programme. Women aged 30 or over, on the other hand, are disproportionally *less* likely to enter vocational training or the employment subsidy programme, with women 50 and over four times less likely to enter vocational training relative to their share of the unemployed. Men in general are more likely to enter either programme, but particularly vocational training, where they accounted for 78% of participants, even though men and women were roughly evenly represented amongst the registered unemployed during the 2014-20 period. The gender disparities in training could partly reflect the types of courses that are available and which are the most popular courses, like obtaining a licence to drive a commercial vehicle, has mostly male participants.

One feature that may encourage women to undergo vocational training is the presence of a tripartite agreement, which obliges the employer to employ the worker after the end of vocational training for at least a period of six months. Across all age groups, the share of women entering training with tripartite agreements is considerably higher than the share entering without tripartite agreements.

Low-skilled jobseekers are disproportionally less likely to enter either of the two ALMPs studied. This likely reflects the fact that people without any qualification were not eligible for training programmes for some periods within the timeframe analysed – rather, such individuals were to be referred to formal education programmes before potentially being eligible for vocational training targeted towards the unemployed. Interestingly, in terms of the urban location of jobseekers entering the ALMPs examined, individuals from non-urban areas are slightly more likely to participate, even though, in the case of vocational training, consultations with stakeholders have indicated that finding a suitable training provider can be more of a challenge in practice in non-urban areas than in the larger urban regions More generally, vocational training tends to be taken up earlier during the registered unemployment period, while long-term unemployed are more likely to enter subsidised employment.

The characteristics of participants in vocational training and employment subsidies indicate that groups that are close to the labour market are more likely to receive this support, such as young and prime-age men and high-skilled jobseekers. This can raise concerns for creaming (support is provided to those people who enter the labour market quickly in any case) and can be particularly problematic if there is no other support available for the people further from the labour market. These results also highlight the importance of continuously assessing jobseeker needs and revisiting their individual action plans, not only in the beginning of the registered unemployment period but subsequently one year later.

1.3.3. Vocational training helps individuals become employed, especially in the short term, without adversely affecting occupational mobility or wages

The CIE results in this report show that vocational training has a positive and statistically significant effect on the probability of employment. The effect is initially modest but reaches a peak at around nine months after beginning the training programme. At this point, the likelihood of being employed was 21 percentage points higher for individuals who participated in training (the treatment group) than for those who had not entered an ALMP (the comparison group). The initially lower magnitude of the effect reflects the so-called “lock-in” effects, which arise because individuals in training are generally not engaging in intensive job search and may not be willing to accept a job until the conclusion of their training. After nine months, the effects of training on the probability of employment diminish but remain positive through the 3-year evaluation period, amounting to 5 percentage points at the end of the period. The lock-in effect is also reflected in the estimation of the effect of training on days in employment. Initially up to four months (similar to the average duration of training), the impact of vocational training is negative and becomes positive at six months. Over the longer term, the effect of vocational training amounts to approximately 75 additional days of employment.

In contrast to the impact on employment probability and days in employment, vocational training has no significant positive effects on wages or occupational mobility. Individuals becoming employed early on after entering training experience a small wage cut relative to their pre-unemployment wages. However, both groups recoup the wage gap one year after entering training, when they earn a slightly higher wage than they had before becoming unemployed. The estimated effects of training on occupational mobility are found to be generally insignificant, with some estimates pointing to negative effects from month 12 onward. This result implies that jobseekers who became employed after training on average entered occupations that paid slightly less than those who had not engaged in training. The sub-group analysis indicates that the results are largely driven by the effects observed for men under 30, who do not “climb the occupational ladder” as quickly as their peers who exit unemployment without first undertaking vocational training. The magnitudes of the effects in the index are not particularly large, but they do indicate that for training, participants are indeed more likely to be employed than non-participants but they often enter into lower

wage occupations. On the whole, however, the positive employment effect far outweighs these two factors: participation in training has positive effect on cumulative earnings from nine months onwards, which is when most participants have completed their training.

The estimated effects of vocational training in Lithuania compare favourably with those in other countries and previous evaluations in Lithuania. The effects of training for Lithuania are generally much larger in the short term (16.9 percentage points for Lithuania versus 2 percentage points found in other studies) and in the lower range of estimates over longer time horizons (5.3 percentage points in Lithuania versus 6.7 percentage points on average in other studies). When compared to the results of less recent studies in Lithuania, the estimated effects are considerably more positive than the effects of vocational training offered around 2010 and are more similar to those of a more recent study that analysed the effects for jobseekers entering vocational training in 2016.

1.3.4. The voucher system for vocational training may partly explain the positive effects

The positive results in Lithuania may indicate that the design and implementation of training is producing more effective labour market outcomes than training programmes in other countries on average (although this report evaluated only part of training provision in Lithuania). Implementing vocational training through a voucher system – with the LES counsellor first assessing the individual needs and agreeing with the jobseekers on relevant support, and subsequently the jobseeker choosing a training provider – offers two main potential benefits, while keeping the administrative burden low.

First, the possibility of having several providers offer similar types of training can lead to competitive pressures improving the quality of training provision. While also a traditional public procurement process assures a competitive process and allows LES to sign contracts with several providers, the voucher system enables co-operating with many providers more efficiently. The finding that the estimated benefits of vocational training are slightly, although not statistically significantly, greater in large urban areas than elsewhere is consistent with this interpretation: large urban areas have a more competitive market with both a greater number of providers and clients.

Second, the voucher system could allow for a wider array of training programmes to be offered with lower administrative burden, which may help to address local skills shortages more quickly and effectively. During the 2014-20 period, jobseekers enrolled in 2 000 different types of courses, indicating that meeting the demand for training might be faster and more versatile using vouchers than in a traditional public procurement system. The simplified procurement procedures in the voucher system with providers not having to undergo competitive tenders but a more simplified accreditation system also lowers the administrative burden of offering training for both the LES and the training providers.

The voucher based system is in stark contrast to the system of public procurement which had been in place in Lithuania prior to 2012, when there were longer public tenders for the purchase of training services, and the procurement procedure for acquiring training providers taking three months or more. The finding that Lithuania's vocational training programmes are particularly effective in the short term compared with programmes in other countries is consistent with this rationale.

1.3.5. Men, older (especially older women), low-skilled and long-term jobseekers gain larger benefits from participating in vocational training

The positive effects of vocational training are not the same for all population groups. Men tend to benefit slightly more from training than women particularly in terms of cumulative days in employment and cumulative earnings and especially in the short to medium term. Two years after the start of training however, the effect of training is very similar for men and women. In addition, women experience a positive effect on occupational mobility in the short term (during the first 12 months after completing training), while men experience a negative effect for most of the periods observed after entering training. Despite this result,

men experience a large, positive effect on cumulative earnings (including cumulative earnings net of the direct training cost) which suggests that the positive impact of training on days worked for men offsets any negative effects on occupational mobility. For women, on the other hand, the positive effect on earnings is not large enough to offset the direct costs of the training. Part of the reason might lie in the gender wage gap in Lithuania, which makes it more difficult for women to achieve a higher wage even after up-skilling. Decreasing the gender wage gap should be continuously addressed by wider employment and social policy responses in Lithuania. Furthermore, women's choices might be more limited on the labour market in case of insufficient support to address care responsibilities (such as childcare, care for older people and people with disabilities, which tend to be more commonly the responsibility of women than men).

While the employment effects of vocational training are positive for all age groups, they are progressively stronger for older groups of jobseekers and this holds particularly for women. For women over 50 years, the estimated effect on employment is 10.7 percentage points at 24 months after entering training, while for younger women this is only 5.4 percentage points. Low-skilled jobseekers appear to benefit slightly more than high-skilled jobseekers, while there do not appear to be systematic differences between large urban areas and other areas. Long-term unemployed benefit slightly more from being included in training than short-term unemployed, consistent with some findings in the literature.

1.3.6. Employment effects of vocational training are stronger when there is a tripartite agreement between jobseekers, the LES and employers

In about one-quarter of vocational trainings undertaken, employers commit to hiring a worker who successfully completes the training. The counterfactual impact analysis shows that, as expected, signing a tripartite training agreement with an employer in advance of receiving the training boosts the observed employment effects of the training considerably. The presence of such an agreement results in an 11.5 percentage point increase in employment probability 24 months after entering training, compared with a 6.3 percentage point effect among those who did not have such an agreement before their training. As expected given the commitment of employers, the differences in the short-term effects are even more pronounced: six months after entering training, individuals with tripartite agreements experience a 28.3 percentage point increase in employment probability, compared with 11 percentage points for those entering training without a tripartite agreement. The point estimates associated with having a tripartite agreement remain consistently higher than those for training without such an agreement throughout the period observed, although the differences are not as large after the first 12 months (corresponding essentially to the minimum period that employers are obliged to retain the employment relationship), averaging five percentage points in the ensuing period. In addition, the effect of training on cumulative employment duration is considerably more positive among individuals undergoing training with a tripartite agreement.

These positive results of tripartite training agreements highlight the importance of combining ALMPs like training with job matching and placement services to increase the effectiveness of LES support. While people close to the labour market could find an employer willing to commit to hire them after a short up-skilling measure, people further from the labour market are more likely to need more support from the LES to help them find job opportunities, or even solicit them to the potential employers. Only relying on jobseekers' initiative to find employers for the tripartite training agreements might lead to creaming (mostly job-ready jobseekers benefitting from the service provision) and deadweight loss (jobseekers that would have been hired anyway benefitting from the measure). The dedicated employers' counsellors put in place in 2017 in the LES have the potential to reach out and co-operate with employers to facilitate signing tripartite training agreements also with jobseekers further from the labour market.

The stronger positive results of training with tripartite agreements also highlight the importance of employer engagement in training provision. Evaluation results from other countries indicate for example that involving employers in training design can contribute to policy design that correspond better to their labour market needs. Involving employers in training implementation enables providing jobseekers with up-to-

date knowledge and skills for the job and enables them to make direct contact with prospective employers, increasing their chances for employment. The tripartite training provision in Lithuania might enable to engage jobseekers in training that are (in the short term) needed by employers, as well as enable them practice the new skills and gain experience shortly after classroom training.

1.3.7. The positive results of training suggest that Lithuania should invest more in this measure and find solutions to increase access to it

Although there was only limited take up of online training at the beginning of the COVID-19 pandemic, it has potential to offer additional solutions for scaling-up training provision and to provide a wider selection of courses, especially in remote areas. While the pandemic hit training provision unexpectedly, providers were not prepared to move the training content and methods from classroom training to digital channels quickly and keep the level of quality. As the digital channels have gained more prominence during the pandemic throughout public and private services, the possibilities and necessary skills to use these channels have likely improved.

In addition, online courses for independent learning can be an option to make some upskilling available to a wider share of jobseekers. Furthermore, these learning modules can be used more flexibly as they are not dependent on the trainer's availability. Nevertheless, in order to support particularly the low-skilled jobseekers, training in digital skills might be required before they can benefit more extensively from such online upskilling resources.

1.3.8. Subsidies have significant positive effects on labour market outcomes

Employment subsidies have large and persistent effects on individuals' employment probability. The effects are particularly strong during the first year of employment, although these largely reflect the fact that employers receive subsidies for six months and are then required to retain workers for another six months. Nevertheless, after 12 months, when employers no longer have an obligation to retain the workers, individuals who entered subsidised employment were 26.7 percentage points more likely to be in employment than those who had not entered an ALMP 12 months prior. Even though the observed benefit of having been in subsidised employment becomes more modest over time, it remains statistically significant three years after the start of subsidised employment (with a 10.9 percentage point difference in employment compared to jobseekers who did not enter an ALMP at the beginning of the observation period).

In line with the positive effects on their employment probability, jobseekers entering subsidised employment were employed for a considerably longer period than jobseekers who did not enter subsidised employment (269 days over the three-year observation period, 60% more than the six months of subsidised employment). In addition to providing a boost to their employment probability and duration, jobseekers entering subsidised employment experience a short-term boost in their occupational mobility observed in months 9 to 18 after starting the employment subsidies. The analysis does not find any statistically significant effects on wages but finds a positive effect on cumulative earnings. The effects of the employment subsidies on cumulative earnings are positive also after subtracting the direct costs of the employment subsidies.

The estimated effects of employment subsidies on labour market outcomes in Lithuania are higher than those in the international literature in the short term and somewhat lower in the long term (even though many studies find statistically insignificant effects in the long term). These differences between the short-term and the long-term effects may reflect the requirements for employers in Lithuania to retain the subsidised employees for six months following the end of the programme or else the employer is temporarily excluded from using the scheme. The estimated effects in this report also compare favourably to previous evaluations of employment subsidies in Lithuania in 2010 and 2016.

1.3.9. Employment subsidies have positive effects across the different groups of beneficiaries, although the channels and magnitudes of these effects vary

Men and women tend to benefit slightly differently on average from employment subsidies. While both men and women experience a similar boost in terms of average cumulative earnings, the underlying channels are somewhat different: women experience a greater increase in employment probability, while men experience a more positive effect on occupational mobility. The effects of employment subsidies on wages are inconclusive.

The positive impact of employment subsidies on employment probability at 24 months is highest among older women (21 percentage points for women older than 50 and 18.2 percentage points for those aged 30-50, relative to 12 percentage points for those below 30 years). The effects are also higher for non-urban jobseekers (15.8 percentage points) relative to urban jobseekers (12.2 percentage points). There are no other significant differences across characteristics such as jobseeker age among men, skill level, or unemployment duration. These findings suggest that employment subsidies could be targeted even more extensively to older women and jobseekers living in non-urban areas to support the labour market integration of these groups.

In terms of cumulative earnings, women above 30 years' experience an especially large boost, although both older men and women benefit more compared with younger jobseekers. In contrast to the effects on employment probability, urban jobseekers experience a larger boost in earnings than their non-urban counterparts, as do high-skilled individuals relative to low-skilled individuals.

1.3.10. Subsidised jobs are not replacing unsubsidised jobs

Employment subsidies in Lithuania show no evidence of inducing displacement effects, which would exist if subsidised workers were replacing unsubsidised ones within a given firm. This finding is based on an examination of the pattern of replacement flows – analysing the job positions (occupations) occupied and vacated by individuals entering and leaving firms – which does not suggest any systematic differences for subsidised job positions. The finding is remarkable particularly in light of the strong estimated effects of employment subsidies on the probability of becoming employed.

The absence of displacement effects may arise due to the conditions tied to the receipt of the subsidy, which may provider a disincentive for employers to engage in such strategic behaviour. From July 2017 onwards, employers who dismiss a worker in the six months from the last subsidy payment for that worker are not eligible for further employment subsidies for six months. However, this analysis does not rule out the presence of any deadweight effects, which would arise if firms receive employment subsidies for individuals they would have hired even in the absence of the subsidy.

1.3.11. ALMP targeting could be improved

Especially in the context of relatively low ALMP funding in Lithuania, it is crucial that these interventions are targeting those who need them the most and for whom they are most effective. This highlights how crucial it is to carry out CIEs of the existing ALMPs to identify which measures have an impact on participants' subsequent labour market outcomes. This is one of the aims of the evaluations conducted in this report and the related recommendations provided so that Lithuania can further invest in the use of its rich linked administrative data to build more evidence-informed policy making.

While the results of impact evaluations inform policy design and implementation guidelines, it is important that the implementation of ALMP targeting is supported by tools to assess jobseekers' individual needs for support. At the end of 2021, Lithuania adopted a new digital jobseeker profiling tool that uses statistical methods, machine learning and administrative data to predict jobseekers' probability of long-term unemployment and needs, which is likely to contribute to a better ALMP targeting. This tool replaced the

previously used profiling tool which was based on a number of questions related to the jobseeker's characteristics, barriers to employment and motivation, and which segmented jobseekers into three groups according to their distance to employment and five groups of support needs. Both with the new and the old profiling tools, the final decision on support needs is taken by the counsellor and the jobseeker in a mutual agreement, not necessarily fully adhering to the suggestions by the profiling tool, enabling counsellors to take into account further individual circumstances of the jobseeker. To ensure the new profiling tool is used sufficiently and helps counsellors better support the jobseekers, it will be important to evaluate its use and impact.

Lithuania could improve its targeting of ALMPs by further fine-tuning its tools for assessing jobseekers' individual needs for support. For example, Lithuania could invest in an extension of the jobseeker profiling tool that, in addition to the profiling and segmentation exercise, provides recommendations on ALMPs that could support jobseekers based on their own characteristics and the labour market outcomes of similar jobseekers who benefits from these measures. That could be initially implemented in a randomised manner to facilitate a robust evaluation.

Key policy recommendations

Increase spending on ALMPs and ensure funding sustainability

- Increase spending on ALMPs, with emphasis on programmes that support upskilling and reskilling and promote employment in the primary labour market.
- Plan strategically ALMP funding in the years to come to reduce dependency exclusively on EU funding and ensure budget sustainability.

Expand the reach of ALMPs

- Strengthen further LES engagement with employers, including to enable mediating high-skill vacancies for registered jobseekers.
- Reach out to employers to engage in tripartite training agreements that secure employment opportunities for jobseekers that have lower chances to engage with employers themselves.
- Consider the high share of jobseekers registering with the LES as an opportunity to engage with them and offer to persons furthest from the labour market comprehensive support that combines employment services with other services they may need, such as social, health and education services.

Ensure support is provided according to clients' needs and improve targeting

- Target training measures and employment incentives according to people's needs and in line with the measures' effectiveness for different groups of jobseekers.
- Assess needs for services and revisit individual action plans regularly to provide appropriate support to jobseekers that have not been able to integrate into the labour market quickly.
- Monitor and evaluate the use and impact of the new profiling tool to assess whether this informs decision making in the LES while identifying ways for continuous improvement.
- Consider extending the profiling tool to include recommendations on ALMPs considering the individual characteristics of a jobseeker and matching these with similar jobseekers who have benefitted from these measures. This could be initially implemented in a randomised manner to enable robust evaluation.

Expand upskilling and reskilling opportunities, particularly for people who need them the most

- Strengthen vocational training accessibility, targeting in particular those groups which benefit from it the most, notably older jobseekers aged 50 and above, low-skilled persons and long-term unemployed.
- Promote access to online training, possibly in modular form to support upskilling and reskilling, including for jobseekers in remote areas who face limited choice of courses available locally in-person. In addition to live virtual courses, online modules for independent learning have the potential to reach wider groups of jobseekers at a lower cost.

Ensure that the employment subsidies reach groups that are further from the labour market

- Fine-tune employment subsidies that aim at integrating jobseekers with lower job opportunities to the primary labour market to target even more closely those that have the potential to benefit from this measure the most, such as older jobseekers and people living in non-urban areas.
- Continue re-designing the employment subsidy scheme for people with disabilities and long-term unemployed to reach those groups that are the furthest from the labour market. Complement this scheme to involve training, job search assistance and other relevant support corresponding to their specific individual needs, and strengthen the integration of these vulnerable groups into the primary labour market as a longer-term objective.

Invest in evidence-informed policy making

- Establish a mechanism for counterfactual impact evaluations (CIE) of ALMPs which goes beyond the monitoring of gross labour market outcomes of ALMP participants to generate knowledge on the effects induced by ALMPs.
- Build analytical capacity in the LES or build good co-operation practices with external experts and researchers to ensure continuity of rigorous and systematic ALMP impact evaluations.
- Further enrich the linked administrative data available for CIEs of ALMPs by including data on hours worked and benefits received by jobseekers beyond unemployment benefits.
- Complement CIEs of ALMPs with process evaluations (assessments how implementation corresponds to design and strategies), as well as impact evaluations of the tools and approaches used by the LES.
- Use the results of CIEs to conduct systematic cost-benefit analyses to demonstrate the cost-effectiveness of ALMPs and make the LES business case.
- Integrate impact evaluations into the policy making cycle by disseminating the results of the evaluations, using them to drive policy design and implementation and to scale up funding for effective ALMPs.

Invest in IT data management systems and step up data use in policy making and implementation

- Continue expanding data sharing between the LES and other relevant institutions for operational purposes to achieve more accurate assessments for support and holistic service provision, while strengthening data availability across administrative registers for research.
- Modernise the IT infrastructure in the LES to support data analytics and knowledge dissemination, such as data warehouse or data lake solutions linked to user-friendly business intelligence tools.

2 Recent trends in the Lithuanian labour market and active labour market policies

The employment rate grew strongly in Lithuania over the last decade and suffered due to the COVID-19 pandemic less than in other OECD countries. An increased labour demand has encouraged people to enter the labour market and look for a job, but has also increased wages faster than the productivity growth. Furthermore, significant disparities in labour market outcomes exist by education level and geographic location, highlighting the need for active labour market policies (ALMPs). The 2017 reform aimed to make the system of ALMPs more effective, efficient and accessible, yet the coverage of ALMPs has remained low and focused on employment incentives. A fully-fledged evidence informed policy making is needed to make ALMP provision more effective and achieve sustainable funding.

2.1. Introduction

This chapter gives first an overview of the labour market situation in Lithuania, highlighting the key challenges that need to be addressed by active labour market policies (ALMPs) and employment policy more generally. Subsequently the system of ALMP provision is reviewed, with the focus on its potential effectiveness to support the labour market and address its challenges.

The employment rate in Lithuania has increased steadily over the past decade and remained resilient during the COVID-19 pandemic. Yet, high employment has been accompanied by wage growth beyond productivity growth. Furthermore, the employment rate is still low among people with lower levels of education, people living in remote areas and people with health limitations, suggesting needs for training measures, measures to support mobility, as well as ALMP support targeting the individual needs and employment obstacles in general. The importance of providing opportunities for good jobs for all is further underlined by the projections that working-age population will be declining fast in the coming years, beyond the drop in the total population.

A high share of jobseekers register with the Lithuanian Employment Service (LES), but they are potentially incentivised more by gaining access to health insurance and benefits, rather than ALMPs. The budget for ALMPs has remained about half of the level of other OECD countries even after a major reform in 2017 aiming to redesign ALMPs to increase their effectiveness, efficiency and accessibility (a major budget allocation during the COVID-19 was for employment maintenance schemes, but not for other ALMPs). A large component of the ALMPs are employment incentives, particularly a scheme supporting hiring people with disabilities in so-called social enterprises that have been widely criticised by the stakeholders. Take-up of training schemes has remained modest regardless of significant efforts to redesign the schemes. Lithuania needs to implement a fully-fledged evidence-informed policy making, including conducting counterfactual impact evaluations systematically and disseminating their results. This could help make the system more effective, as well as attract sustainable national funding and rely less on EU funding resources.

2.2. Labour market situation and trends in Lithuania

This section compares the labour market situation in Lithuania with other OECD countries and identifies specific challenges that Lithuania faces which could be addressed by ALMPs.

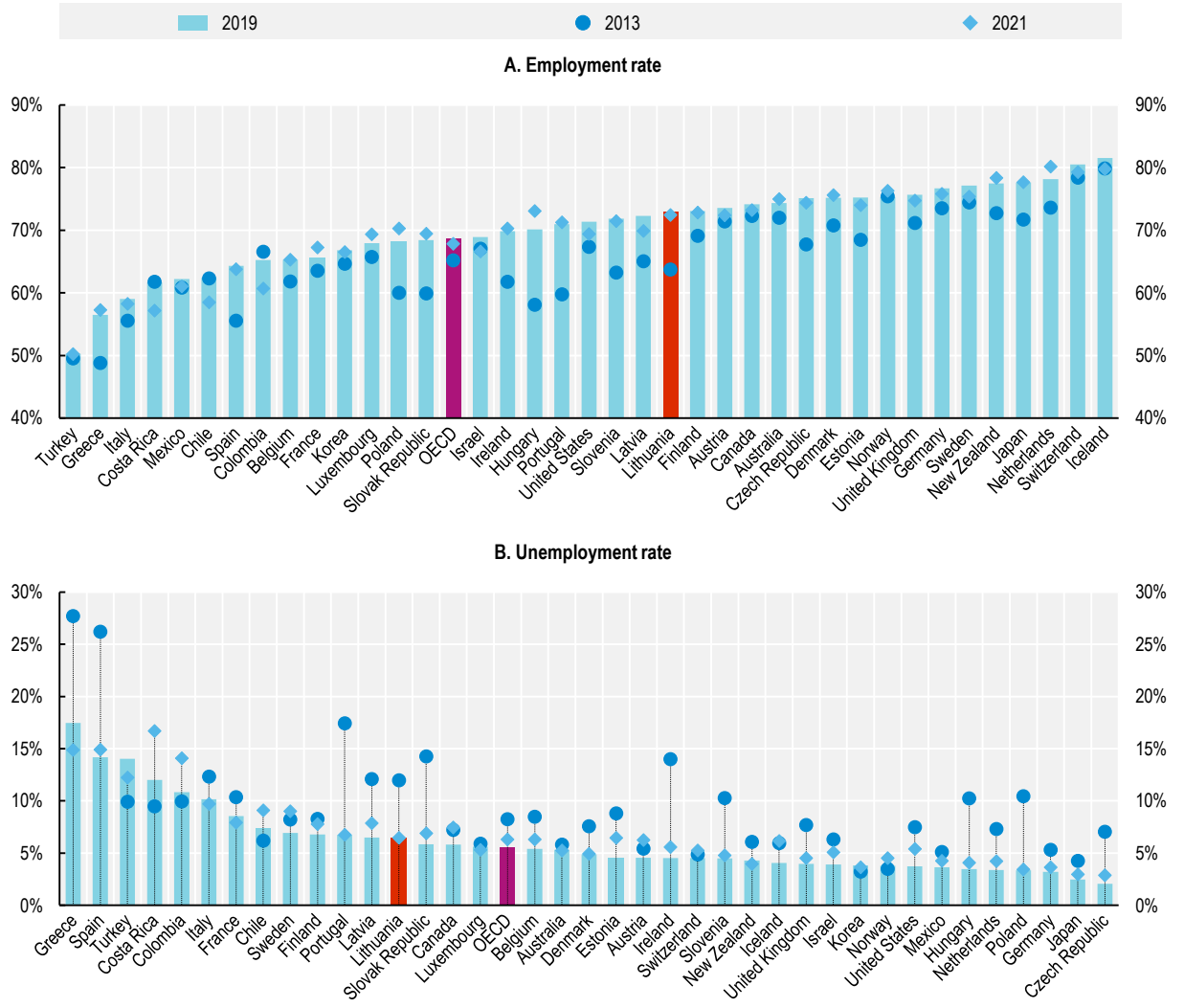
2.2.1. Strong employment growth characterised the Lithuanian labour market over the past decade

The Lithuanian labour market has steadily improved over the past years and remained resilient through the COVID-19 pandemic. The employment rate reached the levels seen before the Global Financial Crisis around 2013 and continued to increase until 2019, exceeding the OECD average (73.0% versus 68.7% among 15-64 year-olds, Figure 2.1). The drop in the employment rate in 2020 was smaller in Lithuania (1.4 percentage points) than in the OECD on average (2.5 percentage points) and has recovered close to the pre-pandemic level by 2021 (at 72.4%). Similarly, the labour force participation rate in Lithuania had increased faster than the OECD average before the COVID-19 pandemic, and continued to grow in 2020, while the OECD average dropped. This high and growing labour force participation rate (and thus low inactivity rate) is also the reason why the unemployment rate has remained higher in Lithuania than the OECD average and increased substantially in 2020 (from 6.5% in 2019 to 8.8% in 2020 among 15-64 year-olds, while the unemployment increased from 5.6% to 7.3% in the OECD on average). In 2021, the unemployment rate in Lithuania has decreased (to 7.4%), but also labour force participation dropped (to 78.2%).

The general labour market trends in Lithuania have been over the years similar to the other Baltic countries – Estonia and Latvia. During the years preceding the COVID-19 outbreak, the employment rate grew slightly faster in Lithuania than in the other Baltic countries. Lithuania's employment rate surpassed the same figure in Latvia in 2016, but has not yet caught up with the Estonian level (72.4% versus 74.0% among 15-64 year-olds in 2021). The labour force participation rate has also grown significantly faster in Lithuania than in the other Baltics, reaching 78.2% in 2021 among 15-64 year-olds, being still below the level of Estonia (79.1%), but above the level of Latvia (75.8%) and the OECD (72.4%).

Figure 2.1. The employment rate suffered less in Lithuania than the OECD average during the COVID-19 pandemic, and the unemployment rate increased partly due to the growing labour force participation rate

Employment and unemployment rates among 15-64 year-olds, 2013, 2019 and 2021



Note: OECD is the weighted average of the 38 OECD member countries. Countries ranked by 2019 data.
Source: *OECD LFS by Sex and Age – Indicators Database*, http://stats.oecd.org//Index.aspx?QueryId=54218.

StatLink https://stat.link/624wlf

With the right employment policy, including effective active labour market policies, Lithuania has the potential to further increase its employment rate and labour force participation rate, securing labour income and stronger social security for a higher share of its working age population.

The increasing employment rate has been accompanied by quickly rising wages in Lithuania over the past years (Figure 2.2). Lithuania witnessed a higher real wage growth than any other country in the OECD between 2013 and 2020 (real wages grew in total by 49% over this period, while the OECD average increased by 8%). Quickly increasing wages and employment rates have also likely encouraged people to enter the labour force from inactivity, thus increasing the labour force participation rate and keeping the unemployment rate relatively high. While the wage level in Lithuania has been quickly catching up with the OECD average, a significant gap still remains.

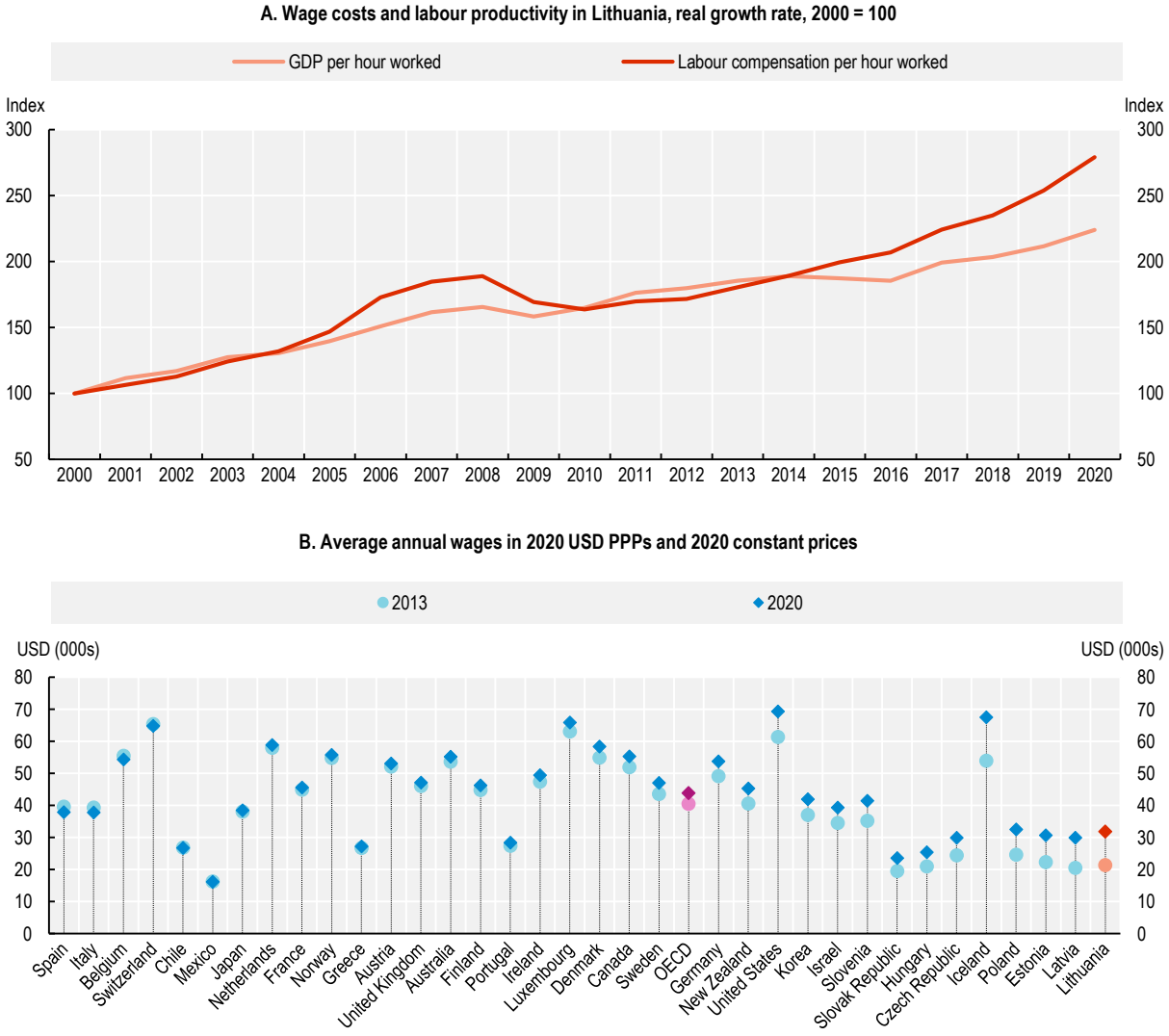
Along with a strong wage growth, gender wage gap has decreased, but remains significant. In 2018, gender wage gap in Lithuania was at 11.7%,[1] which was lower that the OECD average (12.7%), but slightly higher than the EU average (11.1%), (OECD, 2022[1]).

Nevertheless, labour productivity has not kept up with the rising wages. In the context of relatively high and increasing employment rate, the employers have been pressured to increase wages, while investments in productivity have been lagging behind.

One factor contributing to labour market tightness in Lithuania has been its decreasing population. Compared to 1990, Lithuania's population has shrank by 26% by 2020. The drop among the working-age population (15-64 year-olds) has been even sharper (29%). This challenge is expected to remain as Lithuania is forecast to lose more of its population by 2050 than any other OECD country – 22% of total population (Figure 2.3) and 31% of working-age population. The particularly fast decline in the working-age population stresses the urgency to support anyone willing and able to work to access good jobs via effective employment policies, including active labour market policies. Addressing such a challenge successfully requires reaching out to and supporting groups beyond the usual target groups of ALMPs, such as discouraged workers and other groups in inactivity who would like and are able to work in case of appropriate support, people in low value-added jobs and in risk of job loss, as well as people who have reached the retirement age, but would like to continue working.

Figure 2.2. Wages have increased fast in Lithuania, exceeding labour productivity

Growth in wage costs and labour productivity in Lithuania in 2000-20, and average annual wage in OECD countries in 2013 and 2020



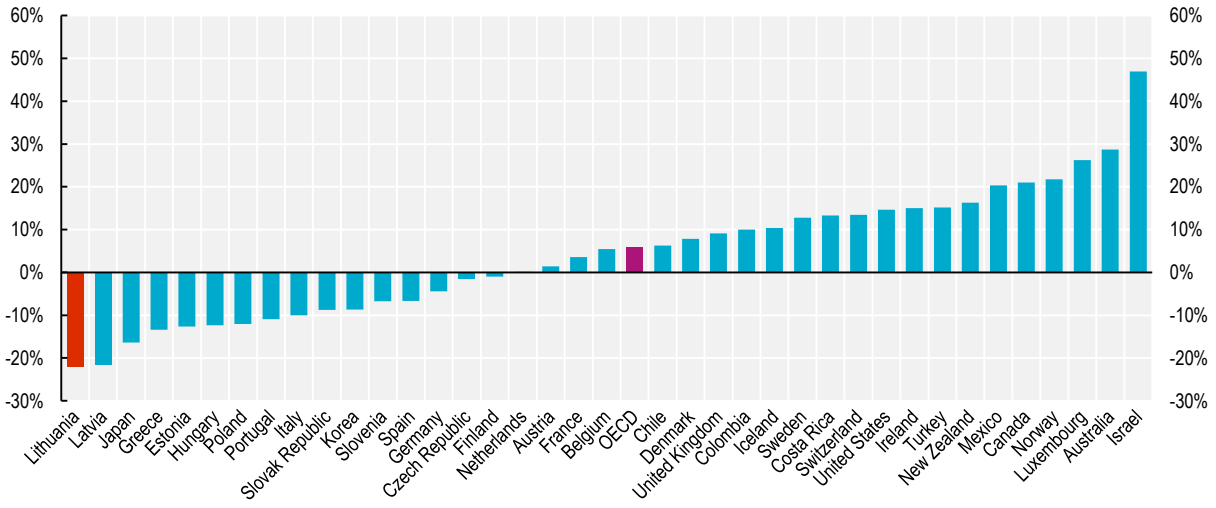
Note: Gross domestic product (GDP), purchasing power parity (PPP), United States Dollar (USD). Panel B: Countries are ordered according to the increase in average annual wages between 2013 and 2020 (highest increase on the right). OECD is an unweighted average (and excludes Colombia, Costa Rica and Turkey). This dataset contains data on average annual wages per full-time and full-year equivalent employee in the total economy. Average annual wages per full-time equivalent dependent employee are obtained by dividing the national-accounts-based total wage bill by the average number of employees in the total economy, which is then multiplied by the ratio of average usual weekly hours per full-time employee to average usually weekly hours for all employees. Average wages are converted in USD PPPs using 2020 USD PPPs for private consumption and are deflated by a price deflator for private final consumption expenditures in 2020 prices.

Source: Panel A: OECD calculations based on the *OECD Productivity Database*, Growth in GDP per capita, productivity and ULC Dataset, http://stats.oecd.org//Index.aspx?QueryId=54368 for Labour compensation per hour worked in current prices and GDP per hour worked in constant prices; and *OECD Key Short Term Economic Indicators Dataset* [Consumer Prices – Annual inflation], http://stats.oecd.org//Index.aspx?QueryId=21757 for consumer price index. Panel B: the *OECD Average Annual Wages Database*, http://stats.oecd.org//Index.aspx?QueryId=25148.

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Figure 2.3. Lithuania is forecast to lose close to one-quarter of its population by 2050

Expected evolution of the population size between 2020 and 2050, by OECD country



Note: OECD is the weighted average of the 38 member countries.
Source: United Nations World Population Prospects 2019.

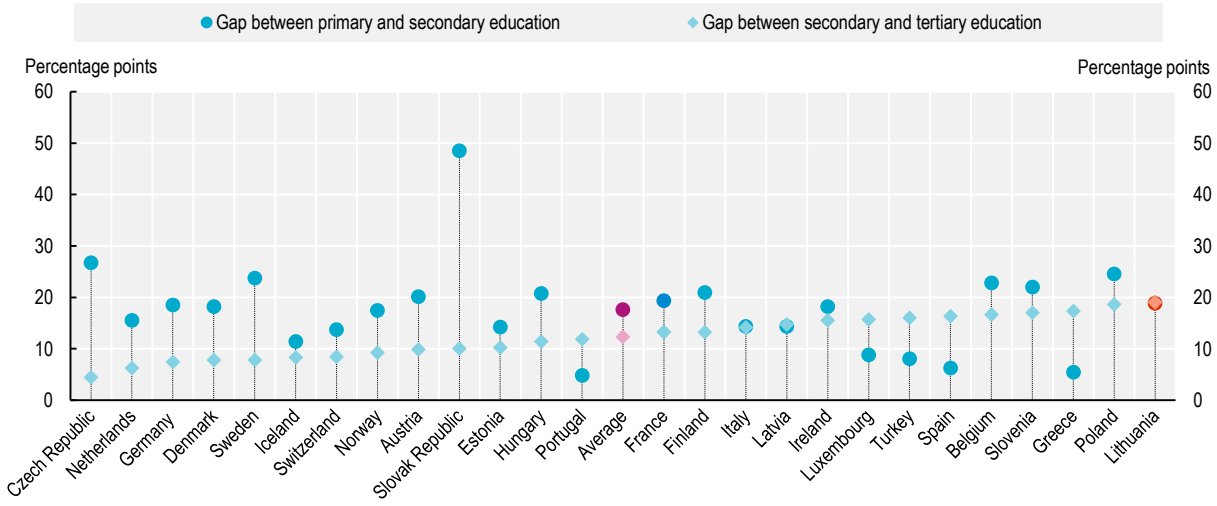
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2.2.2. Large labour market disparities still exist between different groups of population

While employment has increased strongly among people with lower educational attainment, gaps compared to highly educated people have remained. Both the employment gap between people with tertiary and secondary education (19 percentage points among 20-64 year-olds in 2021), as well as the employment gap between people with secondary and primary education (18.8 percentage points) are more pronounced than in many other OECD countries (Figure 2.4). Furthermore, the higher than the OECD average total employment rate among the working age population is indeed driven by the high employment rate among people with tertiary education. The average of the 26 OECD countries shown in Figure 2.4 indicates that the employment rate among 20-64 year-olds was lower in Lithuania than in the OECD in 2021 for people with primary education (51.5% vs 55.3%) and people with secondary education (70.3% vs 72.9%), but higher for people with tertiary education (89.3% vs 85.2%).

Figure 2.4. The employment gap between tertiary and secondary education in Lithuania is one of the widest in OECD

Differences in employment rates in percentage points between educational attainment levels, 20-64 year-olds, 2021



Note: Employment gap between primary and secondary education: difference in employment rate in between people with less than primary, primary and lower secondary education (ISCED levels 0-2), and people with upper secondary and post-secondary non-tertiary education (ISCED Levels 3 and 4). Employment gap between secondary and tertiary education: difference in employment rate in between people with upper secondary and post-secondary non-tertiary education (ISCED Levels 3 and 4), and people with tertiary education (Levels 5-8). The purple markers represent the unweighted average of the 26 countries shown. Data are sorted by the ascending gap size between secondary and tertiary education. Data for Turkey refer to 2020.
Source: Eurostat – Employment by educational attainment level – annual data.

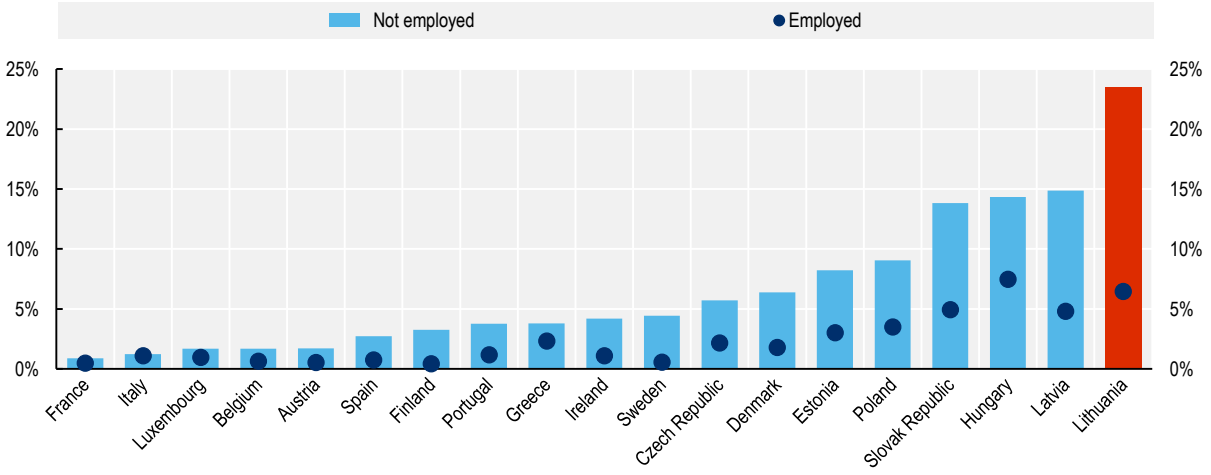
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There are strong geographic disparities in the Lithuanian labour market. While the employment rate was 81.4% among the 15-64 year-olds living in the capital city of Vilnius in 2020, it was only around 50% in the remote and rural areas like Anykščiai, Ignalina, Lazdijai and Šakiai municipalities (Statistics Lithuania data). The OECD computations using the data of the EU Statistics on Income and Living Conditions from 2019 show that geographic obstacles to jobs (living far from the location of jobs) are particularly pronounced in Lithuania (Figure 2.5). About a quarter (23.5%) of 16-64 year-olds who were not in employment in 2019 were living in a thinly populated area and in a household without a car. Another prominent employment obstacle in Lithuania tends to be health limitations of working-age people (OECD, 2022[2]; Pacifico et al., 2018[3]), while other reasons like care responsibilities are slightly less severe than in the other EU countries on average.

Due to the substantial labour market disparities, structural unemployment is likely a significant challenge in Lithuania. In 2019, the natural rate of unemployment (non-accelerating wage rate of unemployment – NAWRU) was estimated to be 7.2% in Lithuania, i.e. slightly higher than the observed unemployment rate of 6.5%, as well as higher than the EU average NAWRU at 6.9% (Figure 2.6). Although the level of natural unemployment is forecast to decrease in Lithuania in 2022, data from the past years suggest that there is still a lot of scope to address the education/skills and geographic mismatches on the labour market, as well as to support non-employed people to overcome the specific obstacles they face in accessing jobs. This underlines the importance of training measures, measures to support geographic mobility, as well as individualised support more generally that should be provided by the system of ALMPs in Lithuania.

Figure 2.5. Geographic distance is a severe barrier to employment for the out-of-work people in Lithuania

Share of working age people (16-64) with a geographic distance barrier, by employment status, 2019

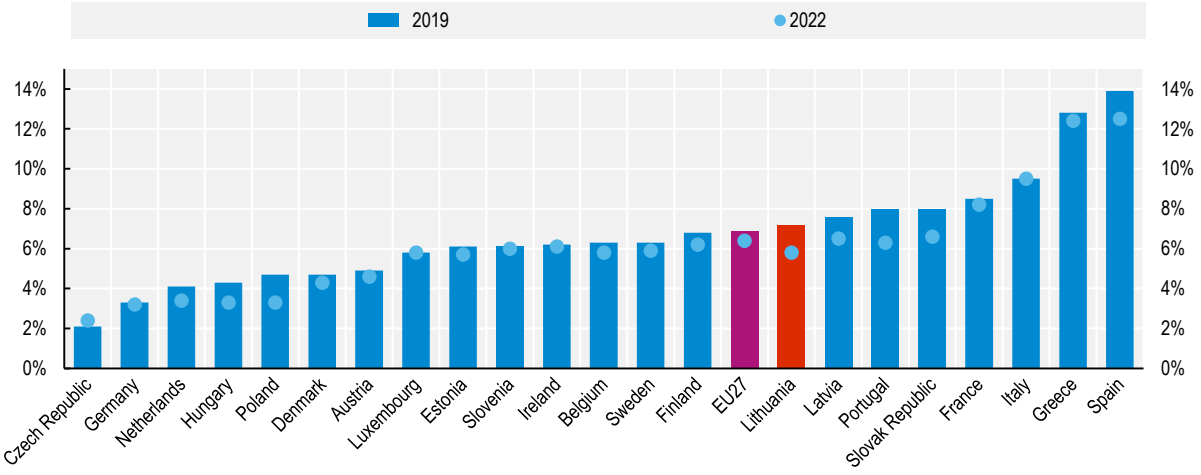


Note: Geographic distance barrier is defined as living in a thinly populated area and in a household without a car. Due to data comparability across countries the "self-defined" measure of out-of-work is used in this chart. See the methodology in OECD (2022[2]), Data refer to 2018 for Ireland and Italy.
Source: OECD calculations based on the European Union Statistics on Income and Living Conditions (EU-SILC), 2019.

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Figure 2.6. Structural unemployment in Lithuania is potentially higher than the EU average

Non-accelerating wage rate of unemployment across EU countries in 2019 and 2022



Note: The natural unemployment rate refers to the non-accelerating wage rate of unemployment (NAWRU), i.e. the rate of unemployment consistent with constant wage inflation. The natural rate of unemployment consists of the frictional and structural components. If the observed unemployment rate is close to the natural unemployment rate, we can assume that cyclical component in the observed unemployment rate is low and most of it can be explained structural unemployment.
Source: AMECO Database of the European Commission's Directorate General for Economic and Financial Affairs, https://dashboard.tech.ec.europa.eu/qs_digit_dashboard_mt/public/sense/app/667e9fba-eea7-4d17-abf0-ef20f6994336/sheet/2f9f3ab7-09e9-4665-92d1-de9ead91fac7/state/analysis.

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2.3. The system of active labour market policies in Lithuania

This section provides an overview of the institutional and organisational set-up of ALMP provision and the ALMP composition in Lithuania, aiming to provide a general idea of how the ALMP system functions. The evaluation of specific ALMPs is presented in next chapters.

2.3.1. The institutional set-up of ALMP provision has improved

The current institutional set-up of ALMP provision in Lithuania is a result of a wider labour market reform introduced in July 2017. The introduction of the so-called "social model" aimed to strengthen flexicurity as well as ALMPs, copying some aspects of the Danish "golden triangle" (OECD, 2016[4]). The preparation of the reform set a good example how policy makers involved researchers tightly in the process and designed the new institutional set-up based on available evidence and good practices from other countries.

Regarding ALMPs, the new social model aimed to increase their effectiveness and accessibility. To achieve that, a number of changes were introduced in ALMP design that also meet well the labour market challenges identified in the previous section of this chapter:

- Targeting ALMPs more according to the individual characteristics of the jobseekers;
- Increasing the importance of training measures among ALMPs, as well as workplace-related components in training;
- Dropping ALMPs that were not considered effective in helping people to integrate into the primary labour market, such as job rotation and public works schemes. Public works schemes were entirely transferred to municipalities;
- Introducing possibilities for more varied support to jobseekers, such as supporting mobility.

With the 2017 reform, the organisational set-up of ALMP provision got centralised and was modernised. Instead of the previous decentralised Lithuanian Labour Exchange, ALMPs are implemented by the Lithuanian Employment Service (LES) under the Ministry of Social Security and Labour. In addition to fundamental changes in the structure and management of the LES, its operating model, processes and infrastructure have been continuously modernised over the past years (European Commission, 2019[5]).

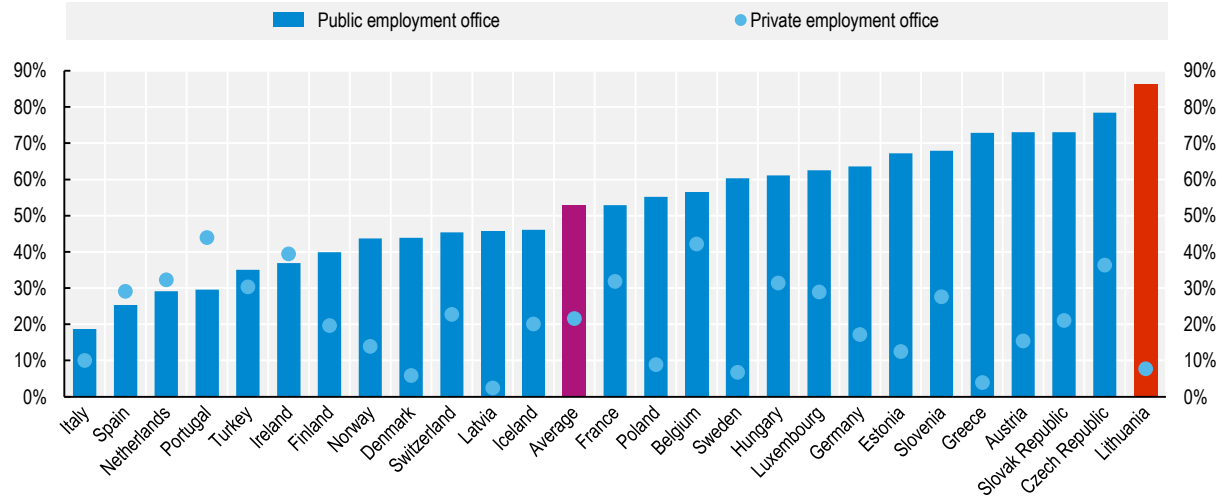
The introduction of the social model has strengthened the role of the social partners in ALMP design. The new model included the topic of ALMPs in the discussions of the Tripartite Council, which is a channel for the social partners to provide strategic advice for the LES and the Ministry of Social Security and Labour. The social partners discuss regularly in the Tripartite Council the organisation of ALMP design and provision, as well as the LES strategies (Lauringson and Lüske, 2021[6]). Although this committee has only an advisory role and the social partners are not involved as extensively as in the Danish system of ALMP provision (OECD, 2021[7]), the committee's work has been assessed positively by all stakeholders involved and is believed to bring ALMP provision closer to the actual needs of jobseekers and employers.

The involvement of the social partners in ALMP design is expected to improve the LES image, enabling to reach out to additional segments of jobseekers and employers. As the majority of registered jobseekers have no higher qualification (73.1% of registered jobseekers had up to secondary education in 2020), employers are currently reluctant to contact the LES to fill vacancies requiring higher qualification. As such, registered jobseekers have fewer opportunities to move to good jobs even after upskilling, and jobseekers with higher skills might be reluctant to contact the LES expecting there are no matching vacancies available for them. The LES has been actively aiming to engage with employers providing vacancies for high-skilled jobs over the past years also bilaterally in addition to discussions in the advisory committee. Furthermore, the LES has dedicated employers' counsellors since 2017 aiming to meet the employers' needs better (European Commission, 2017[8]). Nevertheless, while the image of the LES is getting better among employers, it has still scope for further improvements.

Jobseekers are motivated to contact and register with the LES, although their incentives to register might lie above all in becoming eligible for benefits and health insurance, rather than accessing ALMPs. Lithuania has one of the highest rates of jobseekers contacting the public employment service across the OECD countries, reaching 86.4% in 2020 (Figure 2.7). The stakeholders believe that eligibility for health insurance is the main reason behind that, although this might not fully explain that high rate as eligibility for health insurance has not induced the same rate of registration in other countries where similar conditions are applied. For example in Estonia where registration with the PES also provides health insurance coverage, only 67.2% of jobseekers were in contact with the public employment service in 2020, and even lower in the past years before the Work Ability Reform that made work ability allowance (one type of disability benefits) conditional on registering with the PES (OECD, 2021[9]). Furthermore, the stakeholders of the ALMP system (the authorities in charge of designing and implementing ALMPs as well as the social partners) in Lithuania tend to focus on the downside of this set-up – having additional clients who are not interested to get the LES support – rather than seeing it as an opportunity – being able to get in contact with and motivate people furthest from the labour market to engage and support them in job search. Furthermore, the question in the Labour Force Survey that these statistics are based on, specifically ask jobseekers about their contacts to public employment service to seek employment, suggesting the jobseekers in Lithuania might be more interested in the LES support and entering employment than the authorities think. Private employment services do not play a significant role currently as only few jobseekers contact them to seek employment.

Figure 2.7. A very high share of jobseekers contact the public employment service in Lithuania

Share of jobseekers who declare having contacted the public employment office or a private employment office to seek employment, 2020



Note: The purple bar represents the unweighted average of the 26 European countries shown.
Source: OECD calculations based on the EU Labour Force Survey dataset: Methods used for seeking work- Percentage of unemployed who declared having used a given method, by sex.

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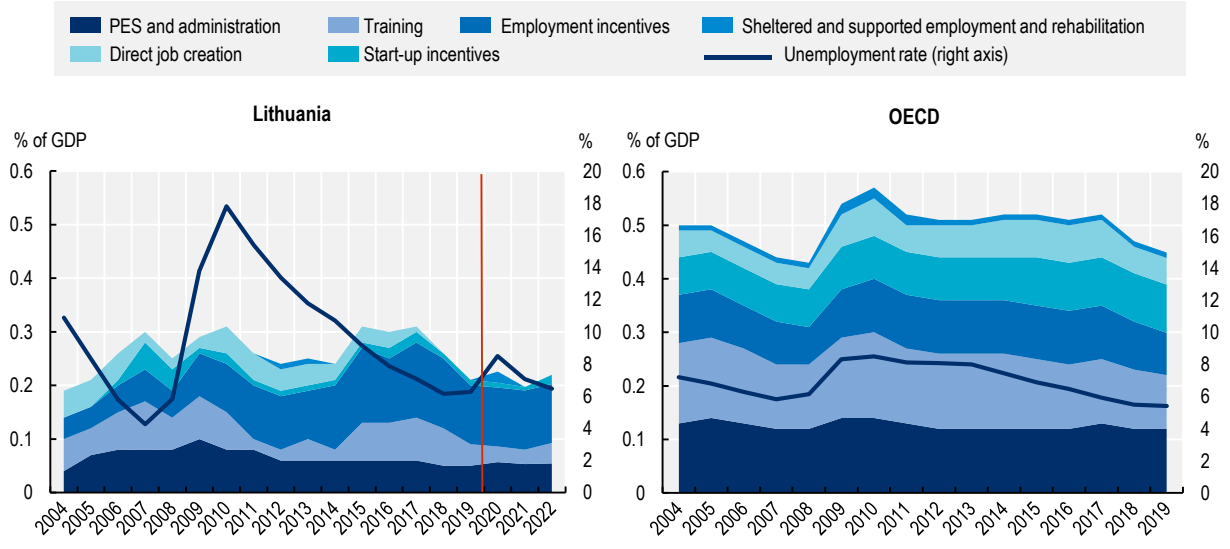
2.3.2. The package of ALMPs has been revised, but positive changes are not yet visible

The introduction of the so-called social model has not made ALMPs more accessible in Lithuania. In 2017-19, the drop in ALMP expenditures was in fact steeper than improvements in the labour market indicators (Figure 2.8). Furthermore, as ALMPs are mostly financed via European Social Fund (ESF) funding, the availability of ALMPs for jobseekers has fluctuated according to the ESF financing cycles rather than the needs of the labour market.

Lithuania spends less than half of the average of OECD countries on ALMPs (0.21% versus 0.45% of GDP in 2019). Allocations to the traditional package of ALMPs increased only marginally in 2020 (to 0.23% of GDP). Simultaneously, a massive funding was allocated to a job maintenance incentive (EUR 546 million, while the rest of the ALMP package received in total EUR 110 million), in addition to further allocations to income maintenance schemes (passive labour market policies). Lower allocations to ALMPs also mean lower accessibility for support for jobseekers and people at risk of job loss. In 2019, 1% of labour force participated in ALMPs in Lithuania, while this indicator stood at 5% in the OECD.

Figure 2.8. Lithuania invests little in active labour market policies relative to other OECD countries

Expenditures on active labour market policies and unemployment rate in Lithuania (2014-22) and OECD (2014-19)



PES: public employment service. GDP: gross domestic product.

Note: OECD average is an unweighted average. 2019 data for Australia and New Zealand regarding employment incentives refers to budget year July 2018 to June 2019 and not July 2019 to June 2020 unlike for the other ALMPs as this category was highly affected by the exceptional measures taken to address the challenges of COVID-19. Data for Lithuania in 2020-22 excludes the measure "Subsidies for wage after downtime" as an exceptional measure to tackle specific challenges caused by the COVID-19 outbreak and not comparable with other measures through the years (i.e. the figure depicts actual data for employment incentives without the exceptional measures in 2020, and an estimation of costs without the exceptional measure for 2021-22).

Source: *EC-OECD Labour Market Policies Database*, https://stats.oecd.org/Index.aspx?DataSetCode=LMPEXP; *OECD LFS by Sex and Age – Indicators Database*, http://stats.oecd.org//Index.aspx?QueryId=54218; *Economic Outlook No 110*, December 2021 https://stats.oecd.org/index.aspx?DataSetCode=EO; and the OECD Questionnaire on Policy Responses to the COVID-19 Crisis (responses from Lithuania).

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Regarding the composition of ALMP package, Lithuania is very much focused on employment incentives rather than tackling actively individual employment obstacles via training measures and PES support. While employment incentives can be effective to support particularly vulnerable groups and during

economic downturns (Card, Kluve and Weber, 2018[10]), Lithuania has spent somewhat more generously than the OECD average on these measures particularly during better labour market conditions. Furthermore, half of these expenditures cover wage subsidies for so-called social enterprises, which are not enterprises following necessarily a social objective, but are legally defined as enterprises that hire a certain level of people with disabilities. This scheme has been criticised by the stakeholders of the ALMP system as these enterprises might not support people with disabilities to get good jobs, but rather abuse the generous benefit scheme. Social enterprises have a tendency to hire the most employable from the overall target group, leaving those in need of support behind. The Lithuanian authorities have been revising the law regulating social enterprises already for a few years, aiming to prevent abuses and target the support better to those who need it (Pacifico et al., 2018[3]) with more significant changes to improve targeting implemented in 2020 (OECD, 2020[11]), but the challenges of the scheme have not yet been entirely solved. As of May 2022, the government has submitted to the parliament (Seimas) a draft amendment to the Law on Employment with the aim to improve labour market opportunities for people with disabilities, above all via support aiming at primary labour market integration rather than employment incentives for social enterprises. The next chapters of the current report evaluate the effectiveness of employment incentives that are targeted to the vulnerable groups to be integrated in the primary labour market and have thus higher potential to be effective.

Although the social model aimed to prioritise and improve training provision for jobseekers, expenditures on training relative to GDP have slightly decreased since 2017. Training measures have also been more extensively redesigned in the past three years, but not all of these schemes have started to function and taken up as anticipated. For example, an apprenticeship programme to target the needs of employers has not been as appealing for employers as expected. Not many companies have been prepared and willing to conduct work-based training, and rather opt for using employment subsidies to recover for some training on the job during the beginning of the employment period (i.e. employment subsidies are financially more attractive to the employers than the apprenticeship scheme). Also, targeting training to those with lower skills and introducing modular training has taken some time and efforts, as initially in 2019 modular training was introduced only to people who had higher education levels, forcing people with lower education to undertake only longer education programmes and not enabling them to integrate into the labour market quickly. Furthermore, COVID-19 outbreak hindered employers to commit to tripartite training agreements with the LES and jobseekers to provide jobs after successful completion of training. Digital training solutions during the pandemic were not well taken up by the jobseekers and training providers and trainings that used to be previously fully in classroom suffered in quality when conducted digitally, also due to gaps in digital skills. The next chapters of this report evaluate one of the key training programmes – the vocational training programme – provided by the LES and provide recommendations on scaling it up and redesigning to better meet the needs of the labour market as presented in the previous section.

Lithuania essentially does not allocate resources for sheltered and supported employment and rehabilitation, as well as direct job creation (public works) schemes. Indeed, evaluations in other countries have shown that public works do not have positive effects on the participants' labour market outcomes, or can even harm them (Card, Kluve and Weber, 2018[10]). Very general sheltered and supported employment schemes might not be effective measures either, although these could be a solution in case these are accompanied by a broader set of support together with training and job search assistance and when having integration into the primary labour market as the final objective (OECD, 2021[12]). Limiting the support to the most vulnerable groups currently through the wage subsidies for social enterprises is not likely addressing the pathways to labour market for the most vulnerable sufficiently well.

With the introduction of the social model in 2017, Lithuania abolished dedicated measures to encourage entrepreneurship as the existing measures were considered ineffective (yet, there were no counterfactual impact evaluations conducted about these specific measures (PPMI, 2015[13])). Nevertheless, taking up self-employment is currently supported via employment incentives (above all covering wage costs), possibilities to receive vocational training (similarly to other jobseekers), and basic training on business. In

2020, Lithuania introduced a temporary innovative measure for self-employed in response to COVID-19 to support them change their economic sector and so continue being employed during the pandemic (OECD, 2021[14]; European Commission, 2021[15]). Yet, systematic support to encourage entrepreneurship, develop business plans, and offer coaching and training during the initial phases of entrepreneurship is not provided. A more comprehensive business start-up support can be effective for some smaller groups of jobseekers, such as people living in areas where suitable vacancies for them are missing.

The social model also aimed to modernise and strengthen the LES, but this does not reflect in the level of expenditures on PES administration and the number of PES staff. A public employment service with more efficient and effective processes and administration and a modern infrastructure would need indeed less resources to achieve good results. Nevertheless, achieving a modernised employment service would need first investments, such as in the IT infrastructure and staff skills, as well as in building partnerships with employers and other stakeholders.

Sufficiency of resources for ALMPs in Lithuania is looking more promising for the few years ahead with the help of additional European Union funding (Resilience and Recovery Facility, ESF+). Additional allocations were made also in the 2021 and 2022 budgets for the LES and most of the ALMP measures, although barely keeping up with inflation and GDP growth. Nevertheless, the budget increases in 2022 have the potential to create an ALMP package that matches better the labour market needs, as the budget is most notably strengthened for the LES (10.3%), training (50.8%) and sheltered and supported employment and rehabilitation (174%, but starting from a very low level, so a significant difference from the OECD average level remains).

2.3.3. Lithuania needs to strengthen its system of ALMP monitoring and evaluation to attract sufficient and sustainable funding for ALMPS that are effective

Low spending on ALMPs in Lithuania is linked to the low priority of ALMPs for policy makers. As such, ALMPs receive only minor allocations from the national resources and are currently financed mostly using EU funding (i.e. national funding is above all filling the role of mandatory co-financing to be able to use EU funding). This financing mechanism makes the available resources fluctuate with the EU funding cycles, inflexible to take labour market changes into account quickly, and is not sustainable in the long run.

Fully fledged evidence-informed policy making needs to be developed in the system of ALMPs to ensure that policies that are effective in supporting jobseekers and employers achieve sustainable funding. Having credible evidence on the effectiveness of ALMPs and the LES would help the Ministry of Social Security and Labour and the LES communicate this evidence to the public and policy makers and attract the resources needed to provide ALMPs. Evidence-informed policy making needs to be systematic and involve the whole cycle of designing, monitoring and evaluation frameworks, generating knowledge, disseminating knowledge, adjusting policies based on evidence, as well as evaluating the knowledge generation process itself and adjusting the monitoring and evaluation framework accordingly. Knowledge generation needs to involve ex-ante evaluations in designing policies, monitoring frameworks to enable agile overviews on policy implementation, and ex-post process and impact evaluations to understand what works, for whom and how. Credibly evaluating the impact of policies allows identifying the need to adapt or terminate inefficient policies and boost the efficient ones. Process evaluations help to design more efficient policy implementation practices. Generating evidence and designing policies based on evidence is not important only regarding specific labour market services (such as the LES counselling services) or measures (training, employment incentives), but also across the tools, processes and approaches that the LES uses. The European Commission has highlighted the importance of such CIEs, including of measures implemented with ESF and ESF+ support, and the collection and use of administrative data (see Box 2.1).

Box 2.1. Useful resources from the OECD and the European Commission for countries building their capacity to conduct counterfactual impact evaluations of ALMPs

The OECD and the Directorate General for Employment, Social Affairs and Inclusion of the European Commission (EC, DG Employment), in co-operation with the Competence Centre on Microeconomic Evaluation (CC-ME) of the European Commission's Joint Research Centre (JRC), are working on a multi-year project that aims to help countries build or strengthen their analytical capacity and their use of linked administrative and survey data (OECD, 2022[16]). The current report presenting the impact evaluation results for vocational training and employment subsidies in Lithuania was prepared in the framework of this OECD-EC joint project.

The OECD-EC project consists of two phases running between 2019 and 2024. The main report of the first phase in 2019-20 finds that in the majority of the 34 EU and OECD countries studied, administrative data on registered unemployment and labour market policies can be linked with data on employment outcomes (OECD, 2020[17]). However, most countries still need to make significant investments in linking data from registers containing information on income, social assistance and incapacity benefits. In addition, the report provides practical advice on how to use impact evaluations to assess labour market policies, and illustrates this with several country examples and best practices.

The second phase of the project, which started at the end of 2020, includes country-specific work in at least five other EU and OECD countries besides Lithuania (Finland, Greece, Ireland and another country to be determined in 2022). In the same overall framework, the OECD has also just carried out an assessment of the system of ALMP impact evaluation in Canada, with funding provided by Employment and Social Development Canada, which provides many good practices regarding conducting high-quality CIEs by public administrations internally (OECD, 2022[18]). During 2023-24, the OECD-EC project will offer peer-learning opportunities via a technical workshop, a high-level policy exchange, as well as a synthesis report sharing lessons and good practices of the EU and OECD countries in conducting CIEs of ALMPs using linked administrative data and using the evidence for better policies.

The OECD-EC project builds on recent and ongoing related projects undertaken by the OECD and the EC, some of which can also be used as guidelines when conducting CIEs of ALMPs, particularly by national authorities. For example, the Centre for Research on Impact Evaluation (CRIE) of the CC-ME of the JRC has published a guideline for advanced CIE methods (European Commission, 2019[19]), as well as guidelines tailored to national authorities evaluating the impact of ESF (European Commission, Directorate-General for Employment, Social Affairs and Inclusion, 2020[20]; European Commission, 2020[21]). Furthermore, CRIE has supported many countries to conduct CIEs of ESF interventions via the Data Fitness Initiative for Counterfactual Impact Evaluation in 2016-18 (for example in Flanders (Belgium), Ireland, Latvia, Portugal and Umbria (Italy)), and its successor Quality Assurance Support for CIE launched in 2019 that promotes CIEs of ESF funded interventions and goes beyond the data related aspects. Furthermore, elements of monitoring and evaluation using administrative data are often parts of projects relating to ALMPs that the OECD implements with funding from and in co-operation with the European Commission's Directorate-General for Structural Reform. These support individual EU Member States to design and implement resilience-enhancing reforms, but provide learning opportunities also for other countries (see for example an Impact Evaluation Framework tailored for Spain (OECD, 2020[22]).

Source: European Commission (2020[23]), *Data Fitness Initiative for CIE*, https://knowledge4policy.ec.europa.eu/microeconomic-evaluation/data-fitness-initiative-cie_en; European Commission (2020[20]), *Counterfactual impact evaluation of European Social Fund interventions in practice: guidance document for managing authorities*, https://data.europa.eu/doi/10.2767/721497; European Commission (2020[21]), *How to use administrative data for European Social Funds counterfactual impact evaluations: a step-by-step guide for managing authorities*, https://data.europa.eu/doi/10.2767/721497; European Commission (2019[19]), *Advanced counterfactual evaluation methods:*

guidance document, https://data.europa.eu/doi/10.2767/464242; European Commission (2019[24]), *Quality Assurance Support (QAS) for CIE*, https://knowledge4policy.ec.europa.eu/microeconomic-evaluation/quality-assurance-support-qas-cie_en; European Commission, Joint Research Centre (2020[25]), *JobsPlus evaluation*, https://data.europa.eu/doi/10.2760/986782; European Commission, Joint Research Centre (2020[26]), *Active labour market policies in Flanders: evaluation of the ESF "Work Experience for Young Persons" programme*, https://data.europa.eu/doi/10.2760/623819; European Commission, Joint Research Centre (2020[27]), *The evaluation of the youth employment initiative in Portugal using counterfactual impact evaluation methods*, https://data.europa.eu/doi/10.2760/368100; European Commission, Joint Research Centre (2017[28]), *Counterfactual impact evaluation of "Work Experience Laureati e Laureate – WELL" (Work Experience for Graduates): the impact of an ESF-funded intervention in Umbria region*, https://data.europa.eu/doi/10.2760/01166; OECD (2022[18]), *Assessing Canada's system of impact evaluation of active labour market policies*, https://doi.org/10.1787/27dfbd5f-en. OECD (2022[16]), *OECD-EC project on policy impact evaluation through the use of linked administrative and survey data*, https://www.oecd.org/els/emp/impact-evaluation-linked-data.htm; OECD (2020[17]), *Impact evaluation of labour market policies through the use of linked administrative data*, https://www.oecd.org/els/emp/Impact_evaluation_of_LMP.pdf; OECD (2020[22]), *Impact Evaluations Framework for the Spanish Ministry of Labour and Social Economy and Ministry of Inclusion, Social Security and Migrations*, https://www.oecd.org/els/emp/Impact_Evaluations_Framework.pdf.

Lithuania has improved its monitoring and evaluation framework of ALMPs significantly in the context of the 2017 reform and the introduction of the social model. Since 2017, the LES has made continuous efforts to generate more knowledge on ALMPs, has gained access to more data from other administrative registers that support monitoring and evaluation, and is improving its IT infrastructure to support data management better more generally. Nevertheless, there is still a lot of scope for improvement as impact evaluations are not conducted systematically, and data exchange with other registers focuses on operational purposes and does not fully take into account the needs for data analytics. Furthermore, the IT infrastructure has no modern solutions to support data analytics well as the main IT systems do not include Data Warehouse or similar solutions, but only limited built-in queries directly to the operational database. There are also no dedicated solutions yet to facilitate data access for researchers, and such data exchanges are implemented via ad-hoc queries and file sharing solutions.

Most importantly, the introduction of the social model created a strong legal basis for ALMP monitoring and evaluation. The Law on Employment implemented in 2017 puts the task of generating and disseminating knowledge on labour market and ALMPs on the LES and states that the LES (and potentially other organisations implementing ALMPs) need to evaluate the effectiveness of ALMPs they provide following the procedures set by the government, as well as make the evaluation results public.

A decree by the Minister of Social Security and Labour (Lietuvos Respublikos socialinės apsaugos ir darbo ministerija, 2017[29]) and an order by the Director of the LES (Užimtumo tarnyba prie Lietuvos Respublikos socialinės apsaugos ir darbo ministerijos, 2020[30]) set the processes and methodology for ALMP evaluation activities, limiting these to monitoring the gross impact of key ALMPs. This methodology observes employment rates and rates of registered unemployment of participants in training programmes (in total six different policies) in intervals up to two years after participation, job maintenance rates of employment incentives (three different policies) up to four years of creating the jobs, and customer surveys (jobseekers and employers) to assess the LES service provision. These indicators are important to provide some knowledge on the labour market outcomes of ALMP participants, but do not provide credible evidence whether the labour market outcomes are affected by participation in ALMPs. The evidence on ALMP impact is only possible to generate using counterfactual impact evaluations (CIE) comparing the outcomes of ALMP participants to credibly comparable non-participation (see more details in Chapter 3). Furthermore, the current monitoring framework gives some indication on labour market integration and employment sustainability, but the results are not easily comparable over time as the labour market situation changes, and do not cover well job quality, such as the aspects of income and career progression.

Although the current methodology to evaluate the impact of ALMPs does not cover CIEs, the LES and the Ministry of Social Security and Labour are aiming to build the capacity to conduct CIEs of ALMPs systematically and have conducted a few CIEs in co-operation with research organisations in the past. These evaluations have most often covered training measures and employment incentives, as well as to

some extend other schemes (see the most recent evaluations by ESTEP (2019[31]; 2016[32]) and PPMI (2015[13]), the latter providing also an overview of previous evaluations). The more recent evaluations tend to find that employment subsidies have positive impact on the participants' labour market outcomes, while the effects of training programmes are more mixed. All of these reports call for more systematic impact evaluations, and further improvements in available data to enable improving the credibility of future impact evaluations. The evaluation of vocational training and employment subsidies presented in the next chapters of this report aim to support the LES and the Ministry of Social Security and Labour to start conducting similar CIEs regularly and across ALMPs.

References

Card, D., J. Kluve and A. Weber (2018), "What Works? A Meta Analysis of Recent Active Labor Market Program Evaluations", *Journal of the European Economic Association*, Vol. 16/3, pp. 894–931, https://doi.org/10.1093/jeea/jvx028. [10]

ESTEP (2019), *Aktyvios darbo rinkos politikos priemonių bei tarpininkavimo įdarbinant ir įdarbinimo tvarumo stebėsenos ir vertinimo sistemos sukūrimo paslaugos*. [31]

ESTEP (2016), *2007–2013 m. ES struktūrinės paramos poveikio užimtumui ir kitiems Lietuvos ūkio makroekonominiams rodikliams vertinimas*, https://www.esinvesticijos.lt/lt/dokumentai/2007-2013-m-es-strukturines-paramos-poveikio-uzimtumui-ir-kitiems-lietuvos-ukio-makroekonominiams-rodikliams-vertinimas. [32]

European Commission (2021), *Measure to support self-employment for those changing their economic activity*, https://ec.europa.eu/social/BlobServlet?docId=23517&langId=en. [15]

European Commission (2020), *Data Fitness Initiative for CIE*, https://knowledge4policy.ec.europa.eu/microeconomic-evaluation/data-fitness-initiative-cie_en (accessed on 8 June 2022). [23]

European Commission (2020), *How to use administrative data for European Social Funds counterfactual impact evaluations : a step-by-step guide for managing authorities*, Publications Office, https://data.europa.eu/doi/10.2767/721497 (accessed on 11 October 2020). [21]

European Commission (2019), *Advanced counterfactual evaluation methods : guidance document.*, Publications office, https://doi.org/10.2767/464242. [19]

European Commission (2019), *Quality Assurance Support (QAS) for CIE*, https://knowledge4policy.ec.europa.eu/microeconomic-evaluation/quality-assurance-support-qas-cie_en (accessed on 8 June 2022). [24]

European Commission (2019), *Success Story: Organisation development at the Lithuanian Employment Services*, https://ec.europa.eu/social/BlobServlet?docId=20750&langId=en. [5]

European Commission (2017), *Targeted service provision for employers – employer specialist counsellors*, https://ec.europa.eu/social/BlobServlet?docId=18822&langId=en. [8]

European Commission, Directorate-General for Employment, Social Affairs and Inclusion (2020), *Counterfactual impact evaluation of European Social Fund interventions in practice : guidance document for managing authorities*, Publications Office, https://data.europa.eu/doi/10.2767/55495. [20]

European Commission, Joint Research Centre (2020), *Active labour market policies in Flanders : evaluation of the ESF "Work Experience for Young Persons" programme*, Publications Office, https://doi.org/10.2760/623819. [26]

European Commission, Joint Research Centre (2020), *he evaluation of the youth employment initiative in Portugal using counterfactual impact evaluation methods*, Publications Office, https://doi.org/10.2760/368100. [27]

European Commission, Joint Research Centre (2020), *JobsPlus evaluation*, Publications Office, https://doi.org/10.2760/986782. [25]

European Commission, Joint Research Centre (2017), *Counterfactual impact evaluation of "Work Experience Laureati e Laureate – WELL" (Work Experience for Graduates) : the impact of an ESF-funded intervention in Umbria region*, Publications Office, https://doi.org/10.2760/01166. [28]

Lauringson, A. and M. Lüske (2021), "Institutional set-up of active labour market policy provision in OECD and EU countries: Organisational set-up, regulation and capacity"*, OECD Social, Employment and Migration Working Papers*, No. 262, OECD Publishing, Paris, https://doi.org/10.1787/9f2cbaa5-en. [6]

Lietuvos Respublikos socialinės apsaugos ir darbo ministerija (2017), *Dėl Darbo rinkos stebėsenos sąlygų ir tvarkos aprašo patvirtinimo*, https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/f4bb4fc0578611e78869ae36ddd5784f. [29]

OECD (2022), *Assessing Canada's System of Impact Evaluation of Active Labour Market Policies*, Connecting People with Jobs, OECD Publishing, Paris, https://doi.org/10.1787/27dfbd5f-en. [18]

OECD (2022), *Gender wage gap* (indicator), https://doi.org/10.1787/7cee77aa-en (accessed on 9 June 2022). [1]

OECD (2022), *OECD-EC project on policy impact evaluation through the use of linked administrative and survey data*, OECD, Paris, https://www.oecd.org/els/emp/impact-evaluation-linked-data.htm. [16]

OECD (2022), *Reaching Out and Activating Inactive and Unemployed Persons in Bulgaria*, Connecting People with Jobs, OECD Publishing, Paris, https://doi.org/10.1787/7b91154a-en. [2]

OECD (2021), "Building inclusive labour markets: Active labour market policies for the most vulnerable groups"*, OECD Policy Responses to Coronavirus (COVID-19)*, OECD Publishing, Paris, https://doi.org/10.1787/607662d9-en. [12]

OECD (2021), "Designing active labour market policies for the recovery"*, OECD Policy Responses to Coronavirus (COVID-19)*, OECD Publishing, Paris, https://doi.org/10.1787/79c833cf-en. [14]

OECD (2021), *Improving the Provision of Active Labour Market Policies in Estonia*, Connecting People with Jobs, OECD Publishing, Paris, https://doi.org/10.1787/31f72c5b-en. [9]

OECD (2021), *Institutional and regulatory set-up of active labour market policy provision in Denmark*, OECD, Paris, https://www.oecd.org/els/emp/Denmark_ALMP_Institutional_set-up.pdf. [7]

OECD (2020), *Impact evaluation of labour market policies through the use of linked administrative data*, OECD, Paris, https://www.oecd.org/els/emp/Impact_evaluation_of_LMP.pdf. [17]

OECD (2020), *Impact Evaluations Framework for the Spanish Ministry of Labour and Social Economy and Ministry of Inclusion, Social Security and Migrations*, https://www.oecd.org/els/emp/Impact_Evaluations_Framework.pdf. [22]

OECD (2020), *OECD Economic Surveys: Lithuania 2020*, OECD Publishing, Paris, https://doi.org/10.1787/62663b1d-en. [11]

OECD (2016), *Back to Work: Denmark. Improving the Re-employment Prospects of Displaced Workers*, OECD Publishing, Paris, https://doi.org/10.1787/9789264267503-en. [4]

Pacifico, D. et al. (2018), "Faces of Joblessness in Lithuania: A People-centred perspective on employment barriers and policies", *OECD Social, Employment and Migration Working Papers*, No. 205, OECD Publishing, Paris, https://doi.org/10.1787/3657b81e-en. [3]

PPMI (2015), *Final Report on Counterfactual Impact Evaluation of ESF Funded Active Labour Market Measures in Lithuania*, https://doi.org/10.13140/RG.2.2.12469.83689. [13]

Užimtumo tarnyba prie Lietuvos Respublikos socialinės apsaugos ir darbo ministerijos (2020), *Dėl darbo rinkos stebėsenos vykdymo*, https://www.e-tar.lt/portal/lt/legalAct/f234e860f80511eaa12ad7c04a383ca0. [30]

Note

[1] The gender wage gap is defined as the difference between median earnings of men and women relative to median earnings of men. Data refer to full-time employees on the one hand and to self-employed on the other.

3 Counterfactual impact evaluation approach and outcomes examined

This chapter discusses the key features of two active labour market measures: vocational training and employment subsidies offered to unemployed people by the public employment service of Lithuania. The chapter includes a description of the characteristics of the individuals and employers who participate in the programmes. It also describes the rich, individual level administrative data that provide the foundation for the empirical analysis and the econometric approach used in the counterfactual impact evaluation of these two measures in the following chapters of this review. In addition to outcomes commonly examined in impact evaluations of active labour market policies, such as employment probabilities, this chapter describes additional outcomes examined, most notably career progression. For the latter, the chapter outlines the construction of an occupational index calculated based on the observed wages of individuals by detailed occupational codes.

3.1. Introduction

As discussed in the previous chapter, Lithuania devotes a relatively limited amount of resources to active labour market policies (ALMPs): spending on ALMPs amounts to less than half of the OECD average and the share of its labour force participating in ALMPs is only one fifth of the OECD average. Only a minority of jobseekers enter ALMPs in Lithuania: in 2019, for example, less than 18% of jobseekers participated in any ALMP.[1] At the same time, Lithuania has relatively large disparities in employment rates across educational and geographic divides. In addition, the Lithuanian Employment Service (LES) also has established contacts with a relatively large share of the unemployed population, given that a relatively large share of jobseekers registers with them. These contrasting facts point to the need to carefully consider questions relating to the content and targeting of Lithuania's ALMPs.

To what extent are Lithuania's ALMPs successful in bringing jobseekers back into employment – and which programmes work best for whom? Which aspects of ALMPs work well and which ones could be improved? When faced with such questions, policy makers often turn to key performance indicators – job placement rates, participant satisfaction – or rely on feedback from staff or jobseekers. Both of these sources of information can play an important role in assessing the merits of a policy. For example, key performance indicators can be useful in understanding which ALMPs have the highest post-participation employment probabilities, for examining to what extent these have improved over time or for monitoring the performance of specific training providers in real-time. Similarly, subjective feedback can help provide a nuanced view of the benefits and drawbacks of a certain programme as well as concrete suggestions for improvements. At the same time, however, such approaches cannot provide a rigorous answer to the crucial question of what is the precise impact of a programme or policy – this requires accounting for what would have happened to individuals in the absence of the programme or policy. This is the motivation for conducting counterfactual impact evaluations (CIEs) such as the one outlined in this chapter.

The impact evaluation illustrated in this chapter focuses on two of Lithuania's main ALMPs: vocational training and employment subsidies for the unemployed. The two programmes provide, respectively, training lasting several months intended to fill gaps in jobseekers' skills, and subsidies of generally up to six months to offset part of the employers' wage costs associated with hiring workers from disadvantaged groups. In addition to analysing outcomes typically examined in CIEs of ALMPs, such as employment probability or earnings, the analysis examines another important question: the effect of participation in ALMPs on occupational mobility. These outcomes are tracked continuously over up to the three-year period starting with the beginning of the programme. The empirical analysis relies on rich and comprehensive data that allow for the wide set of outcomes to be analysed, as well as for accounting for a number of different jobseeker attributes. Several types of data are used in this evaluation: unemployment registry data, ALMP participation data, data on employment and earnings, as well as data on employer characteristics.

The chapter begins with a description of the two programmes analysed and the characteristics of the individuals and employers who participate in the programmes. It then also describes the rich, individual level administrative data that provide the foundation for the empirical analysis, as well as the econometric approach used in the counterfactual impact evaluation of these two measures in the following chapters of this review. The final sections describe the labour market outcomes examined in the impact evaluation. In addition to outcomes commonly examined in impact evaluations of active labour market policies, such as employment probabilities, this chapter describes additional outcomes examined, most notably career progression. For the latter, the chapter details the construction of an occupational index calculated based on the observed wages of individuals by detailed occupational codes.

3.2. Vocational training and employment subsidy programmes are two of the main ALMPs in Lithuania

The impact evaluation focuses on two of Lithuania's main active labour market programmes (ALMPs): vocational training for the unemployed and employment subsidies. These measures together account for roughly one-third of Lithuania's ALMP participant numbers and half of expenditures on ALMPs during the 2014-20 period, excluding the provision of public employment service (PES) counselling and job brokerage services as well as wage subsidy measures introduced during the COVID-19 crisis.

The key parameters of the two ALMPs are as follows:

- **Vocational training**. This is voucher-based training where jobseekers can select from accredited training providers. Anticipated duration is generally three months for formal training (but can be up to eight months) and one month for non-formal training (but can be up to three months). In practice, individuals generally enter training after being unemployed for three to five months for formal training and after two to three months for non-formal training, although individuals can enter training immediately after becoming unemployed. Average total subsidy (*subsidija* in Lithuanian) amounts during 2014-20 were EUR 1 865 for formal training (which generally leads to an accreditation or certificate), and EUR 1 148 for non-formal training. With the rare exception of very expensive training programmes, all training expenses are covered by the LES. Individuals can enter tripartite agreements with employers in advance of their training, whereby employers promise employment to individuals successfully completing their vocational training.
- **Employment subsidies**. The programme subsidises 50% of participant's wage costs (up to 75% for individuals with disabilities), with a ceiling amounting to twice the statutory minimum wage during the 2017-19 period and one and a half statutory minimum wages thereafter. The maximum programme duration is generally six months.[2] Individuals may enter the programme at any point in their unemployment spell, and the exact time of entry varies considerably in practice (the median unemployment duration at entry is five months). The average subsidy amount varied from EUR 1 004 in 2013 to roughly EUR 1 550 from 2016 onwards.

Additional statistics on the two programmes are provided in Table 3.1. Vocational training programmes tend to be shorter than employment subsidies, but they tend to be more expensive. Training entered with tripartite agreement with employers – a unique feature of the Lithuanian ALMPs described in greater detail below – tend to be the shortest and also least expensive.

Table 3.1. Length of participation and costs vary across programmes in Lithuania

Duration of programme participation in months and average cost in EUR

Programme	Distribution of duration						Average costs
	5th	25th	Median	75th	95th	Mean	
Vocational training	0.3	0.9	1.8	4.6	7.5	2.8	1 715
- of which, without tripartite agreement	0.5	1.1	2.8	5.1	7.6	3.2	1 901
- of which, with tripartite agreement	0.1	0.8	1.0	1.7	5.7	1.7	1 203
Employment subsidies	0.9	3.0	5.0	6.0	9.2	7.7	1 460

Note: Statistics are calculated for all entrants during the 2014-20 period. Programme costs are expressed in nominal amounts and include direct costs paid to the vocational training provider (in the case of vocational training) or the employer (in the case of employment subsidies).
Source: OECD calculations based on data from the Lithuanian Employment Service.

StatLink https://stat.link/gwx8eo

Vocational training programmes cover a multitude of different topics and vary considerably in terms of their length. During the 2014-20 period, jobseekers entered into 2001 different training programmes, with many of these having only a small number of participants. The most commonly entered training programme was a one-month training course for obtaining a commercial motor vehicle license. This programme accounted for slightly over 10% of all vocational training participants during this period. Examples of longer vocational training programmes include an eight-month training programme for chefs, a seven-month training programme for hairdressers and a seven-month training programme for plumbers. Note that these training programmes do not involve on-the-job training at specific employers – such training is offered via an apprenticeship programme, which was introduced in 2017. Vocational training includes both formal and non-formal training programmes. Formal training programmes are more likely to be – but not exclusively – aimed towards obtaining accreditation or a license during the course of the training.

Employers receiving employment subsidies are required to retain workers hired through the subsidy programme for at least six months after the end of the subsidy.[3] If they terminate the contract of a worker before this period, they are not eligible for receiving new employment subsidies for the following 12 months. Given that employment subsidies are six months in duration, this requirement effectively means that employers must retain workers for one year after they first hire them. While this may make them less attractive to employers, such stipulations may help narrow the scope for strategic behaviour from firms to exploit the subsidies (for a detailed analysis of this question, see Chapter 5). On the other hand, one feature that has made the employment subsidies more attractive to employers in recent years is the automated exchange of information on gross wages from administrative sources, which has lowered the reporting requirements of participating firms. Because employment subsidies are paid as a proportion of gross wages, this information is necessary for calculating the payments made to firms.

A notable feature of vocational training in Lithuania – and one that is analysed in this evaluation – is the possibility of having employers promise employment to individuals successfully completing their vocational training. Such tripartite agreements – which are entered into force between the jobseeker, the LES and the prospective employer – stipulate that after completing the vocational training (which is nevertheless financed by the LES), the future employer will employ a person with the acquired qualification or competence for at least six months after the training, and the vocational training participant will stay with the intended employer for at least six months. From the perspective of the jobseeker, such agreements provide an assurance that the time and effort devoted to the training will result in guaranteed employment, thus presumably offering an additional motivation to complete the training course. For individuals deciding on which training to undertake, it offers reassurance that they will not be subject to the potentially changing short-term needs of employers. From the perspective of the employer, the agreements provide a way to acquire workers with skills that it anticipates will be in demand, and are potentially helpful particularly in cases where labour with relevant skills is not locally available. But such planning from an employer also requires anticipating the level of product demand in the medium term, which can be difficult in periods of high uncertainty, such as that induced by the COVID-19 crisis.

Both participation and expenditures on the two ALMPs examined varied considerably over the period examined in the impact evaluation (Table 3.2). In terms of total number of participants, roughly one-fifth more individuals participated in vocational training than in employment subsidies; expenditures on vocational training were roughly two-fifths higher. From an evaluation perspective, the total number of participants in both programmes is large enough to permit a detailed evaluation. Individuals with tripartite agreements accounted for 26.5% of all vocational training participants during the period, although this share varied considerably over time. Individuals entered into vocational training or employment subsidies in 7.5% of unemployment spells during this period.

Table 3.2. Participation in vocational training and employment subsidy programmes in Lithuania varied considerably during the 2014-20 period

Programme	2014	2015	2016	2017	2018	2019	2020	Total
	Number of participants (thousands)							
Vocational training	5.8	19.1	17.2	21.4	16.6	8.2	5.4	93.8
-of which, individuals with tripartite agreements	3.7	9.0	3.2	2.9	2.3	2.4	1.4	24.9
Employment Subsidies	20.3	14.1	7.1	9.1	10.7	7.2	11.2	79.7
	Expenditures (millions of EUR)							
Vocational training	9.4	26.8	30.2	36.4	29.5	17.5	10.6	160.4
-of which, individuals with tripartite agreements	4.7	8.5	4.0	3.5	3.0	4.2	2.0	29.9
Employment Subsidies	25.4	17.6	10.5	13.9	16.9	11.1	19.9	115.4

Note: Participants and expenditures are calculated based on year of entry into programme. Expenditures are in nominal amounts.
Source: OECD calculations based on data from the Lithuanian Employment Service.

StatLink https://stat.link/li49sz

3.3. Counsellors' discretion plays a role in targeting ALMPs

Eligibility and need for different ALMPs, including vocational training and employment subsidies is established when the jobseeker and their LES counsellor first discuss and assess the jobseeker's employment opportunities and needs for support. Since the end of 2021, the counsellors are supported by a digital jobseeker profiling tool that uses statistical methods, machine learning and administrative data to predict jobseekers' probability of long-term unemployment and needs for support. Previously (during the period evaluated in this report), the LES profiling tool was based on 22 questions about employment opportunities, health issues, willingness to work and other topics that the counsellor asked from the jobseeker (generally indirectly to fully understand the circumstances). This profiling tool segmented jobseekers to three categories according to their distance to employment and five groups of support needs. The final decision on support needs is taken by the counsellor and the jobseeker in a mutual agreement, not necessarily fully adhering to the suggestions by the (current or previous) profiling tool, enabling them to take into account further individual circumstances of the jobseeker. Subsequently, an individual action plan is agreed between the counsellor and the jobseeker to set the pathway for employment establishing the responsibilities for both the LES and the jobseeker. Among other measures, the individual action plan can establish the necessity of acquiring a qualification or competency (and thus participation in vocational training) or eligibility for employment subsidies. The individual action plan is revisited during each counselling session and fully re-assessed after six months and subsequently every three months. As such, a need for an ALMP can be established later on and not necessarily during the first assessment of employment opportunities and needs for support.

In the case of employment subsidies, an individual then notes their eligibility for employment subsidies when applying to job vacancies. Furthermore, employers can note that they would like to hire an individual via the employment subsidies and request assistance from the LES; the decision of whom they hire is ultimately the decision of the employer, who can also specify that they would like to hire a certain individual.

In the case of vocational training, once the type of vocational training has been agreed upon by the jobseeker and LES counsellor, the vocational training provider is chosen by the jobseeker, possibly in conjunction with a future employer. Prior to the introduction of the voucher system in 2012, there were longer public tenders for the purchase of training services, with the procurement procedure for acquiring training providers generally taking three months (and longer in specific cases). The new system arguably enables training to better adapt to the changing skills demanded by employers compared to the previous system.

The Lithuanian Law on Employment specifies the following target groups of unemployed individuals that are to be the primary beneficiaries of ALMPs (Republic of Lithuania, 2016[1]):

- individuals without professional qualifications or education (or lacking ones recognised in Lithuania),
- long-term unemployed (defined as at least 12 months for those 25 years of age or older and six months otherwise),
- unemployed over 50 years of age,
- unemployed of 29 years or younger or without previous employment experience, and
- individuals with a disability.

Furthermore, guidelines specify which programmes should be preferentially applied to each of the specific groups (Ministry of Social Security and Labour, Lithuania, 2017[2]). These specify, for example, that workers with disabilities are to receive a wide array of support via training and subsidies relating to employment, including ones dedicated to supported employment and rehabilitation (which are not the subject of the impact evaluation in this report). For this reason, individuals with disabilities who have an assessed working capacity 25% or less are not included in the subsequent analysis. Among the variables coded in the data by LES counsellors, the highest shares of participants fulfil the age criteria for target groups (see Table 3.3 below).

Table 3.3. Age criteria in Lithuania are most prominent for participation in vocational training and employment subsidy programmes

Share of individuals participating in either the vocational training or employment subsidy programmes belonging to specific target groups

Target group	Share of vocational training participants fulfilling criterion	Share of employment subsidy participants fulfilling criterion
Persons up to 29 years of age	39.9	37.6
Persons over 50 years of age	23.3	39.5
Raising a child under the age of eight	11.8	10.0
Unskilled unemployed (individuals without professional qualifications or education recognised in Lithuania)	5.4	5.8
Working-age persons with a disability and a level of working capacity of 45-55%	2.8	4.3
Unemployed persons starting work for the first time after having acquired their current qualifications	2.8	1.9
Working-age persons with a disability and a level of working capacity of 30-40%	0.7	2.3
Other categories	0.0	1.5

Note: Categories are presented as coded in the LES database and statistics are calculated based on entrants during the 2014-20 period. Categories are not mutually exclusive.
Source: OECD calculations based on data from the Lithuanian Employment Service.

StatLink https://stat.link/al12uk

Taking into account the above guidelines, it is important to note that the law gives LES counsellors the right to exercise discretion in deciding whether to refer an individual to a specific measure. LES counsellors appear to exercise this discretion in practice. To the extent that these target groups can be accurately gleaned from the administrative data, a sizable share of individuals do not meet any of the above criteria in practice. In fact, for any given calendar year during the 2014-20 period, 5 to 19% of individuals entering either vocational training or subsidised employment did not meet any of these criteria. This fact informs the choice of the econometric procedure used, with comparisons made based on detailed information on individual's observed characteristics (for details on the methodology, see Section 3.6.

3.4. People closer to the labour market are more likely to get support, particularly vocational training

This section examines the characteristics of individuals and firms participating in vocational training and employment subsidies. The analysis across individuals focusses on differences across gender, age, duration of unemployment, education level and location. In order to provide a sense of the extent to which specific categories of individuals are likely to enter ALMPs, the characteristics of the ALMP participants are contrasted with the characteristics of all individuals who are registered as unemployed with LES, taking the averages of monthly unemployment stocks during the 2014-20 period. These comparisons are presented in Figure 3.1.

Men are disproportionally likely to enter the vocational training or employment subsidy programme, particularly vocational training without tripartite agreements. Men accounted for 78% of vocational training participants, even though men and women were roughly evenly represented amongst the registered unemployed during the 2014-20 period (their shares were 50.7% and 49.3%, respectively). Among training participants with tripartite agreements, their share was exceeding female participants less, at 55%. This may indicate that women are more likely to engage in vocational training if they are given a guarantee of employment upon the successful completion of their training. The gender disparities could also be influenced by the availability of courses as the most popular courses, like obtaining a licence to drive a commercial vehicle, have mostly male participants.

Jobseekers under the age of 30, particularly men, are disproportionally likely to enter vocational training or the employment subsidy programme. Women aged 30 or over, on the other hand, are disproportionally *less* likely to enter vocational training or the employment subsidy programme, with women over 50 over four times less likely to enter vocational training than their share of the unemployed would suggest (if individuals were to enter in proportion to their representation among the unemployed). The share of women over 50 entering training with tripartite agreements is considerably higher than the share entering without tripartite agreements. For men over 50, employment subsidies are disproportionally prevalent relative to their share of the unemployed. The participant statistics by age and gender also indicates that some creaming might be taking place regarding vocational training (i.e. those groups that already have a better access to the labour market receive additional support) as young and prime-age men are particularly likely to receive this measure.

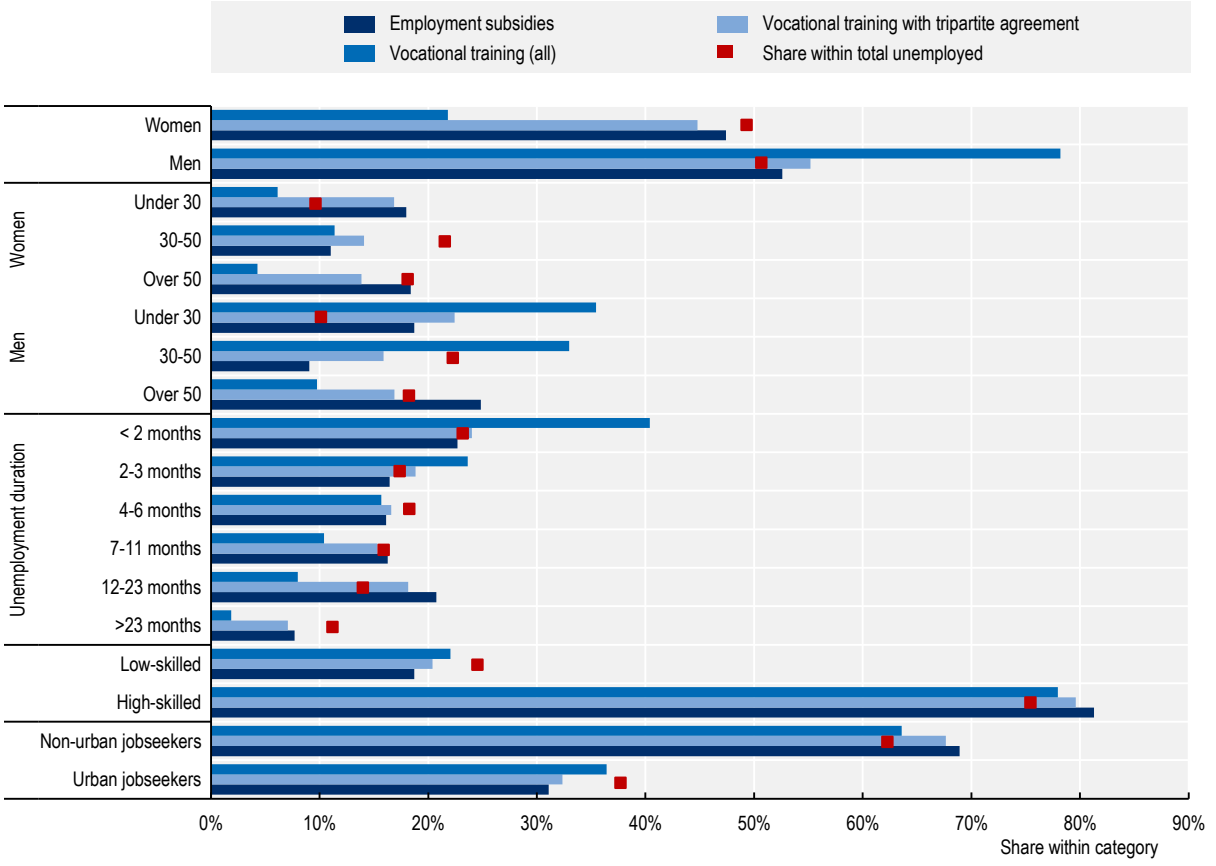
The pattern of participation in ALMPs by duration of unemployment is likely affected by the assessment process of jobseeker needs and the development of the individual action plans, which are conducted in the very beginning of the job search period. This approach leads to a “train-first” strategy for some group of jobseekers in Lithuania, but not necessarily those that benefit from the measure the most if the assessment is not sufficiently accurate and not frequently enough revisited. Earlier on in their unemployment spell, individuals who enter an ALMP are disproportionally likely to enter vocational training. For those unemployed seven months or more, individuals who enter one of the two ALMPs examined are more likely to enter into subsidised employment. This appears consistent with the guidelines on the application of ALMP measures (Ministry of Social Security and Labour, Lithuania, 2017[2]), which advocate for training as a priority intervention for most categories of jobseekers, although access to training is still very limited due to budget constraints.

Low-skilled jobseekers are disproportionally *less* likely to enter either of the two ALMPs studied.[4] This likely reflects the fact that people without any qualification were not eligible for training programmes for some periods within the timeframe analysed – rather, such individuals were to be referred to formal education programmes before potentially being eligible for training programmes targeted towards the unemployed. This approach again leads to creaming as upskilling is more likely provided to those with already higher qualification.

Interestingly, in terms of the urban location of jobseekers entering the ALMPs examined, individuals from non-urban areas are slightly *more* likely to participate.[5] This is the case also for vocational training, where consultations with stakeholders have indicated that finding a suitable training provider can be more of a challenge in practice than in the larger urban regions. While individuals outside large urban areas may thus have fewer options for vocational training, this apparently does not directly translate into lower rates of vocational training.

Figure 3.1 Groups such as younger jobseekers and men are disproportionally included in vocational training or employment subsidies

Share of individuals within each category, Lithuania



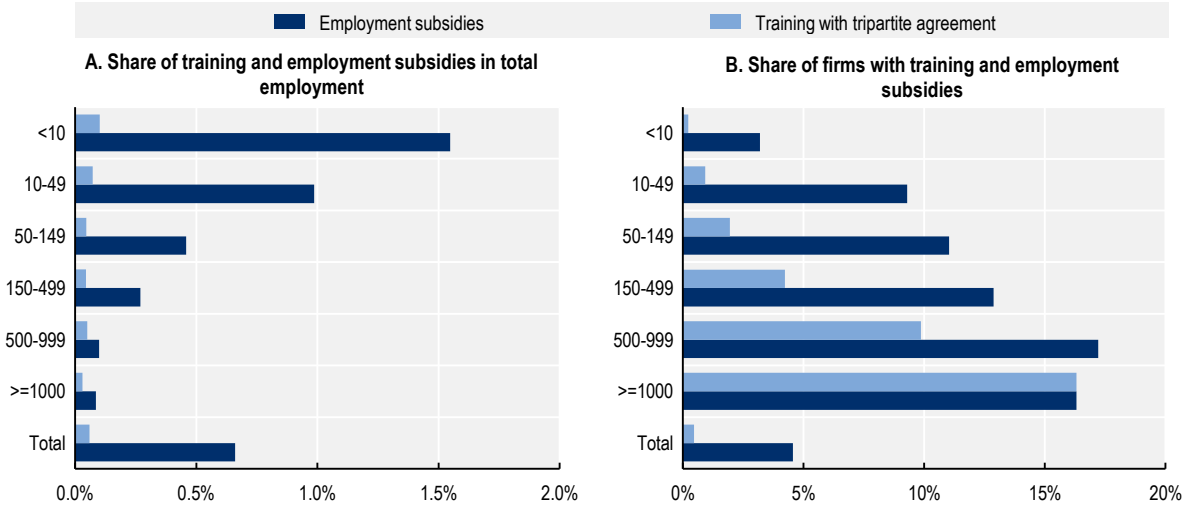
Note: Statistics for stocks of all unemployed are calculated based on averages of monthly statistics during the 2014-20 period. Participant numbers refer to totals during the 2014-20 period for individuals entering either vocational training (without or without tripartite agreements) or employment subsidies. Statistics for vocational training include individuals who enter training both with and without tripartite agreements.
Source: OECD calculations based on data from the Lithuanian Employment Service.

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While the discussion so far has focused on the characteristics of jobseekers engaging in ALMPs, another interesting aspect concerns the characteristics of the firms who entered tripartite contracts to hire participants of vocational training or hired jobseekers via employment subsidies. Figure 3.2 shows the distribution of firms within size categories for these two ALMPs. Expressed as a share of their total employment, small firms make disproportionately large use of employment subsidies and, to a much smaller extent, vocational training with a tripartite agreement. During the 2018-20 period, their annual intake of employment subsidy programme participants amounted to 1.5% of their average employment (note that given that such employment subsidies generally last for six months, the corresponding share of

employees for whom employment subsidies are being paid at any given point would amount to half of this amount). Smaller firms also accounted for the largest share of total participants: in terms of the total share among employment, firms with less than 50 employees employed 75% of employment subsidy participants and 58% of vocational training participants who entered into a tripartite agreement. However, this finding does not mean that larger firms are not making use of these ALMPs to hire workers. In fact, expressed as a share of firms who hired someone via the two ALMPs, the share is greater among larger firms. These two findings can be reconciled by the fact that there are a considerably larger number of small firms.

Figure 3.2. Incidence of vocational training with tripartite agreement and employment subsidies varies considerably across firm size categories in Lithuania

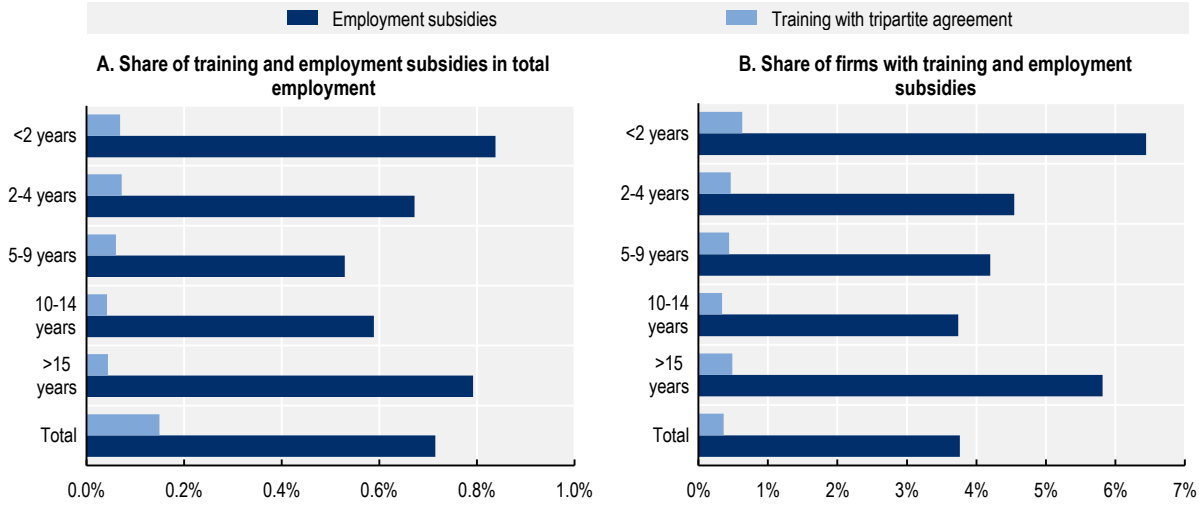


Note: Statistics refer to the 2018-20 period and do not include sole-proprietorships (which can also employ workers). Statistics on employment shares refer to annual averages during the 2018-20 period; statistics on share of firms relate to the share of firms having made use of the ALMP at any time during 2018-20.
Source: OECD calculations based on data from the Lithuanian Employment Service, Lithuanian State Social Insurance Fund Board and State Enterprise Centre of Registers data.

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Another interesting question concerns the age profile of firms engaging with ALMP participants. Start-up firms and young firms play an important role in job creation, even if they account for a minority of total employment: across the OECD, firms five years old or younger account for only 21% of total employment, but are responsible for 47% of job creation (OECD, 2016[3]). They are also generally less likely to be making a profit (Calvino, Criscuolo and Menon, 2016[4]) and thus have a stronger incentive to seek out employment subsidies. As illustrated in Figure 3.3, Panel A, the youngest firms indeed have the highest share of individuals who are employed via employment subsidies. However, the relationship appears V-shaped, with firms ten years or older disproportionally availing themselves of such employment subsidies. For training, the relationship is more straightforward: older firms tend to enter into tripartite agreements with a fewer share of the workers they employ. These findings are similar when examining the distribution across firms instead of the individuals they employ (Figure 3.3, Panel B).

Figure 3.3. Incidence of vocational training with tripartite agreement and employment subsidies varies slightly across firm age categories in Lithuania



Note: Statistics refer to the 2018-20 period and do not include sole-proprietorships. Statistics on employment shares refer to annual averages during the 2018-20 period; statistics on share of firms relate to the share of firms having made use of the ALMP at any time during 2018-20. Shares reported in both Panels are shares within the size category.
Source: OECD calculations based on data from the Lithuanian Employment Service), Lithuanian State Social Insurance Fund Board and State Enterprise Centre of Registers data.

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In terms of the sectors of economic activity of firms making use of the ALMPs examined, several sectors stand out in terms of their relative use. A disproportionally large share of employment in agricultural and manufacturing firms involves hiring unemployed individuals via employment subsidies – on average hiring workers accounting for 2.6% and 1.1% of their employment during the 2018-20 period. For vocational training with tripartite agreements, two sectors that stand out are agriculture as well as administrative and support service activities, both using such an arrangement with 0.2% of their employment during the 2018-20 period. In terms of absolute numbers of individuals hired with employment subsidies, the most prominent sectors are manufacturing as well as the wholesale and retail trade sectors. For vocational training with tripartite agreements, the transport sector stands out in terms of absolute number of participants.

Sectors making extensive use of vocational training through tripartite agreements may be disproportionally facing labour shortages, likely due to a combination of shortages of workers with adequate skills and possibly more challenging working conditions. As discussed in Chapter 4, while the presence of tripartite agreements in vocational training has a positive effect on employment outcomes, it also has a negative effect on occupational mobility. The reasons for making disproportionately extensive use of employment subsidies are likely varied and complex, but as discussed in Chapter 5, there is no evidence of them being used to displace existing workers.

3.5. The rich administrative data provide a detailed information on unemployed individuals and their labour market outcomes

Evaluating the effectiveness of ALMPs requires rich data with detailed information on jobseekers characteristics, their participation in ALMPs and their employment outcomes. The data used to conduct the evaluation in this report come from several sources, as outlined in Table 3.4, and span the period from

January 2014 to December 2020. Unique individual identifiers allow the data to be combined, providing a rich understanding of individuals' participation in ALMPs, their background characteristics – both from the LES registry – and their labour market outcomes and wages from a number of different sources. This is complemented with additional employment data, covering also those individuals who were not in unemployment, as well as with firm-level data containing information on the attributes of firms where individuals became employed.

Table 3.4. Several data sources are used in the evaluation

Data source	Information available	Periodicity	Sample	Coverage
Lithuanian Employment Service	Detailed background characteristics of registered unemployed, participation in ALMPs and unemployment benefits	Start and end dates of unemployment spells, participation in ALMPs and unemployment benefit receipt	Registered unemployed	2014-20
Board of the State Social Insurance Fund under the Ministry of Social Security and Labour (SODRA)	Employment outcomes and earnings	Start and end dates of employment spells	Individuals who were unemployed at some point during 2014-20	2014-20
Board of the State Social Insurance Fund under the Ministry of Social Security and Labour (SODRA)	Employment outcomes and earnings	Monthly	Individuals who were never unemployed at some point during 2014-20	2018-20
State Enterprise Centre of Registers (Register of Legal Entities)	Business registry data	Changes as reported by legal entities	Registered legal entities	2018-20

Note: Although the business registry data contains information also on sole proprietorships, the absence of unique firm identifiers in some of the other data means that they cannot be consistently included in the statistics.

The resulting database contains detailed information on the 947 185 unique individuals who were registered as unemployed at any point during the 2014-20 period. These individuals experienced 2.1 million distinct unemployment spells in total. It also contains detailed information on the 79 700 entries for employment subsidy programme participation and 93 800 entries into vocational training. Individuals entered into vocational training and/or employment subsidies in 7.5% of unemployment spells during this period. The data generally span the period from January 2014 to December 2020. Unique individual identifiers allow the data from the different sources to be combined.[6]

One potential problem often encountered in impact evaluations of ALMPs concerns the question of how to deal with multiple, sequential entries into ALMPs. In the presence of multiple interventions and possible overlap between different ALMPs, identifying the precise effects of one specific ALMP presents an important challenge. In the case of Lithuania, this is not a major concern: during the vast majority of unemployment spells (92.5%), individuals entered into only one ALMP during their entire unemployment spell. In the remaining 7.5% of cases, individuals entered either two or three ALMPs in total. Of the latter, a sizable proportion involved short ALMP durations (e.g. less than one month). For the purposes of the evaluation, we focus on the first ALMP entered during an unemployment spell.[7] The exception to this rule concerns the cases where individuals enter an ALMP for less than a month and enter another ALMP within the same month. In this case, we examine the effect of the ALMP which is of longer duration.

Despite the richness of the data on which this evaluation draws, two limitations relating to the data are notable. First, the employment data do not contain information on hours worked. This is worth bearing in mind when interpreting the results, particularly in terms of the outcomes relating to days worked and daily wages. For example, if participating in an ALMP increases the probability that an individual will become employed on a part-time instead of a full-time basis, this would produce a bias on the estimated results: actual hours worked would be lower than suggested by the observed days worked, whereas hourly wages

would be higher than suggested by the observed daily wages. In practice, this may not be a problem given the low prevalence of part-time work in Lithuania: in 2020, Lithuania's part-time employment rate of 5.5% was one of the lowest in the OECD, where it averaged 16.7% (OECD, 2022[5]). Second, data on training do not include information on the target occupations of the training. For this reason, examining whether individuals enter the occupations for which they underwent training is outside the scope of the analysis.

Additional questions related to data will be discussed in a technical report to be produced in addition to this review (OECD, forthcoming[6]). This report will discuss the data in more detail, identifying how the analysis could be enriched with additional databases and discussing ways to make better use of data in the future.

3.6. The impact evaluation methodology accounts for counterfactual outcomes

Assessing the impact of an ALMP requires comparing ALMP participants' labour market outcomes, such as employment or earnings, with the outcomes that would have occurred had they not participated in the ALMP. Because the latter, "counterfactual" outcomes cannot be observed, it is necessary to find some way of constructing them from the data. A simple way to do this would be to compare the outcomes of those individuals that participated in training (or other ALMP) and those that did not. However, as will be discussed in detail below, in the absence of random assignment in the programme, such groups are likely not comparable, and making simple such comparisons may result in selection bias which would not yield accurate estimates of the true effect of the programme.

In the case of ALMPs in Lithuania, several sources of selection bias may be present. For example, it may be the case that certain types of individuals (e.g. more motivated individuals) are more likely to participate in training and have better employment outcomes for reasons besides their participation in the training. Conversely, certain individuals who face additional barriers to employment – and therefore have worse employment outcomes – may be more likely to be directed towards ALMPs by caseworkers. Many of those who do not participate in an ALMP may not be included simply by virtue of the fact they find a job quickly (and exit unemployment) without support from the LES. This latter group of individuals may have better future employment outcomes than ALMP participants by construction: if they exit unemployment again quickly they have a good chance of keeping that job, and are much more likely to be employed in several years or months than if they had remained unemployed. Additionally, LES counsellors are less likely to view such individuals as someone needing the support of an ALMP such as training, given that doing so could mechanically extend their unemployment duration for the duration of a course.

To address such sources of bias, the approach in this report controls for differences in demographic characteristics (e.g. gender, education, age, etc.), observed skills and barriers to employment between ALMP participants and non-participants. Such an approach is then be used to produce an estimate of the "treatment effect" by comparing individuals that appear similar in terms of their observable characteristics. The outcomes of participants (the "treatment" or "intervention" group) are compared with a similar group of non-participants (the "control" or "comparison" group).

The econometric approach employs several techniques in order to ensure the comparability of the treatment and control groups and to provide unbiased results:

- **Only individuals with similar unemployment duration are compared with each other**. This compares the labour market outcomes of those who enter an ALMP in a given month with those who have not (yet) entered an ALMP at a similar unemployment duration. The application of this "dynamic selection-on-observables" methodology – initially adopted by Sianesi (2004[7]) – is explained in greater detail in Box 3.1.
- **Individuals are also compared with each other only if they have identical values of several additional attributes**. In addition to comparing individuals or similar unemployment duration,

comparison individuals by construction have the exact same characteristics along a number of additional dimensions: calendar month and year of entry into the programme, age group, and whether they are receiving unemployment benefits (i.e, individuals not receiving unemployment benefits are only compared with other individuals not receiving unemployment benefits).

- **A rich set of additional personal characteristics are used to identify individuals with similar probabilities of entering the ALMP studied**. Within the precise groups mentioned above, individuals are further matched with similar individuals based on an estimate of the probability that they enter into the ALMP studied. Such an approach – based on a so-called propensity score – is commonly used in the literature to tackle for the difficulty of otherwise accounting for a wide array of additional personal characteristics (Card, Kluve and Weber, 2018[8]). The propensity score is a measure of the probability of participating in the policy under analysis. The calculations of the propensity score take into account the following factors: (i) each individual's employment history (earnings, duration of employment), (ii) employment barriers (as identified and coded by LES counsellors), (iii) demographic characteristics (education, gender), (iv) skills (foreign language, ICT skills, etc.), and (v) municipality of residence. The definition of the age categories parallel the target groups for inclusion in the ALMPs described in Section 3.2. Details on these attributes will be presented in the accompanying technical report (OECD, forthcoming[6]).
- **The outcomes presented are measured relative to individual-specific pre-treatment outcomes**. Individuals participating in ALMPs at different times throughout their unemployment spells may have different unobservable characteristics – aspects that are important for their probability of entering employment but are not observed in the data. For this reason, the estimates presented in this impact analysis account for individual-specific factors by comparing differences in outcomes before and after ALMP participation for specific individuals, for both individuals in the treatment and control groups (the so-called "difference-in-difference" approach). This controls for an additional potential source of bias.

The choice of the research design is dictated by the relatively broad eligibility criteria of the Lithuanian ALMPs and the availability of rich administrative data. In the case of Lithuania, it is not possible to apply a research design that would exploit strict eligibility criteria, such as an age threshold. In such a research design, groups of individuals who are not eligible for a programme – for example, in the case of a programme targeted toward youth, because they have just crossed an age threshold – could serve as the natural basis for establishing what would have occurred to participants had they not participated (the so-called counterfactual outcomes). Instead, in the case of this evaluation, in the absence of a strict eligibility criteria based on a threshold, the research design makes use of the rich available administrative data to match individuals along a number of dimensions, including their unemployment duration at the precise calendar month when an individual enters an ALMP. Such an approach is often used in impact evaluations and was also employed in a recent OECD evaluation of ALMPs in Latvia (OECD, 2019[9]).

Box 3.1. Econometric approach: Dynamic selection-on-observables

When individuals begin ALMP measures (are "treated") at different times throughout their unemployment spells, selecting "dynamically" into such measures, the set of individuals who were *never* treated does not serve as a suitable comparison group for those who were treated. Individuals only become available for treatment if they stay in unemployment long enough. Conversely, one of the main reasons that some individuals do not get treated is because they are able to find jobs and exit unemployment quickly. This motivates an approach that does not simply compare the ever treated with the never treated, but rather compares those who begin treatment at a given point in their unemployment spell with those who have been unemployed for a similar duration but have not yet entered an ALMP. Note that individuals in both the treatment and control groups are potentially eligible to enter treatment, but individuals in the control group who are paired with individuals in the treatment group do not enter treatment in the same month as the individual entering treatment (although they may subsequently enter treatment). This ensures that the probability distribution of individuals subsequently finding a job or of later joining a programme is the same as the distribution for the similar treated individuals had they decided to wait longer as well. This "dynamic selection-on-observables" method was developed by Sianesi (2004[7]).

In this report, the dynamic selection-on-observables approach is implemented in conjunction with nearest neighbour propensity score matching. This entails the following:

1. Calculating propensity scores based on a rich set of covariates – each individual's employment history (earnings, duration of employment), employment barriers (as identified and coded by LES counsellors), demographic characteristics (education, gender), skills (foreign language, ICT skills, etc.), and municipality of residence. The scores are calculated separately for each combination of programme and calendar year.
2. Matching exactly on each pre-treatment duration (m, the amount of time between registration and the start of treatment), calendar month and year of entry into the programme, age group, and whether individuals are receiving unemployment benefits; in other words, grouping individuals with exactly the same values of characteristics.
3. Within the groups defined in the second step, conducting nearest neighbour matching – pairing individuals with similar propensity scores.
4. Estimating treatment effects separately for each time horizon of interest (t, the amount of time elapsed since the start of the ALMP measure, when the employment and earnings are measured). Denoting *potential* labour market outcomes (such as employment or earnings) for an individual (i) as Y_{imt}^{d}, where $d = 1$ under treatment and $d = 0$ otherwise, the average treatment effect on the treated ($D_{im} = 1$) for each t is then:

$$\gamma_t = E[Y_{imt}^{1} | D_{im} = 1] - E[Y_{imt}^{0} | D_{im} = 1]$$

The γ_ts are the key treatment effects reported for labour market outcomes in this analysis, looking at individuals every 3 months from month 3 to 36 after entering treatment (for individuals in the treatment group) or after being matched to an individual in the treatment group (for individuals not entering treatment). Given the exact matching on calendar month and year and the nearest neighbour matching, any time-specific effects are differenced out by construction.

A key identifying assumption in propensity score matching is that all outcome-relevant differences between programme participants and non-participants are captured in their observed characteristics. In other words, conditional on observed covariates, the selection into the treatment can be considered random (e.g. Imbens (2000[10])). If selection into programme is governed not only by observables but also by unobservable individual characteristics correlated with the potential outcomes, then propensity score matching cannot produce unbiased estimates of treatment effects. To address this issue, the evaluation

method in this report combines propensity score matching with a difference-in-differences approach (Heckman et al. (1998[11]); Smith and Todd (2005[12])). Intertemporal changes in outcomes between participants are compared to changes in outcomes for the comparison group, where changes are measured relative to a pre-programme benchmark period.

Given the large sample sizes involved in the analysis, with several thousand participants per year in each of the programmes analysed, the analysis use direct matching estimators. This has the benefit of exhibiting the smallest bias for all sample sizes, even though nearest neighbour matching has the drawback of higher variance estimates (Huber, Lechner and Wunsch, 2013[13]). With large sample sizes, the superior bias properties gain in importance given that the absolute difference in precision relative to more efficient estimators diminishes as the variances tend to zero asymptotically. The standard errors are estimated using the adjustment outlined by Abadie and Imbens (2016[14]), which take into account the fact that the propensity scores are also estimated.

Under this framework, the dynamic selection-on-observables approach can only be used to estimate the treatment effect of the first ALMP measure in which individuals participate. Everything that happens after starting participation in the first ALMP measure is effectively treated as part of individuals' outcomes, even if that entails not working due to further participations in ALMP measures.

3.7. A rich set of labour market outcomes are evaluated

CIEs of ALMPs typically examine outcomes such as the change in the probability of becoming employed for ALMP participants compared to similar non-participants. The effects of ALMPs on employment probability have been widely studied, with a meta-analysis by Card, Kluve and Weber (2018[8]) including employment probability estimates from 111 impact evaluations of ALMPs. While this outcome is certainly important given one ultimate aim of ALMPs is to help individuals become employed, the focus on this outcome may also be partly dictated by data availability: data on other outcomes is often more difficult to obtain.

In the case of Lithuania, the rich and comprehensive data available enable the analysis to track a wide set of outcomes in evaluating the programmes studied and over a relatively long period. The outcomes are tracked continuously over up to the three-year period starting with the beginning of the programme. Outcome values are calculated on a monthly basis and tracked over time relative to a reference month, which is defined either as the month when an individual enters an ALMP (for the treatment group) or that same calendar month for an individual in the control group who is matched to someone in the treatment group. Details on the calculations of these outcomes will be provided in a forthcoming technical report which is to accompany this review (OECD, forthcoming[6]).

The following outcomes are examined:

- Probability of entering employment. This probability is measured using a binary outcome variable which is equal to 1 if individual is employed at certain time, and equal to 0 otherwise.
- Cumulative employment duration. This measures the cumulative duration of all jobs held during the observation time, after the reference month.
- Wages. This is calculated as earnings per calendar day, i.e. monthly earnings divided by the number of days in the month during which an individual was employed in constant 2015 prices. Due to data limitations, it is not possible to calculate an hourly rate.
- Occupational mobility. The analysis maps the occupation of individuals entering employment onto an occupational index, which can be interpreted as a "job ladder". The construction of the index is detailed in Section 3.8.
- Cumulative earnings. This measures total earnings, gross of taxes and contributions, in constant 2015 prices, received in all jobs held during the observation time.

- Cumulative earnings net of subsidies. In order to assess the cost effectiveness of the studied ALMPs, the analysis also compares the benefits of each programme as expressed by cumulative earnings premium over the three year time horizon, gross of taxes and contributions, with the direct costs incurred by the programme. All amounts are in constant 2015 prices.

Including cumulative earnings net of subsidies as an individual labour market outcome warrants additional discussion. Most of the outcomes examined – such as employment probability or days worked – are directly relevant both for programme participants and for the policy makers designing and implementing the measures. Cumulative earnings net of subsidies, on the other hand, are relevant only to the policy maker given that the participant does not bear the direct training costs. However, similar to the measure of cumulative gross earnings, this outcome presents a measure of earnings that differs from the earnings net of taxes and contributions that an individual ultimately receives. Note that like the other outcomes, cumulative earnings net of subsidies are calculated at the level of individual participants. This is necessary because the precise subsidy amounts vary considerably across individuals. In the case of vocational training, the training costs depend on the duration and type of training offered. Employment subsidies are linked to the level of wages paid by the employer (subject to certain ceilings).

In addition to aggregate effects, results are presented across sub-groups of individuals and, in the case of vocational training, by selected programme attributes. The results examine sub-groups of workers based on their gender, age, education level, urban or rural location and unemployment duration. For the vocational training programmes, the results also examine the role of tripartite agreements, the aim of the training (qualifications and/or competencies), and across formal or non-formal training.

3.8. Looking beyond employment prospects to analyse occupational mobility

In addition to analysing outcomes typically examined in CIEs of ALMPs, such as employment probability or earnings, the work with Lithuania aims to address another important question: the effect of participation in ALMPs on occupational mobility. A large body of empirical evidence has documented the “scarring” effect of job loss, with measurable effects on wages that can persist long after an individual becomes re-employed (for example, Lachowska, Mas and Woodbury (2020[15])). Empirical evidence also shows that jobseekers exiting employment tend to disproportionally enter (or return to) low-skills occupations compared to the employed population (Bisello, Maccarrone and Fernández-Macías, 2020[16]). ALMPs may help counteract these effects, mitigating or conceivably even reversing the typically observed negative effects of job loss on an individual’s career trajectory. Training programmes may offer the opportunity to acquire skills or credentials necessary for employment in more high skills occupations. Employment subsidies may make employers more willing to hire a given jobseeker and possibly invest in on-the-job training.

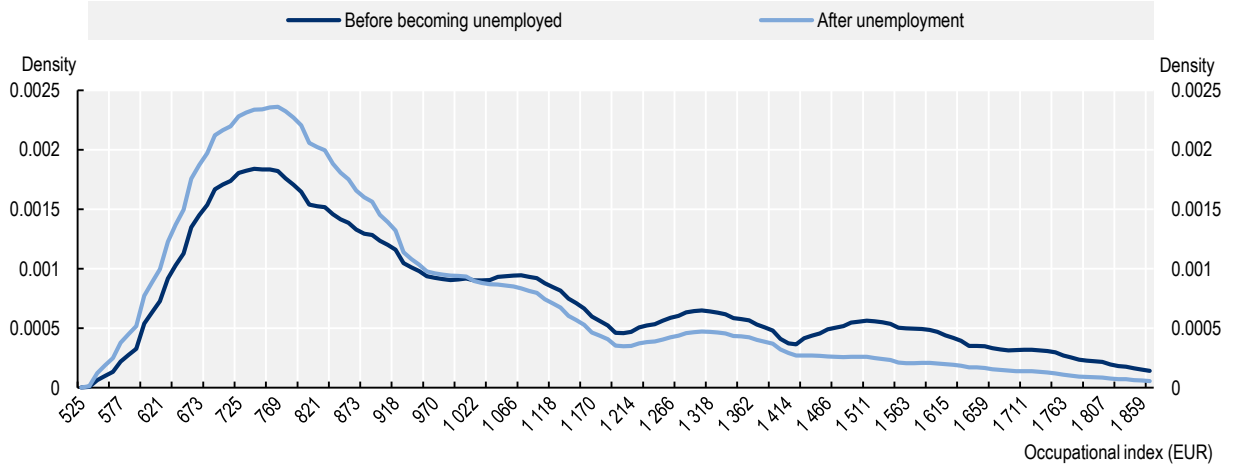
In order to provide a tractable measure of occupational mobility, the analysis relies on an occupational index, which is calculated from observed wages. Following the approach adopted by Laporšek et al. (2021[17]), a wage index is calculated for each detailed occupational code using data on the wages and employment of all employed individuals in Lithuania during the 2018-20 period.[8] This index maps each of the 440 distinct occupational codes observed in the data into an index that has an intuitive and practical interpretation: an occupation whose index value is one unit greater than another occupation’s index value has an average real monthly wage that is one euro greater. Furthermore, increases and decreases in the index can be interpreted, respectively, as positive and negative changes in an individual’s occupation: climbing up or down the occupational ladder.

The occupational index distribution for Lithuania shows that following unemployment, individuals who become re-employed disproportionally enter lower-ranked occupations (Figure 3.4). Following an unemployment spell, a larger share of individuals become employed in occupations whose mean monthly wages are below EUR 1 000; conversely, prior to becoming unemployed, a proportionally larger share of individuals were employed in higher ranked occupations. On average, individuals becoming re-employed

have an occupational index that is approximately EUR 100 lower, corresponding with a roughly 5 percentage point drop down the distribution of the occupational index.

Figure 3.4. Individuals who become re-employed after unemployment disproportionally enter lower-paid occupations

Occupational index distribution before and after unemployment in Lithuania



Note: The heights of the lines indicate the relative share of individuals in occupations whose average wages are on the horizontal axis. The distributions are calculated for all individuals who were registered as unemployed at some point during the 2014-20 period. Observations with index value above EUR 1 866 are excluded from the kernel density chart. The chart includes persons who were registered as unemployed during the 2014-20 period.
Source: OECD calculations based on data from the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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While a descriptive analysis of occupational index distributions as presented in Figure 3.4 is instructive for understanding the underlying data, it does not account for a multitude of possible underlying factors that could explain the differences in the distributions. For instance, differences in the occupational index distributions before and after unemployment may be subject to composition effects, with a subset of individuals more likely to become re-employed. To account for such factors, as outlined in Section 3.5 above, the impact evaluation results in the next chapters take into account counterfactual outcomes of participants had they not participated in the programmes.

References

A. Smith, J. and P. E. Todd (2005), "Does matching overcome LaLonde's critique of nonexperimental estimators?", *Journal of Econometrics*, Vol. 125/1-2, pp. 305-353, https://doi.org/10.1016/j.jeconom.2004.04.011. [12]

Abadie, A. and G. Imbens (2016), "Matching on the Estimated Propensity Score", *Econometrica*, Vol. 84/2, pp. 781-807, https://doi.org/10.3982/ecta11293. [14]

Bisello, M., V. Maccarrone and E. Fernández-Macías (2020), "Occupational mobility, employment transitions and job quality in Europe: The impact of the Great Recession", *Economic and Industrial Democracy*, p. 0143831X2093193, https://doi.org/10.1177/0143831x20931936. [16]

Calvino, F., C. Criscuolo and C. Menon (2016), "No Country for Young Firms?: Start-up Dynamics and National Policies", *OECD Science, Technology and Industry Policy Papers*, No. 29, OECD Publishing, Paris, https://doi.org/10.1787/5jm22p40c8mw-en. [4]

Card, D., J. Kluve and A. Weber (2018), "What Works? A Meta Analysis of Recent Active Labor Market Program Evaluations", *Journal of the European Economic Association*, Vol. 16/3, pp. 894–931, https://doi.org/10.1093/jeea/jvx028. [8]

European Commission (2022), *Databases and indicators - The LMP database*, Directorate General for Employment, Social Affairs & Inclusion, https://ec.europa.eu/social/main.jsp?catId=1143&intPageId=3227&langId=en. [18]

Heckman, J. et al. (1998), "Characterizing Selection Bias Using Experimental Data", *Econometrica*, Vol. 66/5, p. 1017, https://doi.org/10.2307/2999630. [11]

Huber, M., M. Lechner and C. Wunsch (2013), "The performance of estimators based on the propensity score", *Journal of Econometrics*, Vol. 175/1, pp. 1-21, https://doi.org/10.1016/j.jeconom.2012.11.006. [13]

Imbens, G. (2000), "The role of the propensity score in estimating dose-response functions", *Biometrika*, Vol. 87/3, pp. 706-710, https://doi.org/10.1093/biomet/87.3.706. [10]

Lachowska, M., A. Mas and S. Woodbury (2020), "Sources of Displaced Workers' Long-Term Earnings Losses", *American Economic Review*, Vol. 110/10, pp. 3231-3266, https://doi.org/10.1257/aer.20180652. [15]

Laporšek, S. et al. (2021), "Winners and losers after 25 years of transition: Decreasing wage inequality in Slovenia", *Economic Systems*, Vol. 45/2, p. 100856, https://doi.org/10.1016/j.ecosys.2021.100856. [17]

Ministry of Social Security and Labour, Lithuania (2017), *Įsakymas dėl užimtumo rėmimo priemonių įgyvendinimo sąlygų ir tvarkos aprašo patvirtinimo [Order on the approval of the conditions and procedure for the implementation of employment support measures]*. [2]

OECD (2022), *Part-time employment rate* (indicator), https://doi.org/10.1787/f2ad596c-en (accessed on 5 April 2022). [5]

OECD (2019), *Evaluating Latvia's Active Labour Market Policies*, Connecting People with Jobs, OECD Publishing, Paris, https://doi.org/10.1787/6037200a-en. [9]

OECD (2016), "No Country for Young Firms? Policy failures and regulations are a greater obstacle for start-ups", OECD, Paris, https://www.oecd.org/sti/ind/Policy-Note-No-Country-For-Young-Firms.pdf. [3]

OECD (forthcoming), "Technical report: Impact Evaluation of Vocational Training and Employment Subsidies for the Unemployed in Lithuania", OECD, Paris. [6]

Republic of Lithuania (2016), *Law on employment*, https://e-seimas.lrs.lt/portal/legalAct/en/TAD/5f0be3809c2011e68adcda1bb2f432d1. [1]

Sianesi, B. (2004), "An Evaluation of the Swedish System of Active Labor Market Programs in the 1990s", *Review of Economics and Statistics*, Vol. 86/1, pp. 133-155. [7]

Notes

[1] This share of registered unemployed is calculated based on the number of participants in any ALMP according to data from the European Commission's ALMP database (European Commission, 2022[18]) and the total number of individuals registered as unemployed at any point during 2019.

[2] For jobseekers with grave disabilities or working capacity up to 25%, the subsidy may be paid until the end of employment (indefinitely). For jobseekers with medium disabilities or working capacity between 30% to 40%, the subsidy may be paid up to 24 months. During the 2014-20 period, over 95% of individuals received the subsidies for six months or less.

[3] This requirement applies to no-fault dismissals. Separations are permissible in certain cases, e.g. at-fault dismissals due to gross negligence on the part of the worker.

[4] The "low-skills" category contains individuals with have completed up to a lower secondary education.

[5] Note that the urban category corresponds to the following municipalities where the city and the district are separate entities: Vilniaus, Kauno, Klaipėdos, Šiaulių and Panevėžio. The category "Urban" thus constitutes the largest five urban municipalities, while the category "non-urban" corresponds to areas that are not large urban municipalities.

[6] More information on the data used and how it was processed will be available in the technical report accompanying this publication (OECD, forthcoming[6]).

[7] For individuals entering multiple ALMPs during an unemployment spell, the first ALMP is typically much longer than the second one (spells with three or four ALMPs are extremely rare, occurring in less than 0.7% of unemployment spells). The average duration of the first ALMP entered amounted to 227 days compared to 87 for the second spell. This is largely because individuals entering a second ALMP typically enter a very short-term vocational training: on average, vocational training as the second ALMP lasted 27 days, compared to 97 days for vocational training entered as the first ALMP.

[8] The analysis uses 4-digit ISCO-08 codes and is calculated from real monthly wages at constant 2015 prices. Further restrictions are made in calculating the index, such as excluding individuals who are self-employed, individuals with earnings below the statutory minimum wage, and outliers with extremely high reported wages.

4 Evaluation of vocational training provided by the Lithuanian Public Employment Service

This chapter examines the effects of Lithuania's vocational training programmes for unemployed people on a rich set of labour market outcomes. In addition to outcomes typically examined in impact evaluations, such as employment probability and job duration, the analysis examines the effects of vocational training on wages, occupational mobility and earnings, including earnings net of the direct training costs. It also compares the results obtained by the counterfactual impact evaluation with those of similar studies, both for Lithuania and for other countries. The estimated effects are examined across sub-groups of people based on their age, gender, skill level and urban or rural location. The extent to which effects vary across different attributes of the vocational training programmes is also examined. The chapter concludes with an international comparison of the heterogeneous effects across sub-groups of individuals.

4.1. Introduction

As the previous chapters have discussed, vocational training is one of the key active labour market policies (ALMPs) used to connect unemployed people with jobs in Lithuania. Furthermore, vocational training has scope to scale up considering that Lithuania's expenditures on training for jobseekers is still low relative to the OECD average and that many jobseekers have low qualifications. By providing jobseekers with skills that are demanded in the labour market, they can help integrate individuals into the labour market and address shifts in the labour demand across occupations and sectors. Training jobseekers and people in risk of job loss is particularly important in the context of changing labour market needs that were accelerated during the COVID-19 pandemic and continue to be significant in the post-pandemic labour market (OECD, 2021[1]; 2021[2]). To support labour reallocation effectively, training needs to reach the people who need it and equip them with the skills necessary to gain access to good quality jobs. This chapter examines how effective Lithuania's vocational training has been in placing individuals into sustained employment, how it has affected their career prospects, and how the effects vary across individuals and the attributes of the vocational training programmes.

The estimation results show that vocational training generates positive and statistically significant effects on individuals' probability of becoming employed, with effects that moderate over time. The estimated effects compare favourably to other studies evaluating of ALMPs, including previous studies of vocational training in Lithuania. Furthermore, certain sub-groups of jobseeker especially benefit from occupational training – for example, individuals above the age of 50, particularly women.

The organisation of the chapter is as follows. The first section presents the overall results of vocational training on the key outcomes examined: employment probability and duration, wages, occupational mobility and earnings, including earnings net of the direct training costs. It also compares the results obtained by the counterfactual impact evaluation (CIE) with those of similar studies, both for Lithuania and for other countries. The second section compares the outcomes observed for vocational training across sub-groups of workers based on their age, gender, skill level and urban or rural location. This is followed by an examination of the extent to which effects vary across different attributes of the vocational training programmes. The chapter concludes with an international comparison of the heterogeneous effects across sub-groups of individuals.

4.2. The vocational training programme has a positive effect on most outcomes examined

The next sections describe the aggregate results for vocational training on selected labour market outcomes. The first section describes the results for Lithuania on the six labour market outcomes examined, while the following section compares the results on employment probability with results from other studies.

4.2.1. Vocational training has positive effects particularly in the short term, but also in the long term

The estimation results show that vocational training generates positive and statistically significant effects on individuals' probability of becoming employed, with effects that provide less of a boost over time (Figure 4.1, Panel A). The effects of training are initially modest but reach a peak effect at around nine months after beginning the training programme. At this point, individuals who participated in training (the treated group) were 20 percentage points more likely to be in employment than those who had not entered an ALMP in the first month of the observation period (the comparison group).[1] The initially lower effect magnitude reflects the so-called "lock-in" effects, which mean that individuals in training are generally

not engaging in intensive job search (they have less time for job search during training, as well as expect better job opportunities once the training is completed) and may not be willing to accept a job until they have concluded their training. After nine months, the effects of training diminish but remain positive through the three-year evaluation period, amounting to 4 percentage points at the end of the period.

Initially, training also has a slightly negative effect on number of days in employment, but the effect becomes positive already at six months (Figure 4.1, Panel B). The duration of the initial lock-in effect at the beginning corresponds to the roughly 4-month average duration of training. Over the longer term, the effect of vocational training amounts to approximately 75 days of additional employment.

The estimated effects of training on occupational mobility are found to be generally insignificant, with some estimates pointing to negative effects at longer time horizons (Figure 4.1, Panel C). The initially positive effect becomes negative from month 12 onward, with the average decrease in the point estimate of the index amounting to EUR 12 – meaning that those who became employed after training on average entered occupations that paid slightly less than those who had not engaged in training. The magnitudes of the effects in the index are not particularly large, amounting to roughly 1.1% of the index average. Taken with the previous results, however, they do indicate that even though participants are indeed more likely to be employed than non-participants they tend to enter into lower wage occupations.

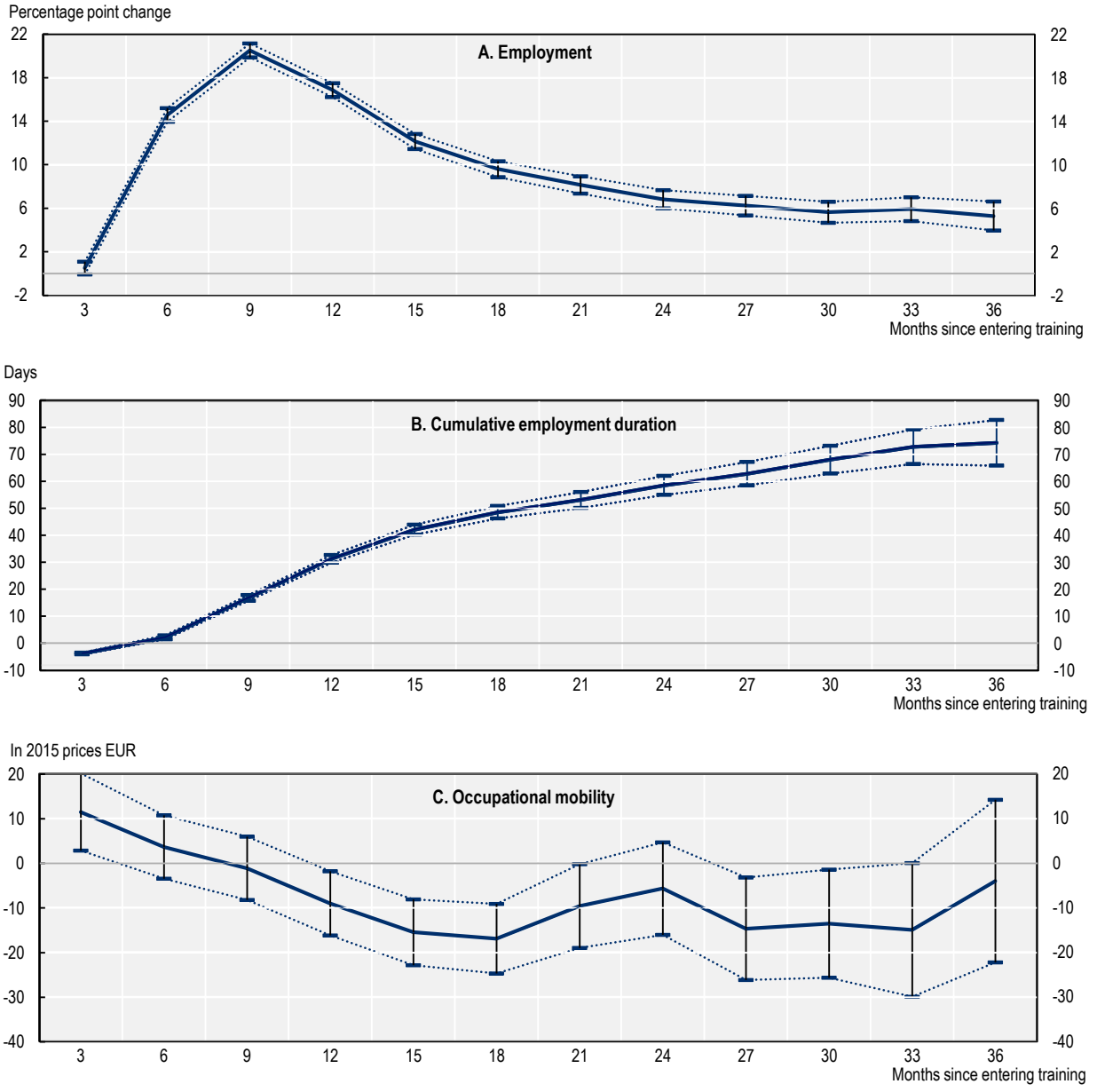
In line with the insignificant effect on occupational mobility, vocational training also does not have a discernible effect on wages (Figure 4.2, Panel A). This result does not mean that individuals are experiencing stagnant wages after becoming re-employed, but rather that there are not systematic differences between the treatment and control groups. In fact, results not reported here show that individuals becoming employed early on in the observation period[2] experience a small wage cut relative to their pre-unemployment wages. However, both groups recoup the wage gap one year into the observation period, when they earn a slightly higher wage than they had before becoming unemployed.

The effects of the examined ALMPs on additional earnings attributable to programme participation are positive (Figure 4.2, Panel B). The estimated cumulative earnings associated with participation in training is initially slightly negative, but becomes positive already at six months, by which time many participants have completed their training. This finding is consistent with the positive observed effects on employment and the relatively insignificant effects on wages. The fact that cumulative earnings increase over time also indicates that any negative effects on occupational mobility are relatively small in aggregate.

A comparison of the cumulative additional earnings attributable to training participation with the direct per-participant expenditures on the programmes shows that the programmes reach a breakeven point 33 months after beginning training (Figure 4.2, Panel C). The effects are estimated by subtracting average programme expenditures per participant from the estimated additional cumulative amount of earnings attributable to the programme participation. Note that these calculations take into account only a narrow set of costs and benefits – they do not, for example, account for the likely reduction in social transfers arising result from the increased employment rate, as well as the corresponding increase in income tax revenues. They also represent only direct, partial equilibrium effects – training may result in spill-over effects with positive externalities, with the benefits of having a more skilled workforce resulting in more opportunities for other workers.

Figure 4.1. Vocational training in Lithuania has positive effects on employment probability and duration, but insignificant or slightly negative effects on occupational mobility

Percentage point change in employment probability (Panel A), cumulative days of employment (Panel B), and change in occupational index for those who found a job (Panel C)

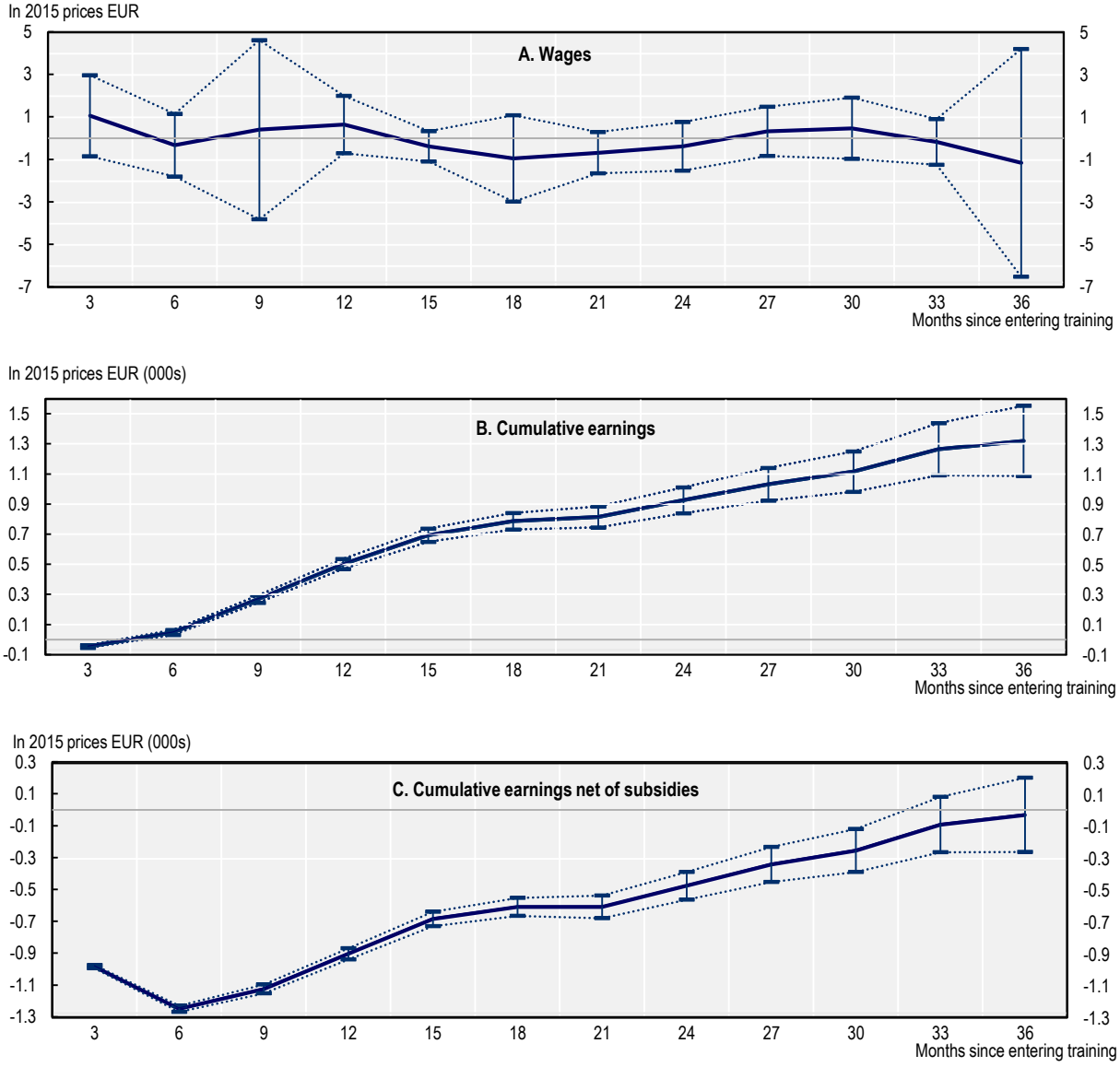


Note: The analysis presents nearest-neighbour propensity score matching results which matches individuals based on a number characteristics: duration of unemployment, age, gender, education, unemployment benefit receipt and level, language and other skills, municipality, employability and barriers to employment, as well as prior employment history and earnings. For every individual in the treatment group, the matching is conducted based on the values of these characteristics in the calendar month when the individual enters the programme. The control group is comprised of individuals with similar characteristics not entering ALMPs in that same calendar month. For paired individuals in the treatment and control groups, this calendar month is then the reference point after which outcomes are measured. The analysis is restricted to the region of common support. The standard errors are calculated based on the adjustment proposed by Abadie and Imbens (2016[3]). The confidence intervals are shown at the 5% level of significance and represented by the whiskers delimiting the dotted lines on the charts.
Source: OECD calculations based on the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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Figure 4.2. Vocational training has positive effects on cumulative earnings but insignificant effects on wages and cumulative earnings net of subsidies in the long term in Lithuania

Change in daily wages for those who found a job (Panel A), cumulative earnings (Panel B) and cumulative earnings net of subsidies (Panel C)



Note: The analysis presents nearest-neighbour propensity score matching results which matches individuals based on a number characteristics: duration of unemployment, age, gender, education, unemployment benefit receipt and level, language and other skills, municipality, employability and barriers to employment, as well as prior employment history and earnings. For every individual in the treatment group, the matching is conducted based on the values of these characteristics in the calendar month when the individual enters the programme. The control group is comprised of individuals with similar characteristics not entering ALMPs in that same calendar month. For paired individuals in the treatment and control groups, this calendar month is then the reference point after which outcomes are measured. The analysis is restricted to the region of common support. The standard errors are calculated based on the adjustment proposed by Abadie and Imbens (2016[3]). The confidence intervals are shown at the 5% level of significance and represented by the whiskers delimiting the dotted lines on the charts.
Source: OECD calculations based on the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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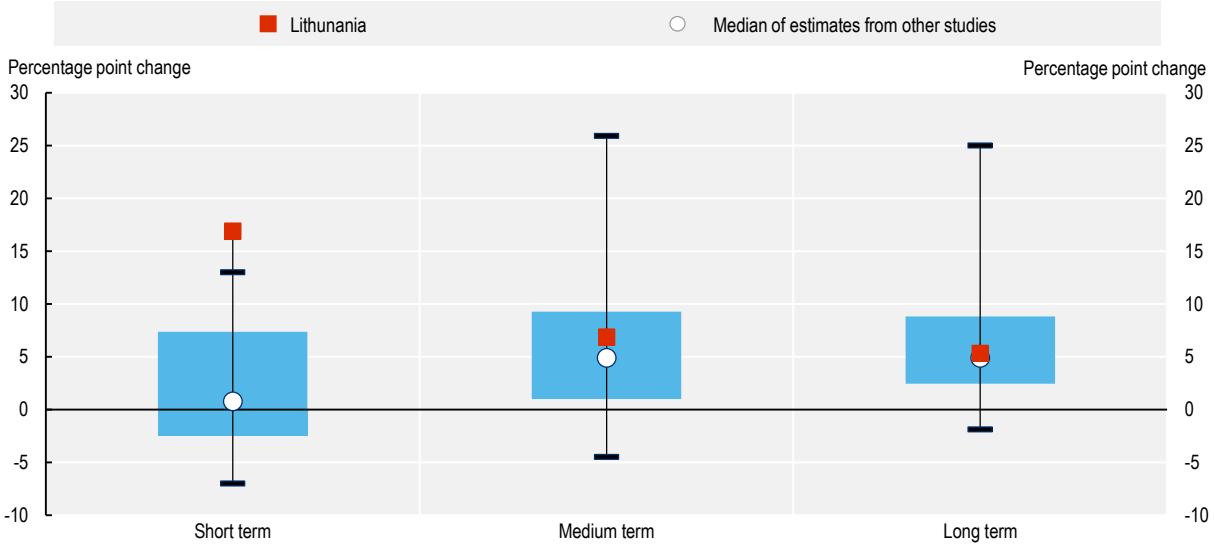
4.2.2. Lithuania's training programmes' effects on employment probability compare favourably with estimates from other studies, particularly in the short term

This section compares the results obtained by the CIE of the Lithuanian measures with those of similar studies, drawing on the meta-analysis conducted by Card, Kluve and Weber (2018[4]) and previous results for Lithuania, particularly from the most recent study conducted by ESTEP (2019[5]). The meta-analysis of international evaluations summarises estimates from over 200 recent impact evaluations of ALMPs. Of these, 51 impact evaluations contain point estimates for the employment effects of training programmes. Unfortunately, the meta-analysis does not provide estimates of the effects of other outcomes analysed for Lithuania in this chapter, such as earnings or days worked.

Compared with the results of the meta-analysis by Card, Kluve and Weber (2018[4]), the estimated effects of training for Lithuania are generally much larger in the short term, and in the lower range of estimates over longer time horizons (Figure 4.3). The estimated short-term effect for training in Lithuania, 16.9 percentage points, is considerably higher than the average of 2 percentage points found in the comparison studies. On the other hand, the long-term effect, of 5.3 percentage points, is slightly lower than the 6.7 percentage point average of comparison studies.

Figure 4.3. Compared to other studies, the estimated effects of vocational training on employment probability are particularly positive in the short term in Lithuania

Percentage point change in employment probability



Note: Short, medium and long-term effects respectively refer to effects up to one year, 1-2 years, and more than two years after programme completion. For Lithuania, results refer to 12, 24 and 36 months after beginning the programme. Point estimates are included in the chart even if they are statistically insignificant. The studies presented adopt various research designs and econometric techniques – the results for Lithuania use nearest-neighbour propensity score matching (for details, see Chapter 3).
Source: Card, D., Kluve, J. and Weber, A. (2018), "What Works? A Meta Analysis of Recent Active Labor Market Program Evaluations", https://doi.org/10.1093/jeea/jvx028 and OECD calculations based on data from the Lithuanian Employment Service.

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In comparing the above results, it is helpful to keep in mind that there is wide variation in the estimates underlying the studies included in the meta-analysis. For example, despite the meta-analysis finding that training has a positive effect on average, around 65% of the studies relating to training did not find *statistically significant* positive effects in the short term (within a year) in the Card, Kluve and Weber (2018[4]) analysis. Also, 46% of studies did not find that training had statistically significant positive effects

in the medium term (one to two years), and 33% did not find statistically significant positive effects in the long term (two or more years). The point estimate of the short-term effect for Lithuania in the current analysis is higher than most estimates in comparison studies, while the estimated long-term effect is close the median of estimates. The wide variability in the estimates may be attributable to a number of factors including the programme-specific parameters (eligibility criteria, content and implementation of the programmes), the activation requirements of the control group that form the basis for the counterfactual outcomes, and other institutional or time specific factors. While making precise assessments is impeded by these numerous potentially confounding factors, the positive results in Lithuania may indicate that the design and implementation of training is generally superior to that of other similar programmes in other countries.

The estimated effects in this chapter also compare favourably to previous impact evaluations of vocational training in Lithuania, which themselves found contrasting results. In particular, the estimated effects are considerably more positive than the results reported by PPMI (2015[6]) who examined vocational training in Lithuania for an older time period (around 2010) and found no positive impacts on employment, as well as negative effects on earnings. On the other hand, they are more comparable to the results found by ESTEP (2019[5]), who analysed the effects of individual entering vocational training in 2016. The latter found that the effect of participating in vocational training after (roughly) two years amounted to 13 additional days worked and EUR 276 additional earnings.

4.3. The impacts vary across sub-groups of unemployed people and depend on characteristics of training provided

Through a better understanding of what works for whom, examining how vocational training helps different sub-groups of individuals can help inform the targeting of the measures, but also potentially redesign the measure to increase its effectiveness for some of the groups or even think of alternative measures that could benefit these groups more. While the results presented in the previous section have focussed on the aggregate effects of the programmes, a crucial additional set of questions concerns their effects across different characteristics of the training programmes offered, as well as across subgroups of unemployed. The subsequent analysis provides separate estimates for the results along several dimensions relating to jobseeker characteristics: (i) gender, (ii) level of education, (iii) urban vs. non-urban residence and (vi) long-term unemployment status. The analysis also provides separate estimates based on the specific characteristics of the training. Specifically, the analysis focuses on differences related to (i) the presence of tripartite agreement with a prospective employer, (ii) whether the training involves acquiring qualifications, and (iii) formal vs. informal training (results reported in the Annex).

Among these, one dimension that stands out is the role of a tripartite training agreement, entered into between the PES, the jobseeker and an employer who commits to employing an individual upon completion of the training. As will be discussed in continuation, such agreements, which accounted for roughly a quarter of all training undertaken during the 2014-20 period, lead to highly superior outcomes compared to training undertaken without a prior agreement with an employer.

4.3.1. Certain sub-groups of jobseekers especially benefit from vocational training

Men tend to benefit slightly more from training than women according to a number of outcomes examined, particularly in terms of cumulative days in employment and cumulative earnings, but they experience a slightly worse medium-term effect on occupational mobility. Nevertheless, in terms of employment probabilities, the longer-term effects are relatively similar: 24 months after the start of training, the point estimates for the effects on women's and men's employment probabilities are 7.7 percentage points and 7.3 percentage points respectively (Annex Figure 4.A.1, Panel A). Earlier in the observation window, men experience slightly better effects on employment: six months after the start of training, men who began

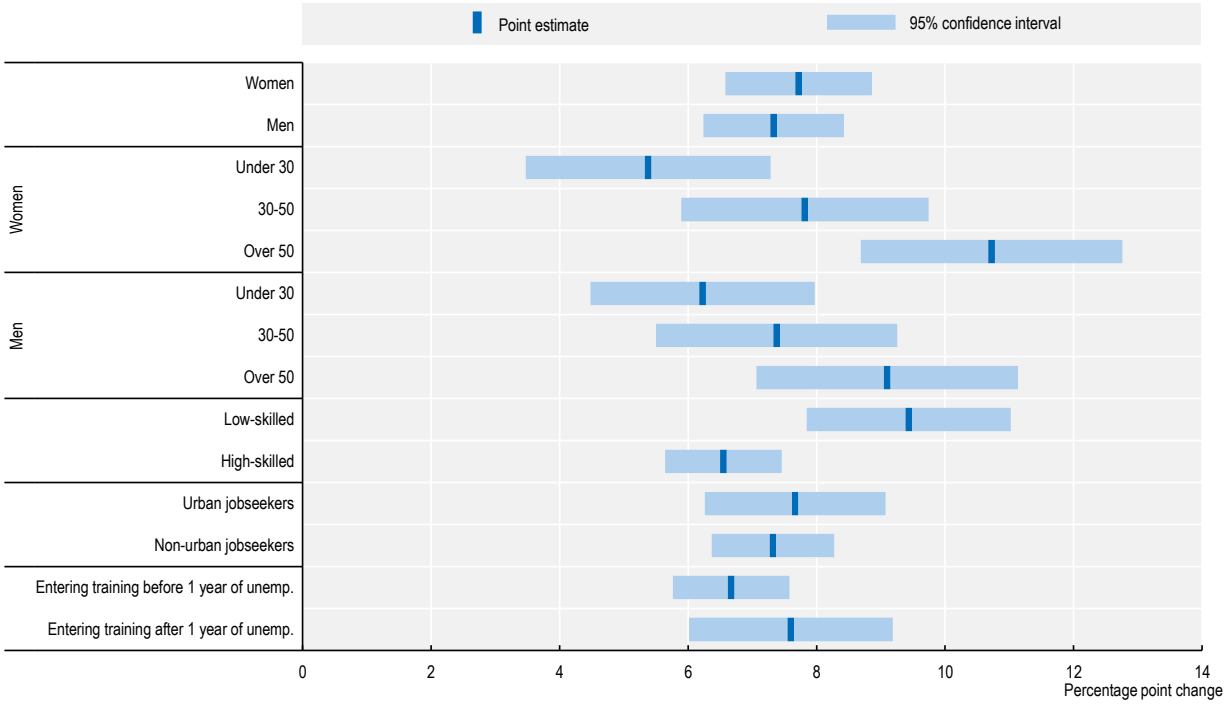
training experienced a 16.3 percentage point increase in the likelihood of employment, compared with a 13.1 percentage point increase for women. The increased employment probability translates into a greater number of cumulative days in employment: three years after beginning training, men undergoing training were employed for 89 days more in total, compared to 69 days for women (Annex Figure 4.A.1, Panel B). Interestingly, the qualitative effects of vocational training on occupational mobility by are the opposite of the effects on employment (Annex Figure 4.A.1, Panel C). Women experience a positive effect on occupational mobility in the short term (during the first 12 months after completing training), while men experience a negative effect for most of the periods observed after entering training.

At the same time, there are not any statistically significant effects of training on the daily wages of individuals who become employed (Annex Figure 4.A.2, Panel A), although most of the point estimates for men are positive. For men, the positive effects on days worked appear to offset any negative effects of occupational mobility: men experience a large, positive effect on cumulative earnings – including after accounting for the direct costs of the training. For women, on the other hand, the positive effect on earnings is not large enough to offset the direct costs of the training (Annex Figure 4.A.2, Panels B and C). Part of the reason might lie in the gender wage gap in Lithuania, which makes it more difficult for women to achieve a higher wage even after up-skilling. Decreasing the gender wage gap should be continuously addressed by wider employment and social policy responses in Lithuania.

In terms of age, the results of the current analysis show that while the employment effects are positive for all age groups, they are progressively stronger for older groups of jobseekers (Figure 4.4). This is particularly the case for women. For women under 30, 24 months after entering training, estimates of the employment effect amount to 5.4 percentage points; for women over 50, the estimated effect is almost twice as high (10.7 percentage points). Low-skilled jobseekers appear to benefit slightly more than high-skilled jobseekers, while there do not appear to be systematic differences between large urban areas and other areas. Long-term unemployed benefit slightly more from being included in training than short-term unemployed, consistent with some findings of the literature (Card, Kluve and Weber (2018[4]), see Section 4.3.2 for details).

Figure 4.4. The positive employment effects of vocational training in Lithuania are particularly strong for certain sub-groups such as individuals over 50 years of age

Percentage point change in employment probability at 24 months



Note: The analysis presents nearest-neighbour propensity score matching results which matches individuals based on a number characteristics: duration of unemployment, age, gender, education, unemployment benefit receipt and level, language and other skills, municipality, employability and barriers to employment, as well as prior employment history and earnings. For every individual in the treatment group, the matching is conducted based on the values of these characteristics in the calendar month when the individual enters the programme. The control group is comprised of individuals with similar characteristics not entering ALMPs in that same calendar month. For paired individuals in the treatment and control groups, this calendar month is then the reference point after which outcomes are measured. The analysis is restricted to the region of common support. The standard errors are calculated based on the adjustment proposed by Abadie and Imbens (2016[3]).
Source: OECD calculations based on the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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The effects of vocational training on occupational mobility vary considerably across sub-groups of jobseekers (Annex Figure 4.A.3). As noted above, at 24 months after beginning vocational training, the effects are statistically significantly negative for men, with slightly larger negative effects for older cohorts of workers. In contrast to the results for men, there is weak evidence that young women experience a boost to their occupational mobility (although the effect is marginally statistically insignificant at the 5% level). One jobseeker characteristic that appears to have an important effect relates to unemployment duration, with those who become employed after entering training at least one year following the onset of their unemployment entering occupations that on average pay EUR 49.5 less on a monthly basis. Note that this comparison does *not* reflect downward occupational mobility of long-term unemployed, as the evaluation approach explicitly accounts for duration of unemployment.[3] This represents a sizable negative effect on occupational mobility, amounting to 4.6% of the real average wage during this period. Jobseekers from non-urban areas also experience a negative effect on their occupational mobility, with those employed 24 months after beginning training entering occupations that pay EUR 20.6 less on a monthly basis.

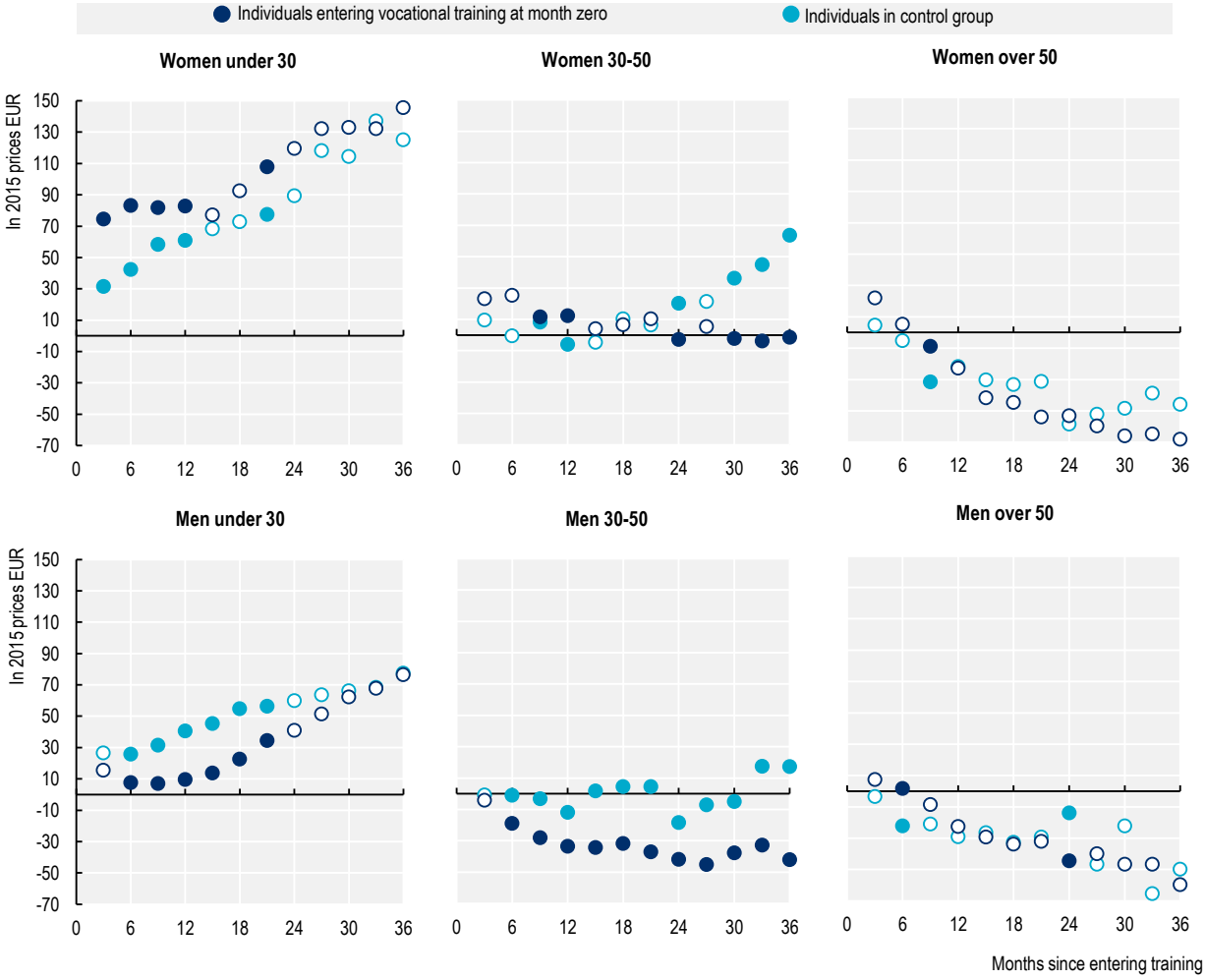
Comparing the above results on employment probability with those related to occupational mobility provides suggestive evidence that there exists a trade-off between the two. Annex Figure 4.A.4 plots estimates of the two effects across gender and age group, estimated 24 months after individuals have entered training. The group experiencing the largest effect on occupational mobility – women under the age of 30 – also experience the smallest boost to employment probability. While the converse is not true – women over 50 experienced the greatest boost to employment probability and a moderate, albeit insignificant, boost to occupational mobility – the general trend holds for the other groups plotted. The relationship depicted in this figure, together with the fact that similar relationships exist between other sub-groups of individuals in results not presented here, provide suggestive evidence that moving a greater share of individuals into employment via vocational training may partly come at the expense of occupational mobility. It could also be that the differences in the labour market outcomes and seeming trade-offs between employment probability and occupational mobility across the groups are caused by differences in the specific training needs. For example, older jobseekers might need upskilling to catch up with changing labour market needs and continue working in their previous occupation. Younger age groups might more often undergo training to change their occupation altogether.

Examining the evolution of the estimated occupational index by age and gender shows stark differences in the profiles by age groups and also helps explain the above effects. Figure 4.6 plots changes to the occupational index over time, taking the month when individuals enter vocational training as the reference point. In contrast to results presented elsewhere in the chapter, the results here depict gross outcomes and not net outcomes (also known as treatment effects), which can be calculated by subtracting the values for the control group from the values for the treatment group. To examine the effects of tripartite agreements, Annex Figure 4.A.6 plots a figure analogous to Figure 4.6 but including only individuals entering training through tripartite agreements. Several interesting findings emerge from these figures:

- For individuals under 30, both men and women generally experience increases in their occupational index over time – but young men entering vocational training have much lower occupational mobility than their peers, due largely to those entering training through tripartite agreements. While, women under 30 entering vocational training experience a positive boost to their occupational index in the first couple of months after entering training, men under 30 do not. Although men under 30 entering vocational training do experience growth in their occupational index, the magnitude of this increase is smaller than the increase in the occupational index experienced by their control group peers. However, men under 30 entering vocational training through tripartite agreements do *not* experience growth in their occupational index – the average values remains essentially unchanged during the entire period of observation. Over the longer time horizons, the negative effect associated with entering vocational training for individuals under 30 tends to disappear in general – but not for men under 30 who enter training through tripartite agreements. This may be attributable to the mix of the type of training taken up by individuals entering via tripartite agreements, with a large share focused on obtaining commercial drivers licenses.
- For individuals aged 30-50, individuals who entered vocational training and became employed experience either no change in their occupational index (in the case of women) or become employed in lower-ranked occupations (in the case of men). Here the effects of entering vocational training are more uniform regardless of whether or not the training is entered via tripartite agreements.
- For individuals aged over 50, both men and women who become re-employed tend to experience downward occupational mobility, regardless of participation in the vocational training programmes. Women, in particular, experience significant downward occupational mobility over time horizons longer than two years.

Figure 4.5. The effects of vocational training on occupational mobility varies across age groups in Lithuania

Change in occupational index for those who found a job (shaded circles denote statistically significant differences)



Note: The figure plots gross outcomes separately for individuals in the treatment and control groups. The analysis presents nearest-neighbour propensity score matching results which matches individuals based on a number characteristics: duration of unemployment, age, gender, education, unemployment benefit receipt and level, language and other skills, municipality, employability and barriers to employment, as well as prior employment history and earnings. For every individual in the treatment group, the matching is conducted based on the values of these characteristics in the calendar month when the individual enters the programme. The control group is comprised of individuals with similar characteristics not entering ALMPs in that same calendar month. For paired individuals in the treatment and control groups, this calendar month is then the reference point after which outcomes are measured. The analysis is restricted to the region of common support. The standard errors are calculated based on the adjustment proposed by Abadie and Imbens (2016[3]). Estimates are plotted relative to their values at month zero. Shaded circles denote point estimates for which differences between individuals in the treatment and control groups are statistically significant at the 5% level of significance.

Source: OECD calculations based on the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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The effects of vocational training on cumulative earnings additionally highlight how the effects vary across jobseeker characteristics (Annex Figure 4.A.5). The finding that men experience a considerably greater boost to earnings – outlined in the discussion above – is attributable to the small magnitude of the effect for women aged 50 or older. Women under 30 in fact experience a statistically insignificant effect on earnings, while the magnitude of the effect for women aged 30 to 50 is also relatively small, amounting to

EUR 492 in the first 24 months after entering vocational training. Finally, jobseekers in urban locations experience a larger boost in earnings compared to those in non-urban locations. This finding is in line with the previously discussed point that jobseekers in urban locations also experience more positive effects on occupational mobility and, to a lesser extent, employment probability.

The above results may also be partly explained by the types of training undergone by different sub-groups of individuals. Men disproportionally enter vocational training via tripartite agreements and enter into formal training programmes, which appear to confer certain advantages in terms of cumulative earnings and (short-term) employment prospects. At the same time, a large share of these training programmes for men involve programmes such as training to obtain a commercial drivers license, programmes which promise steady employment but offer poorer prospects for future occupational mobility.

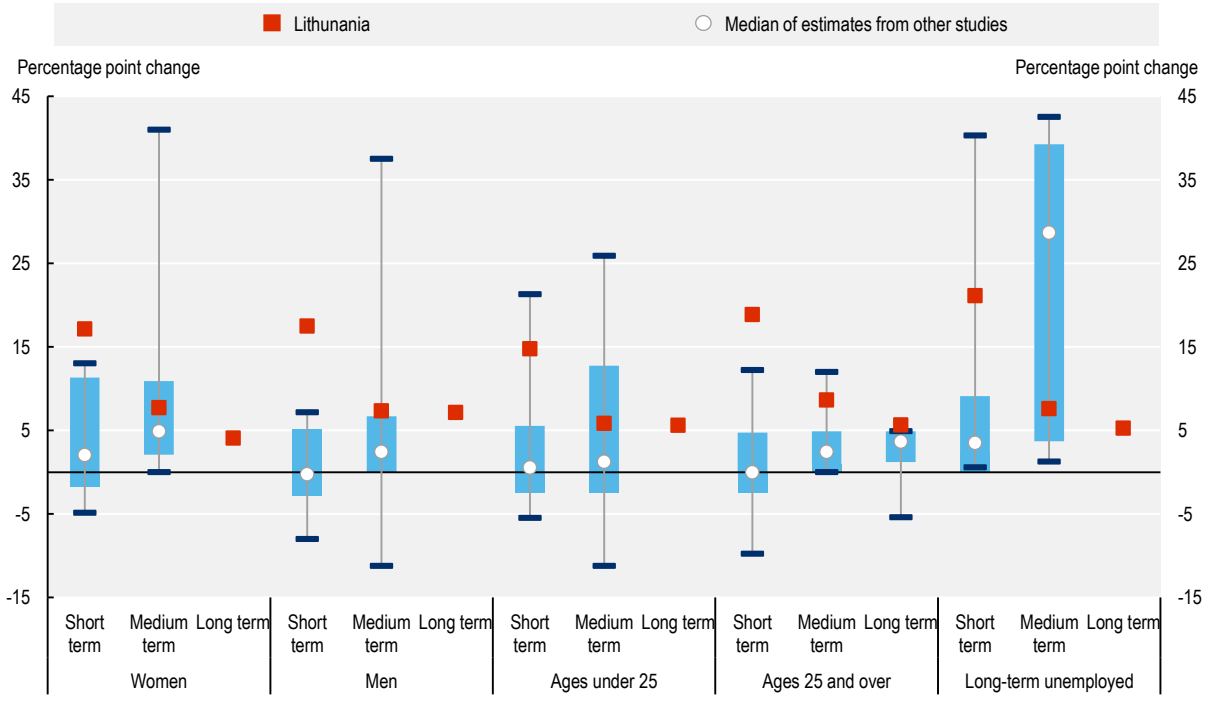
4.3.2. Heterogeneous effects from other studies show that outcomes can vary considerably across studies and sub-groups

While comparing aggregate effects across studies is *relatively* straightforward, relating the sub-group analysis with estimates found in the existing literature faces two main challenges. The first challenge relates to the design of the programmes analysed: most existing meta-analyses and systematic reviews consider how programme-level treatment effects differ, rather than considering whether treatment effects differ for certain sub-groups within in a given programme. For example, rather than comparing women and men treated by mixed-gender programmes, such meta-analyses and systematic reviews compare mixed-gender programmes, with all-women and all-men programmes. The second challenge relates to the definitions of the sub-groups, which do not necessarily match those used in this analysis. For example, the age threshold for younger individuals in most studies is 25 years of age, while the analysis for Lithuania uses a threshold at 29 years of age (with the latter having been chosen to reflect the age groups targeted by the measures in Lithuania).

Regardless of these challenges, some comparisons between the sub-group results in this chapter and the existing literature are possible: gender has been a special focus of many previous studies. There is some evidence suggesting that training may be more effective for women than men. Card, Kluve and Weber (2018[4]) find that female-only training programmes outperform male-only – with the differential effects present over both the short and medium term. Figure 4.6 juxtaposes the distribution of the point estimates in the Card, Kluve and Weber (2018[4]) study with those for Lithuania. Given that the point estimates for men and women are relatively similar in Lithuania at each of the time periods examined, in the context of the international comparison, training appears to give a relatively bigger relative boost to men in Lithuania. This may be partly attributable to higher rates of vocational training via tripartite agreements for men than women. However, it is worth noting that the finding relating to the effectiveness of training by gender is not replicated in another meta-analysis conducted by Vooren et al. (2018[7]). Similarly, looking at differential effects by gender *within* a collection of mixed-gender training programmes in developing countries, McKenzie (2017[8]) finds no clear evidence that women benefit more than men.

Figure 4.6. Training has heterogeneous effects on employment probability across sub-groups in both Lithuania and other countries

Percentage point change in employment probability



Note: Short, medium and long-term effects respectively refer to effects up to one year, 1-2 years, and more than two years after programme completion. For Lithuania, results refer to 12, 24 and 36 months after beginning the programme. Point estimates are included in the chart even if they are statistically insignificant. Age groups for Lithuania refer to "under 30" and "30 and over". Categories with less than five point estimates in the meta-analysis are omitted from the above figures. The studies presented adopt various research designs and econometric techniques – the results for Lithuania use nearest-neighbour propensity score matching (for details, see Chapter 3).
Source: Card, D., Kluve, J. and Weber, A. (2018), "What Works? A Meta Analysis of Recent Active Labor Market Program Evaluations", https://doi.org/10.1093/jeea/jvx028 and OECD calculations based on data from the Lithuanian Employment Service.

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In terms of international results on the effects of training by age, the evidence on whether younger or older workers benefit more is somewhat mixed. Card, Kluve and Weber (2018[4]) find that younger jobseekers receive a slightly greater boost from training in the short term than older workers, while both groups fare similarly in the medium term. Comparing the point estimates of these results with the ones obtained in this analysis for Lithuania (Figure 4.6), the Lithuanian programmes show a bigger boost in employment probability particularly for older and to some degree young workers than most comparable studies. In another meta-analysis examining studies from numerous countries but with a strong focus on Germany, Vooren et al. (2018[7]) find that the maximum age of programme participants has no impact on ALMP measures' effectiveness.

A final aspect that can be compared with other studies relates to how long individuals have been unemployed when they enter a training programme. The meta-analysis conducted by Card, Kluve and Weber (2018[4]) finds that the impacts are larger for those programmes that explicitly target individuals in long-term unemployment – those who have been unemployed for over a year. Although the estimates from the international comparison are based on programme designed exclusively for either younger or older workers (whereas the findings for Lithuania are based on individual-specific effects), tentatively, their findings suggest that targeting the content of the training for long-term unemployed individuals (even after

assignment to a training programme) may boost impact. In Lithuania, the vocational training programme is not explicitly targeted towards individuals who have been unemployed for over a year – instead, the estimates focus simply on those who entered a vocational training programme after having been unemployed for over a year. Comparing the two sets of results (Figure 4.6), the short-term effects of training in Lithuania are estimated to be higher than six out of seven comparable estimates in other studies, while the medium term estimates are higher than three out of eight comparable estimates. Estimates for the long-term effects are not plotted given the paucity of studies producing such estimates in the literature.

4.3.3. Examining the effects of training across vocational training programme parameters shows that tripartite agreements play an especially important role

One of the unique features of vocational training programmes in Lithuania is the possibility of having the employer commit to hiring a specific worker who successfully completes a vocational training programme for at least six months. The counterfactual impact analysis shows that signing such a tripartite agreement with an employer in advance of receiving the training boosts the observed employment effects of the training considerably. The presence of such a tripartite agreement – entered into force between the jobseeker, the LES and the employer – results in an 11.5 percentage point increase in employment probability 24 months after entering training, compared to a 6.3 percentage point effect among those who did not have such an agreement as part of their training (Annex Figure 4.A.7, Panel A). In the short term, the differences in the effects are even more pronounced: six months after entering training, individuals with tripartite agreements experienced a 28.3 percentage point increase in employment probability, compared to 11 percentage points for those entering training without a tripartite agreement. This finding is not surprising given that both the employer and the worker are contractually obliged to maintain the employment contract for at least six months after the training has concluded. Nevertheless, the point estimates associated with having a tripartite agreement remain consistently higher throughout the period observed, although the differences are not as large after the first 12 months, averaging 5 percentage points in the ensuing period. Given that training programmes are not longer than 12 months (with less than 5% between 9 and 12 months in duration), any effects after 18 months reflect employment which is not bound by contractual obligations arising from the tripartite agreements.

The positive effects of vocational training with tripartite agreements may have several explanations. Such agreements may have a positive effect both on jobseekers – who may be more engaged in their training and better motivated to complete it given the promise of employment – as well as having a positive effect on their subsequent employment prospects, with training better reflecting the (short-term) needs of employers. In fact, although the vast majority of vocational training participants complete their training, jobseekers with tripartite training agreements are less than half as likely to drop out of their training programmes before completing them compared to individuals without such agreements (the non-completion rates during 2014-20 averaged 3.9% and 1.7%, respectively).

Tripartite agreements also have a positive effect on cumulative employment duration. Three years after beginning training, individuals with tripartite agreement are employed for 145 days more than people not receiving training, compared to 66 extra days of employment for those undergoing training without the tripartite agreement (Annex Figure 4.A.7, Panel B). As mentioned above, any effects later than 18 months after entering training reflect employment which is not bound by contractual obligations arising from the tripartite agreements – these can be considered successful job matches.

In contrast to the positive results on employment, having a tripartite agreement has a slightly *negative* effect on occupational mobility – for almost the entire time horizon examined after entering training, the effect is statistically significant (Annex Figure 4.A.7, Panel C). Averaged over all the time periods, it amounts to EUR 31 – meaning that individuals who undergo training via a tripartite agreement subsequently enter occupations which had an average gross monthly wage of EUR 31 less, or 2.9% of the observed real average gross monthly wage.[4]

On the other hand, the effect of vocational training on wages is unclear (Annex Figure 4.A.8, Panel A): although the point estimates for individuals with tripartite agreements are generally positive, with few exceptions, they are not statistically significant. Conversely, for individuals who enter training without tripartite agreements, the point estimates are generally negative but also generally statistically insignificant. These results suggest that any effects of vocational training on daily wages are too small to be precisely measured in the data.

Despite their slightly negative effects on occupational mobility and insignificant effects on wages, tripartite agreements are associated with strongly positive effects on cumulative earnings, including after accounting for the direct costs of the training (Annex Figure 4.A.8, Panels B and C). After three years, individuals with tripartite agreements had cumulative earnings that amounted to EUR 3 841 more than their comparable peers who did not enter training; the respective amount for those entering training without tripartite agreements amounts to EUR 1 051. After subtracting the direct costs associated with training, the net earnings for individuals with tripartite agreements amounted to EUR 2 676, while the comparable amount for individuals without tripartite agreements is almost statistically insignificant after three years.

The strong finding on the role of tripartite agreements is in line with other findings in the literature. In a recent meta-analysis, Ghisletta, Kemper and Stöterau (2021[9]) find positive effects of involving non-public actors – which they include to mean those from the private sector (e.g. employer associations), NGOs or other organisations – in the design or implementation of vocational training programmes on youth labour market outcomes. Interestingly, they find slightly stronger results for having such actors involved in the design of such programmes, with slightly smaller (but still positive) effects of involving them in the programme's implementation. The results for Lithuania can be loosely interpreted as being in line with these findings as well: the employers are involved in the choice of which training individuals engage in, as the future employer agrees on which training is to be undertaken based on what they deem to be relevant from the roughly 2000 vocational training courses offered in principle. This can help employers address local skill shortages, with employers willing to commit to hiring a worker and wait for them to complete the training.

In addition to the presence of a tripartite agreement, additional programme aspects examined include (i) whether the training has a focus only on obtaining qualifications and (ii) whether it involves formal or non-formal training. The focus of the programme does not have a significant effect on employment probability, while formal vocational training programmes outperform non-formal ones by 2.6 percentage points (Annex Figure 4.A.9).

References

Abadie, A. and G. Imbens (2016), "Matching on the Estimated Propensity Score", *Econometrica*, Vol. 84/2, pp. 781-807, https://doi.org/10.3982/ecta11293. [3]

Card, D., J. Kluve and A. Weber (2018), "What Works? A Meta Analysis of Recent Active Labor Market Program Evaluations", *Journal of the European Economic Association*, Vol. 16/3, pp. 894–931, https://doi.org/10.1093/jeea/jvx028. [4]

ESTEP (2019), *Aktyvios darbo rinkos politikos priemonių bei tarpininkavimo įdarbinant ir įdarbinimo tvarumo stebėsenos ir vertinimo sistemos sukūrimo paslaugos*. [5]

Ghisletta, A., J. Kemper and J. Stöterau (2021), *The impact of vocational training interventions on youth labor market outcomes: A meta-analysis*, https://ethz.ch/content/dam/ethz/special-interest/dual/r4d-tvet4income-dam/documents/LELAM_WorkingPaper_No.20_Meta_Analysis_Training.pdf. [9]

McKenzie, D. (2017), "How Effective Are Active Labor Market Policies in Developing Countries? A Critical Review of Recent Evidence", *The World Bank Research Observer*, Vol. 32/2, pp. 127-154, https://doi.org/10.1093/wbro/lkx001. [8]

OECD (2021), "Designing active labour market policies for the recovery", *OECD Policy Responses to Coronavirus (COVID-19)*, OECD Publishing, Paris, https://doi.org/10.1787/79c833cf-en. [1]

OECD (2021), *OECD Employment Outlook 2021*, OECD Publishing, Paris, https://doi.org/10.1787/5a700c4b-en. [2]

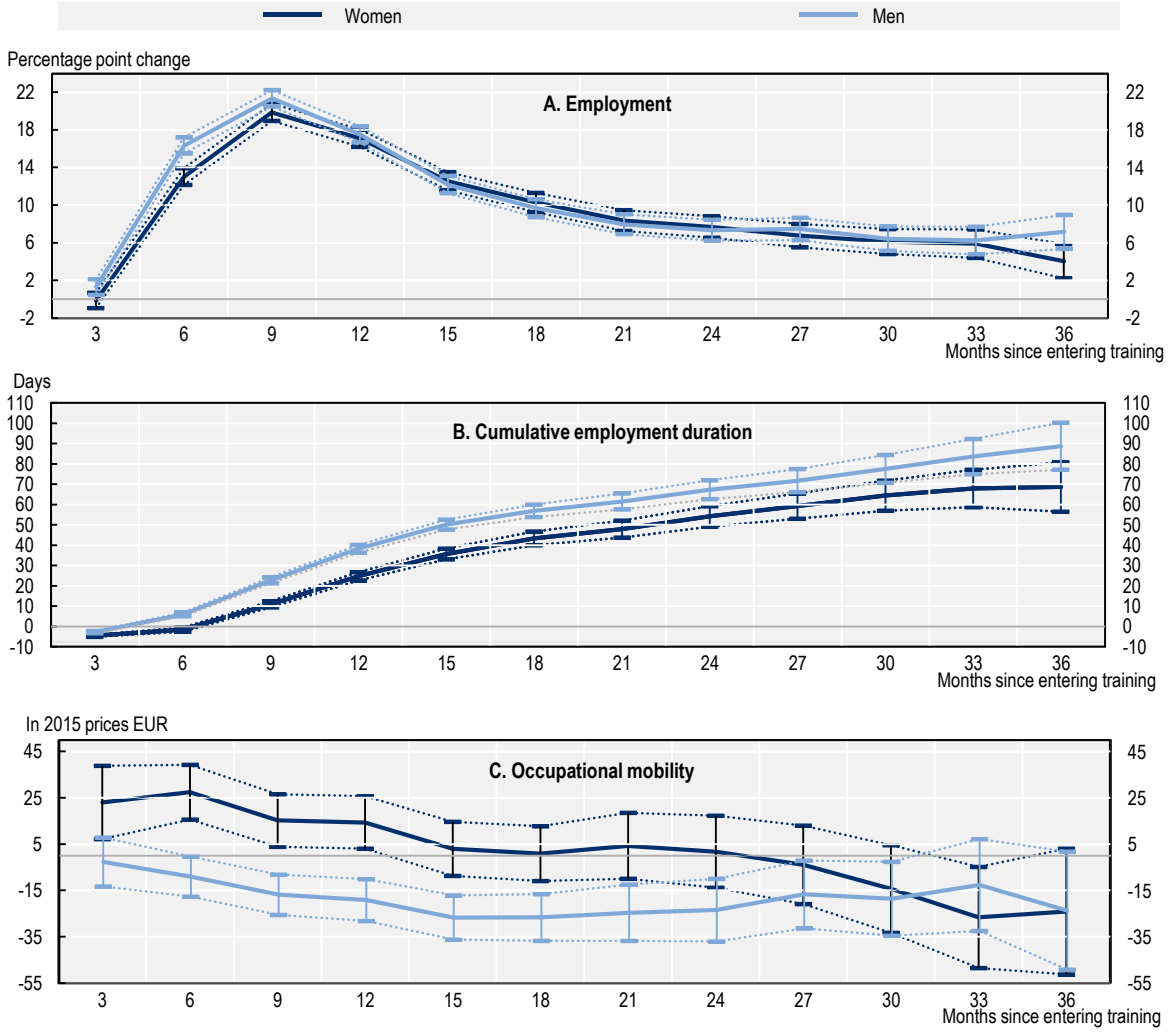
PPMI (2015), *Final Report on Counterfactual Impact Evaluation of ESF Funded Active Labour Market Measures in Lithuania*, https://doi.org/10.13140/RG.2.2.12469.83689. [6]

Vooren, M. et al. (2018), "The Effectiveness of Active Labour Market Policies: A Meta-Analysis", *Journal of Economic Surveys*, Vol. 33/1, pp. 125-149, https://doi.org/10.1111/joes.12269. [7]

Annex 4.A. Additional figures

Annex Figure 4.A.1. The effects of vocational training on employment probability, duration and occupational mobility varies by gender in Lithuania

Percentage point change in employment probability (Panel A), cumulative days of employment (Panel B) and change in occupational index for those who found a job (Panel C)

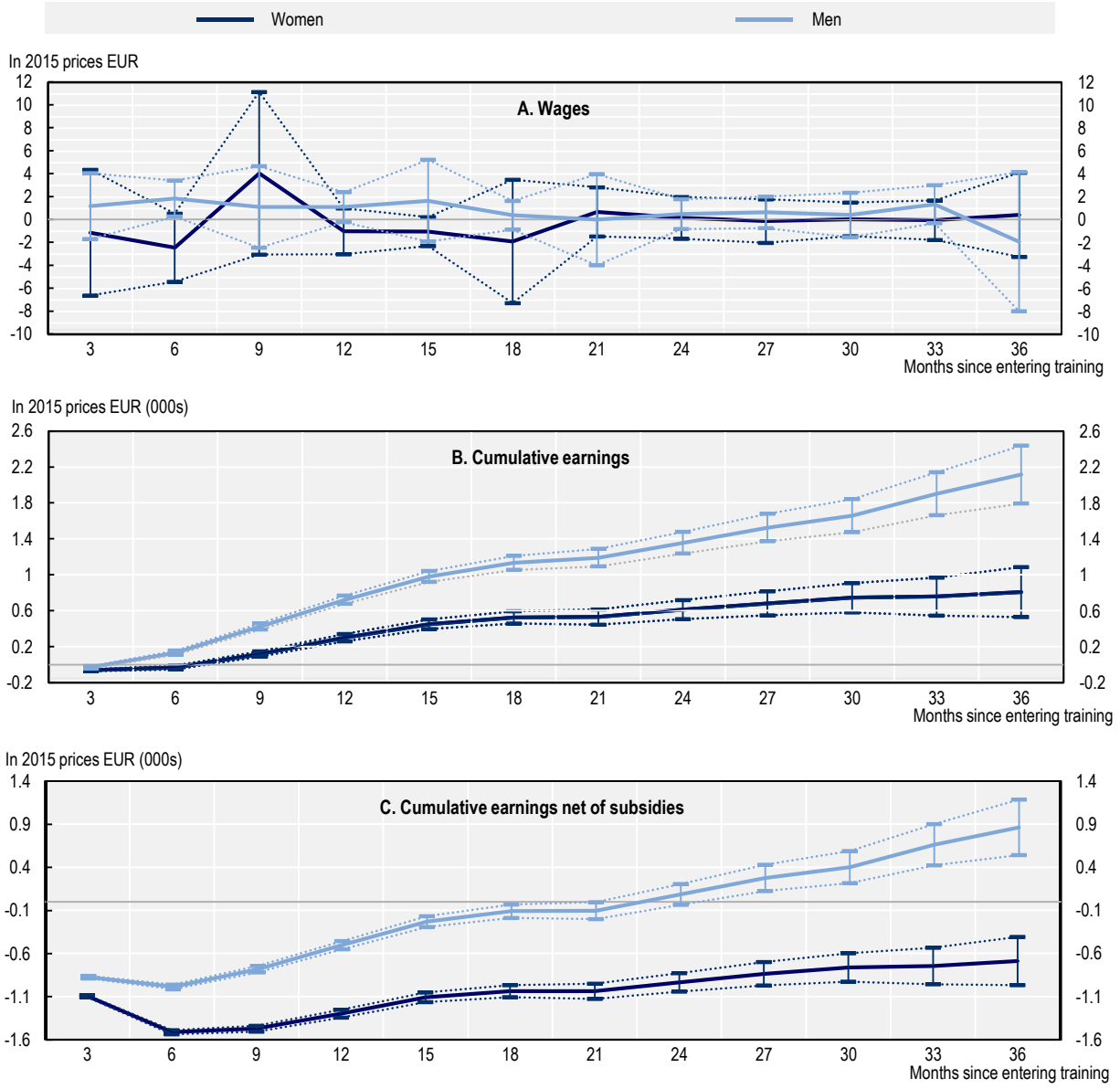


Note: The analysis presents nearest-neighbour propensity score matching results which matches individuals based on a number characteristics: duration of unemployment, age, gender, education, unemployment benefit receipt and level, language and other skills, municipality, employability and barriers to employment, as well as prior employment history and earnings. For every individual in the treatment group, the matching is conducted based on the values of these characteristics in the calendar month when the individual enters the programme. The control group is comprised of individuals with similar characteristics not entering ALMPs in that same calendar month. For paired individuals in the treatment and control groups, this calendar month is then the reference point after which outcomes are measured. The analysis is restricted to the region of common support. The standard errors are calculated based on the adjustment proposed by Abadie and Imbens (2016[3]). The confidence intervals are shown at the 5% level of significance and represented by the whiskers delimiting the dotted lines on the charts.
Source: OECD calculations based on the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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Annex Figure 4.A.2. Men in Lithuania experience a greater boost to cumulative earnings and cumulative earnings net of subsidies

Daily wages for those who found a job (Panel A), cumulative earnings (Panel B) and cumulative earnings net of subsidies (Panel C)

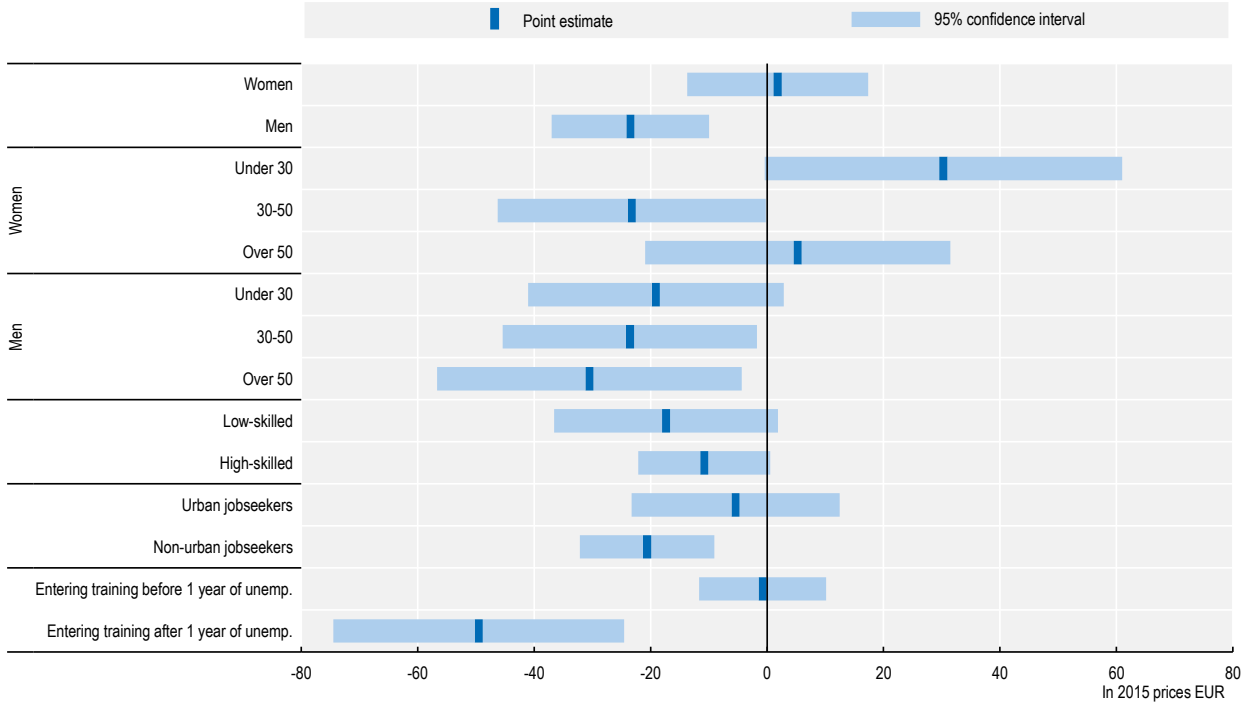


Note: The analysis presents nearest-neighbour propensity score matching results which matches individuals based on a number characteristics: duration of unemployment, age, gender, education, unemployment benefit receipt and level, language and other skills, municipality, employability and barriers to employment, as well as prior employment history and earnings. For every individual in the treatment group, the matching is conducted based on the values of these characteristics in the calendar month when the individual enters the programme. The control group is comprised of individuals with similar characteristics not entering ALMPs in that same calendar month. For paired individuals in the treatment and control groups, this calendar month is then the reference point after which outcomes are measured. The analysis is restricted to the region of common support. The standard errors are calculated based on the adjustment proposed by Abadie and Imbens (2016[3]). The confidence intervals are shown at the 5% level of significance and represented by the whiskers delimiting the dotted lines on the charts.
Source: OECD calculations based on the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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Annex Figure 4.A.3. Vocational training in Lithuania has a negative effect on the occupational mobility of certain sub-groups such as the long-term unemployed

Percentage point change in occupational index for those who were employed 24 months after starting vocational training

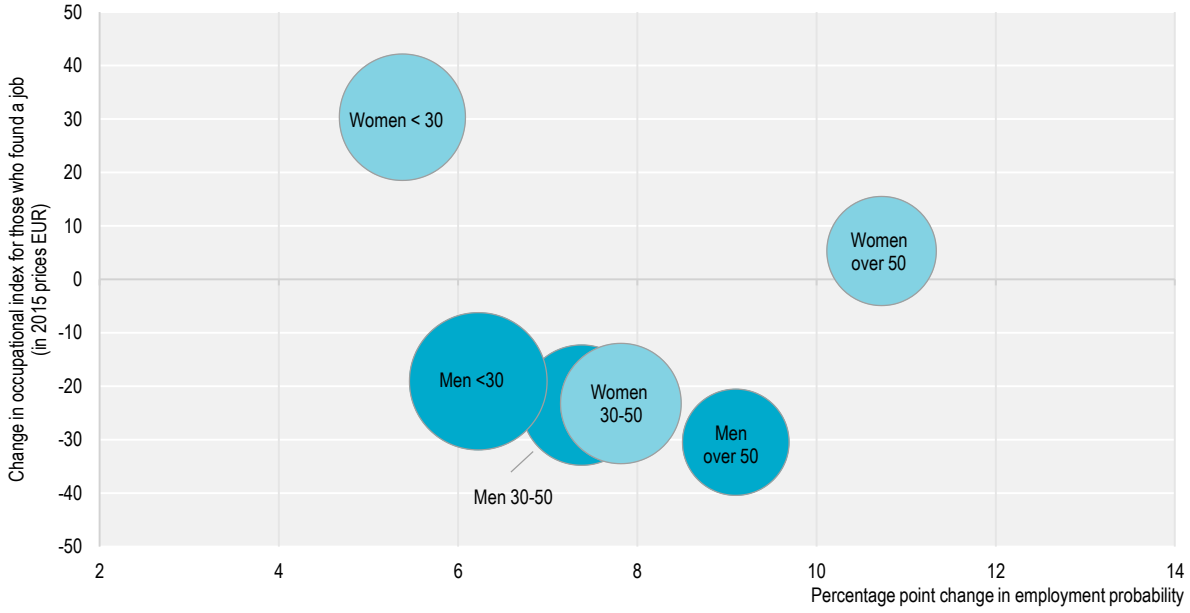


Note: The analysis presents nearest-neighbour propensity score matching results which matches individuals based on a number characteristics: duration of unemployment, age, gender, education, unemployment benefit receipt and level, language and other skills, municipality, employability and barriers to employment, as well as prior employment history and earnings. For every individual in the treatment group, the matching is conducted based on the values of these characteristics in the calendar month when the individual enters the programme. The control group is comprised of individuals with similar characteristics not entering ALMPs in that same calendar month. For paired individuals in the treatment and control groups, this calendar month is then the reference point after which outcomes are measured. The analysis is restricted to the region of common support. The standard errors are calculated based on the adjustment proposed by Abadie and Imbens (2016[3]).
Source: OECD calculations based on the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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Annex Figure 4.A.4. Groups experiencing boosts to employment probability from vocational training in Lithuania may also experience lower occupational mobility

Percentage point change in employment probability and change in occupational index for those who found a job



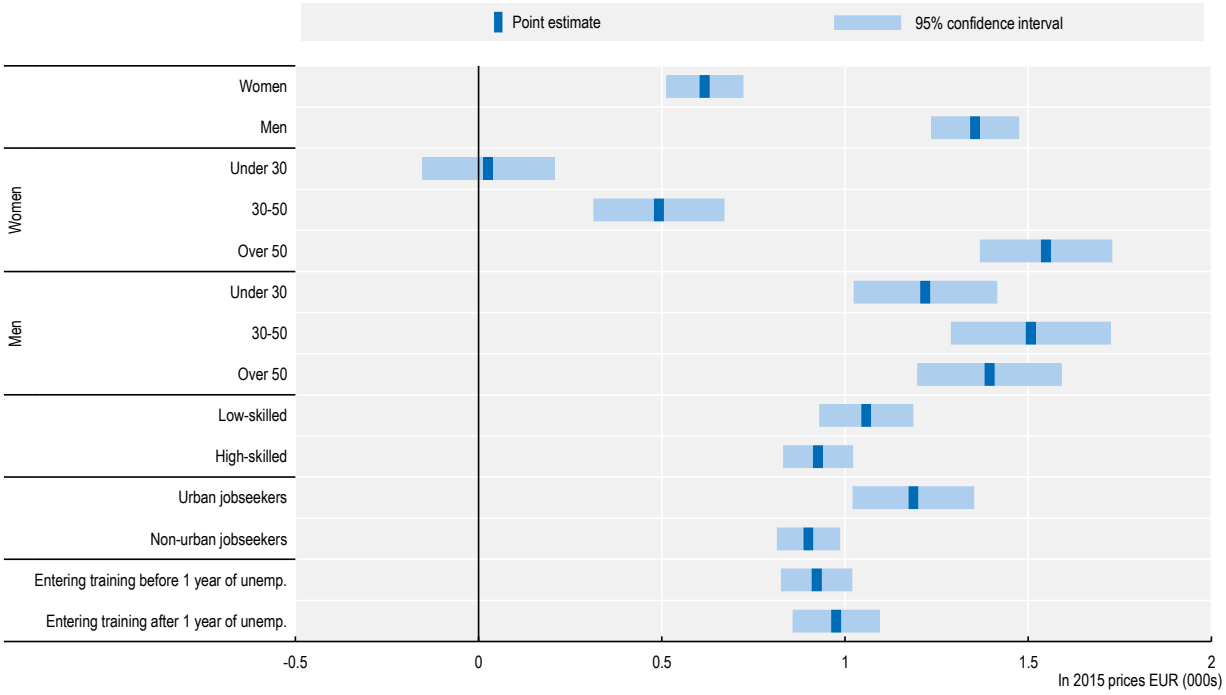
Note: The size of the circles is proportional to the number of vocational training programme participants in the respective sub-group. All estimates refer to effects 24 months after entering training. The analysis presents nearest-neighbour propensity score matching results which matches individuals based on a number characteristics: duration of unemployment, age, gender, education, unemployment benefit receipt and level, language and other skills, municipality, employability and barriers to employment, as well as prior employment history and earnings. For every individual in the treatment group, the matching is conducted based on the values of these characteristics in the calendar month when the individual enters the programme. The control group is comprised of individuals with similar characteristics not entering ALMPs in that same calendar month. For paired individuals in the treatment and control groups, this calendar month is then the reference point after which outcomes are measured. The analysis is restricted to the region of common support. The standard errors are calculated based on the adjustment proposed by Abadie and Imbens (2016[3]).

Source: OECD calculations based on the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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Annex Figure 4.A.5. Vocational training in Lithuania has a positive effect on cumulative earnings for most sub-groups of unemployed individuals

Change in cumulative earnings 24 months after starting vocational training

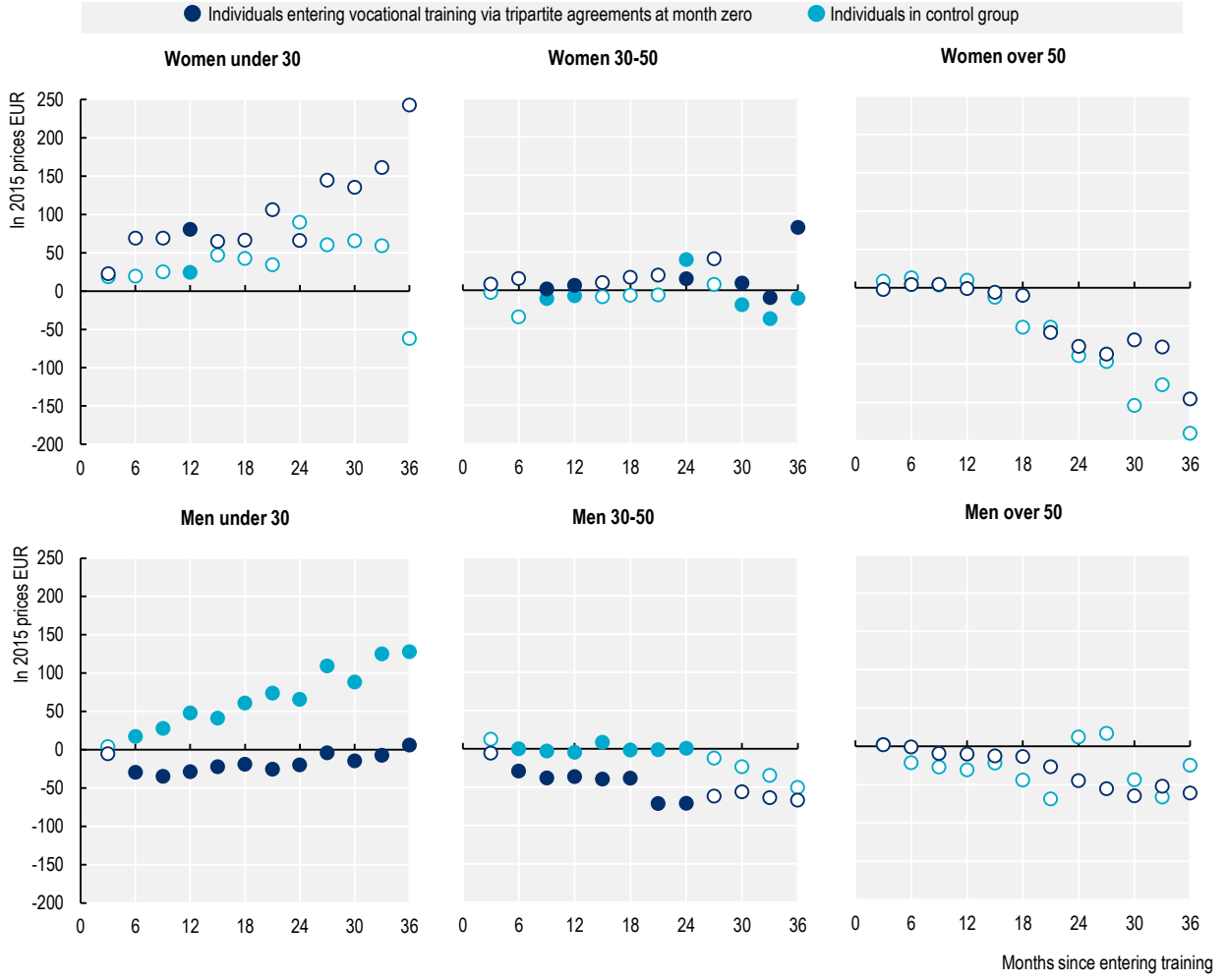


Note: The analysis presents nearest-neighbour propensity score matching results which matches individuals based on a number characteristics: duration of unemployment, age, gender, education, unemployment benefit receipt and level, language and other skills, municipality, employability and barriers to employment, as well as prior employment history and earnings. For every individual in the treatment group, the matching is conducted based on the values of these characteristics in the calendar month when the individual enters the programme. The control group is comprised of individuals with similar characteristics not entering ALMPs in that same calendar month. For paired individuals in the treatment and control groups, this calendar month is then the reference point after which outcomes are measured. The analysis is restricted to the region of common support. The standard errors are calculated based on the adjustment proposed by Abadie and Imbens (2016[3]).
Source: OECD calculations based on the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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Annex Figure 4.A.6. Young Lithuanian men entering vocational training through tripartite agreements have much lower occupational mobility than their peers

Change in occupational index for those who found a job for individuals with tripartite agreements (shaded circles denote statistically significant differences)



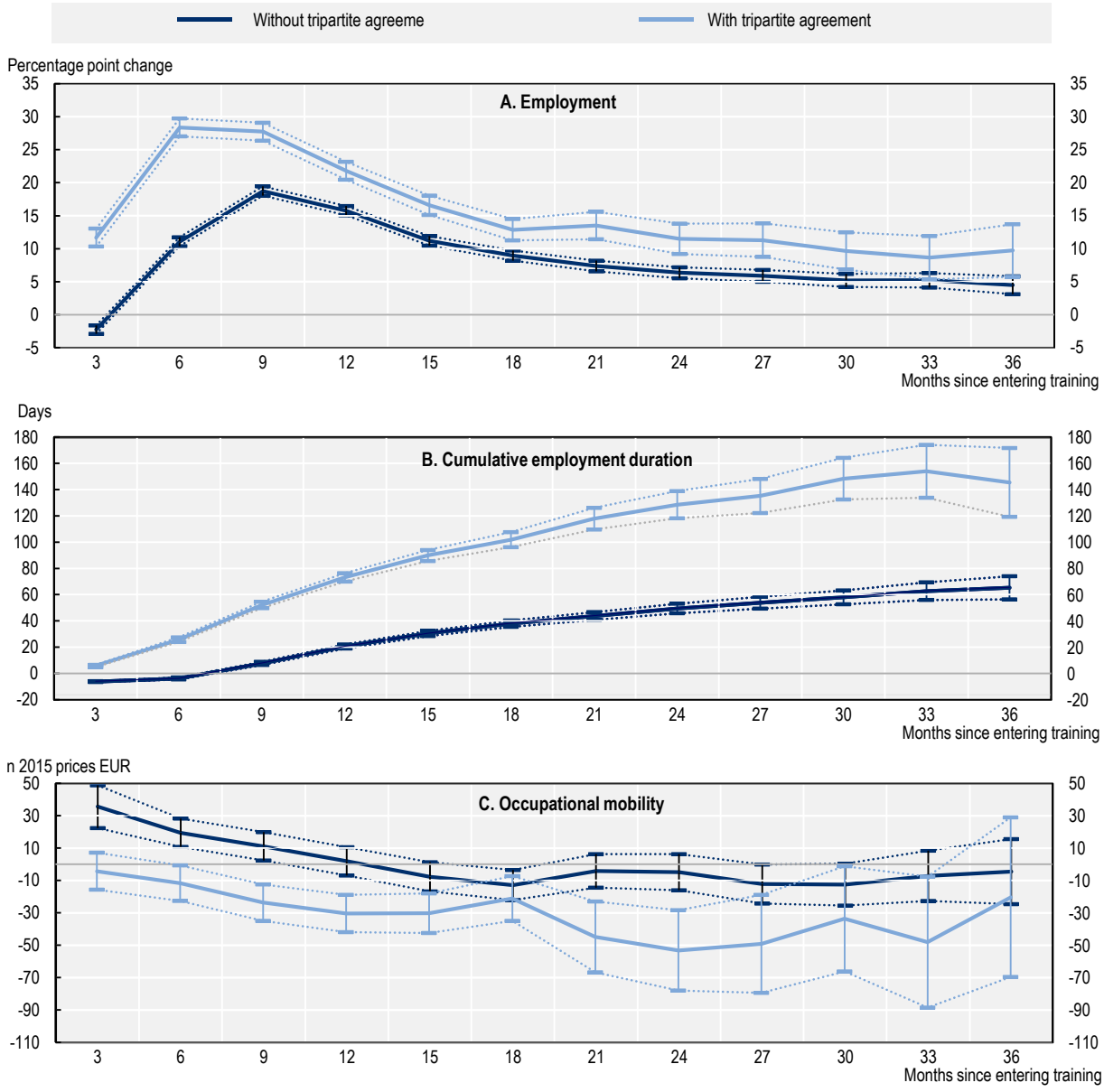
Note: The figure plots gross outcomes separately for individuals in the treatment and control groups. The analysis presents nearest-neighbour propensity score matching results which matches individuals based on a number characteristics: duration of unemployment, age, gender, education, unemployment benefit receipt and level, language and other skills, municipality, employability and barriers to employment, as well as prior employment history and earnings. For every individual in the treatment group, the matching is conducted based on the values of these characteristics in the calendar month when the individual enters the programme. The control group is comprised of individuals with similar characteristics not entering ALMPs in that same calendar month. For paired individuals in the treatment and control groups, this calendar month is then the reference point after which outcomes are measured. The analysis is restricted to the region of common support. The standard errors are calculated based on the adjustment proposed by Abadie and Imbens (2016[3]). Estimates are plotted relative to their values at month zero. Shaded circles denote point estimates for which differences between individuals in the treatment and control groups are statistically significant at the 5% level of significance.

Source: OECD calculations based on the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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Annex Figure 4.A.7. Tripartite agreements in Lithuania are associated with particularly positive employment effects but have a negative effect on occupational mobility over some time horizons

Percentage point change in employment probability (Panel A), cumulative days of employment (Panel B), and change in occupational index for those who found a job (Panel C)

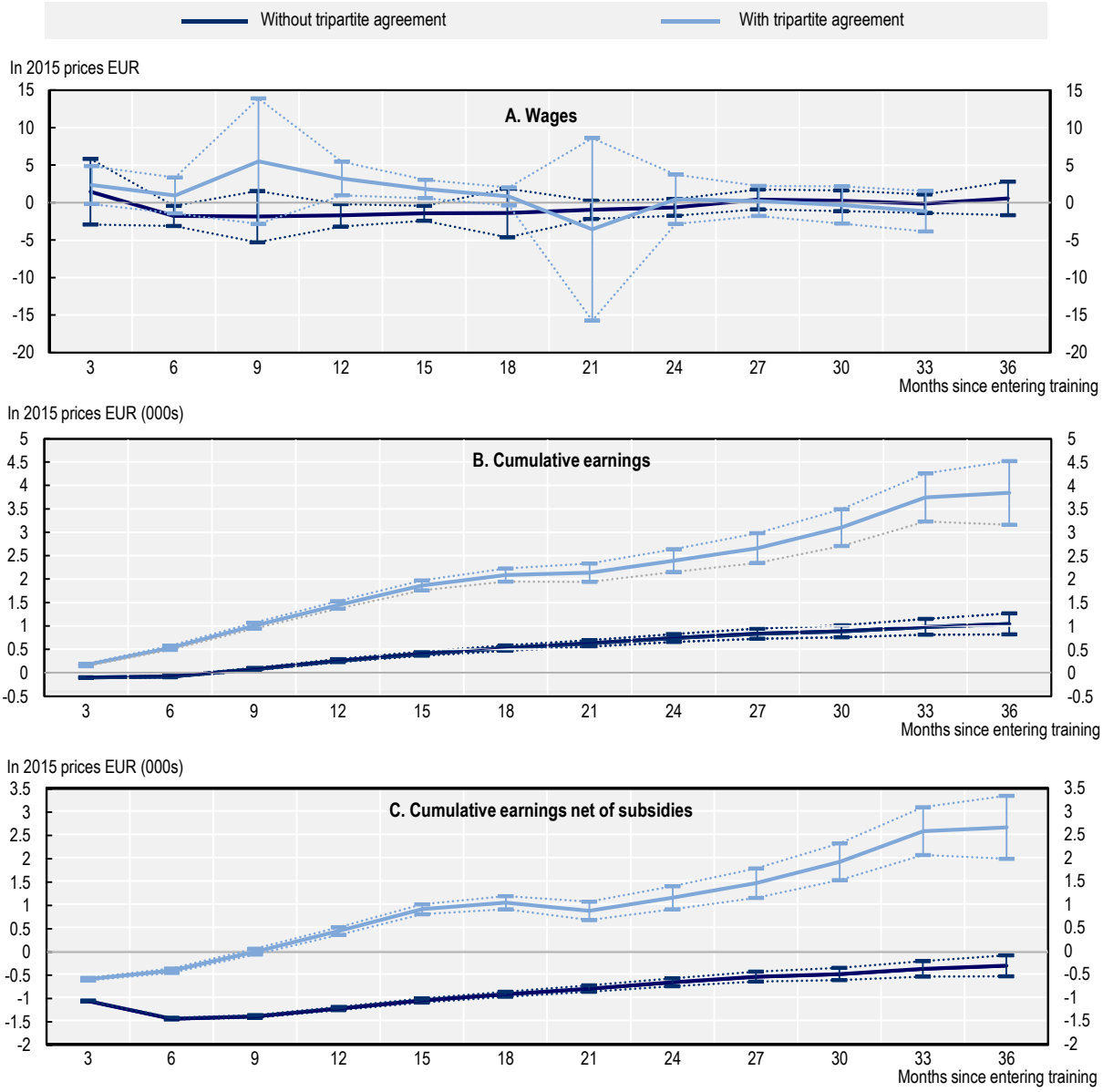


Note: The analysis presents nearest-neighbour propensity score matching results which matches individuals based on a number characteristics: duration of unemployment, age, gender, education, unemployment benefit receipt and level, language and other skills, municipality, employability and barriers to employment, as well as prior employment history and earnings. For every individual in the treatment group, the matching is conducted based on the values of these characteristics in the calendar month when the individual enters the programme. The control group is comprised of individuals with similar characteristics not entering ALMPs in that same calendar month. For paired individuals in the treatment and control groups, this calendar month is then the reference point after which outcomes are measured. The analysis is restricted to the region of common support. The standard errors are calculated based on the adjustment proposed by Abadie and Imbens (2016[3]). The confidence intervals are shown at the 5% level of significance and represented by the whiskers delimiting the dotted lines on the charts.
Source: OECD calculations based on the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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Annex Figure 4.A.8. Tripartite agreements have particularly positive effects on cumulative earnings in Lithuania, but the effects on wages are unclear

Daily wages for those who found a job (Panel A), cumulative earnings (Panel B) and cumulative earnings net of subsidies (Panel C)

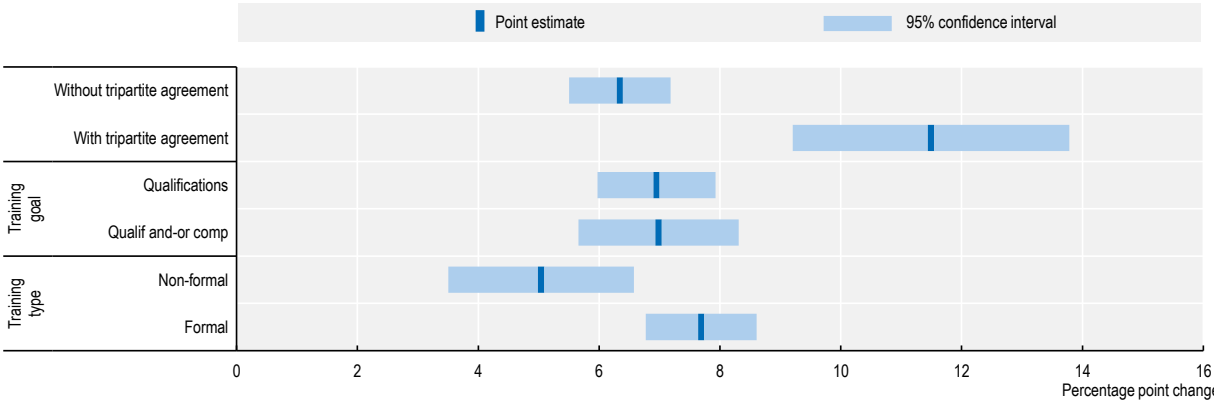


Note: The analysis presents nearest-neighbour propensity score matching results which matches individuals based on a number characteristics: duration of unemployment, age, gender, education, unemployment benefit receipt and level, language and other skills, municipality, employability and barriers to employment, as well as prior employment history and earnings. For every individual in the treatment group, the matching is conducted based on the values of these characteristics in the calendar month when the individual enters the programme. The control group is comprised of individuals with similar characteristics not entering ALMPs in that same calendar month. For paired individuals in the treatment and control groups, this calendar month is then the reference point after which outcomes are measured. The analysis is restricted to the region of common support. The standard errors are calculated based on the adjustment proposed by Abadie and Imbens (2016[3]). The confidence intervals are shown at the 5% level of significance and represented by the whiskers delimiting the dotted lines on the charts.
Source: OECD calculations based on the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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Annex Figure 4.A.9. The presence of a tripartite agreement and having formal vocational training are both associated with more positive employment outcomes in Lithuania

Percentage point change in employment probability 24 months after starting vocational training



Note: The analysis presents nearest neighbour propensity score matching results which matches individuals based on a number characteristics: duration of unemployment, age, gender, education, unemployment benefit level, language and other skills, municipality, employability and barriers to employment (as assessed by LES counsellors), as well as prior employment history and earnings. The matching is conducted based on the values of these characteristics in the calendar month when an individual enters the programme (for individuals in the treatment group). The control group is comprised of individuals with similar characteristics who do not enter any ALMP in that same calendar month. For paired individuals in the treatment and control groups, this calendar month is then the reference point after which outcomes are measured in 3-month intervals, up to 36 months. The analysis is restricted to the region of common support. The standard errors are calculated based on the adjustment proposed by Abadie and Imbens (2016[3]).

Source: OECD calculations based on the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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Notes

[1] The control is comprised of comparable individuals who, in the month when another individual entered into vocational training, did not enter any of the following ALMPs (for which individual-level data were available): Subsidised employment, Vocational training, Supporting the acquisition of work skills, Internship, Recognition of competencies and Apprenticeships. Such individuals could have conceivably entered one of the following ALMPs during that same month: Employment incentives, Supported employment and rehabilitation, Direct job creation, Support for mobility, Support of social enterprises, Local Employment Initiative projects, Job rotation, Subsidised employment of the disabled, Vocational (occupational) rehabilitation and Subsidy for individual activities under a business license.

[2] For individuals in the treatment group, the beginning of the observation period corresponds to when they entered an ALMP. For those in the control group, the beginning of the observation period corresponds to when they were matched to someone in the treatment group, i.e. after being unemployed for a similarly long period of time as the individual entering treatment with similar observable characteristics.

[3] This is done via so-called coarsened exact matching – individuals in the treatment group are matched exclusively to individuals with similar unemployment durations, based on six categories of unemployment duration.

[4] To give a sense of the relative size of the effect on occupational mobility, note that the average cumulative duration of employment for individuals entering training via tripartite agreements was 751 days. Having monthly earnings reduced by EUR 31 thus corresponds to having cumulative counterfactual earnings decrease by EUR 765.

5 Evaluation of employment subsidy programmes administered by the Lithuanian Public Employment Service

This chapter examines the effects of Lithuania's employment subsidy programmes on a number of labour market outcomes. In addition to outcomes typically examined in impact evaluations, such as employment probability and duration, the analysis examines the effects on wages, occupational mobility and earnings, including earnings net of the direct subsidy costs. It also compares the results obtained by the counterfactual impact evaluation with those of similar studies, both for Lithuania and for other countries. The estimated effects are examined across sub-groups of workers based on their age, gender, skill level and urban or rural location. The chapter concludes by analysing whether employment subsidies lead to subsidised workers replacing unsubsidised ones.

5.1. Introduction

In addition to vocational training, the employment subsidy programme is one of the key active labour market programmes (ALMPs) used to help connect unemployed people with jobs in Lithuania. By providing employers with a financial incentive to hire certain categories of jobseekers, employment subsidies can facilitate the integration of such individuals into the labour market. This chapter examines how effective Lithuania's subsidised employment programme has been in placing individuals into sustained employment, how it has affected their career prospects, how the effects vary across individuals, and whether the subsidies lead to subsidised workers displacing unsubsidised ones.

The impact evaluation results indicate that employment subsidies generate large and statistically significant effects on individuals' probability of being in employment. Compared with the results of other studies of similar programmes in other countries, the estimated effects for Lithuania are generally much larger over the first 12 months and in the lower range of estimates over longer time horizons. Furthermore, employment subsidies have a positive effect on occupational mobility for men, but not for women.

The organisation of the chapter is as follows. The next section presents the overall results of subsidised employment on the key outcomes examined: employment probability and duration, wages, occupational mobility and earnings, including earnings net of the direct subsidy costs. It also compares the results obtained by the counterfactual impact evaluation with those of similar studies, both for Lithuania and for other countries. The subsequent section compares the outcomes observed for subsidised employment across sub-groups of workers based on their age, gender, skill level and urban or rural location. This is followed by an examination of the extent to which effects vary across different attributes of the subsidised employment programmes, including in comparison with other studies. The chapter concludes by examining whether the employment subsidy programmes lead to displacement effects, analysing whether the subsidies lead to subsidised workers replacing unsubsidised ones. This section discusses only direct displacement effects occurring within individual firms, with questions relating to deadweight effects – hiring that would have occurred even in the absence of the subsidies – being outside the scope of questions that can be answered with the available data.

5.2. Employment subsidies have positive effects on most outcomes examined

The next sections describe the aggregate results for employment subsidies on selected labour market outcomes and compare them to the results from other studies. The effects of employment subsidies on labour market outcomes are estimated using the dynamic selection-on-observables approach described in Chapter 3 of this report.

5.2.1. Positive effects of employment subsidies decline over time but remain present even after three years

The results show that employment subsidies generate large and statistically significant effects on individuals' probability of being in employment. As Figure 5.1, Panel A shows, after 12 months, individuals who entered subsidised employment (the intervention group) were almost 26.7 percentage points more likely to be in employment than those who were not participating in a substantive ALMP measure or another way out of unemployment (the comparison group, see Section 3.6 of Chapter 3 for more details of the econometric approach). Given that the subsidy period lasts for a maximum of six months – and that for over a quarter of participants, the actual duration is less than this long – these effects capture unsubsidised employment (although firms still have an incentive to retain workers for further six months, tied to their continued eligibility to use the employment subsidy scheme for new hires). The effects remained positive for several months over the entire observation period: 36 months after the start of subsidised employment,

individuals on employment subsidies were still 10.9 percentage points more likely to be employed than individuals who did not enter an ALMP at the beginning of the observation period.

Paralleling the positive effects on employment probability, jobseekers entering subsidised employment were employed for a considerably longer period than jobseekers who did not enter subsidised employment (Figure 5.1, Panel B). Over the three-year time horizon studied, they were employed for 269 days more than individuals who were not employed via employment subsidies. Note that this period includes days worked which were directly subsidised (during the first six months), as well as employment during the subsequent period for which employment subsidies were not paid. A majority of this effect – roughly 60% – is attributable to additional days worked during the period after the initial six months. During the first six months – a period during which employers were paid employment subsidies for individuals on subsidised employment – they were employed for 114 days more than individuals in the control group.

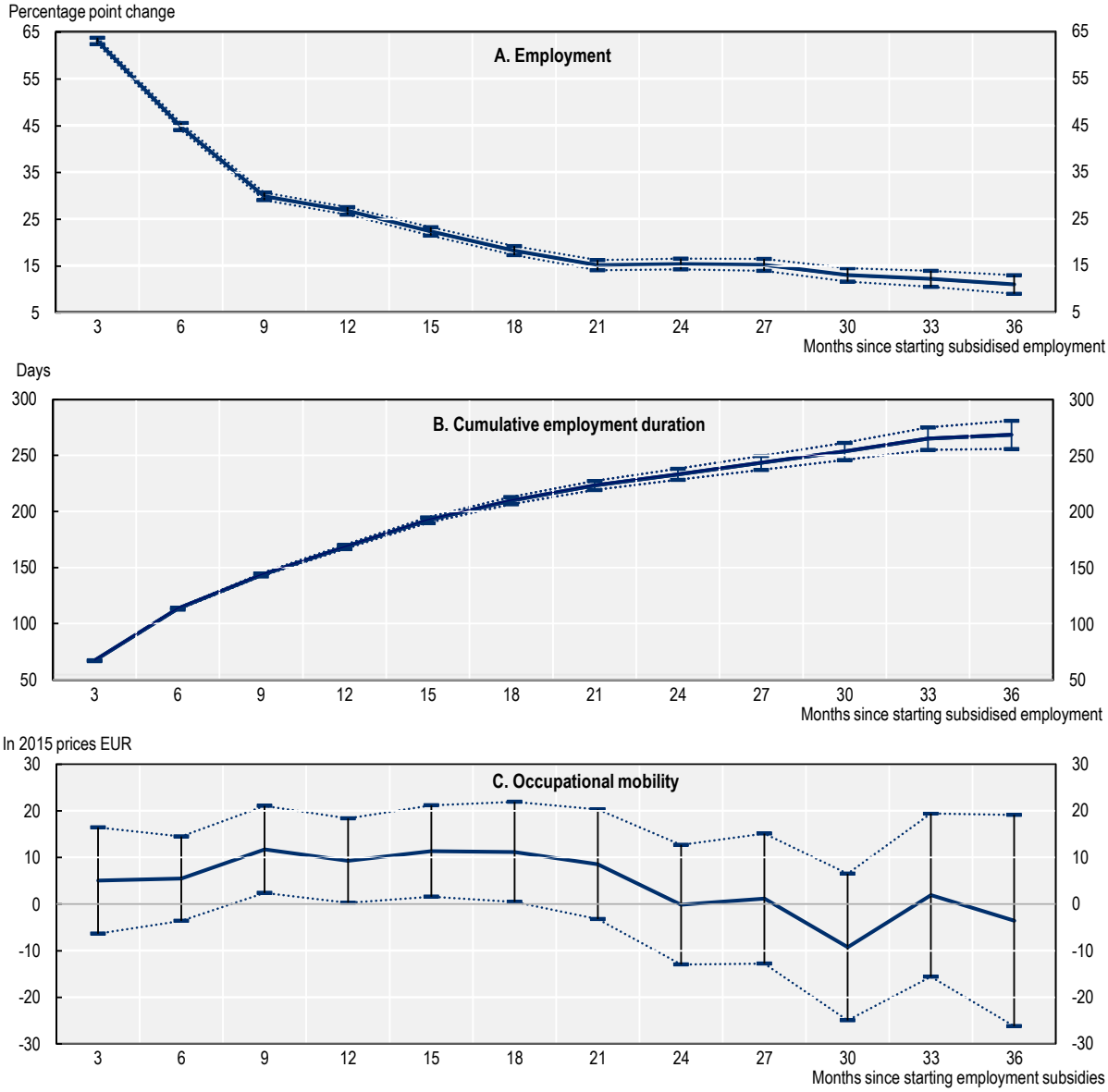
In addition to providing a boost to their employment probability and duration, jobseekers entering subsidised employment experienced a short-term boost in their occupational mobility but received similar wages to those who did not enter subsidised employment. Jobseekers entering subsidised employment experience a boost to their occupational index, with positive and statistically significant effects observed in months 9 to 18 after starting the employment subsidies (Figure 5.1, Panel C) While the average effect over this period is positive, it is rather small, amounting to an increase in EUR 10.8 in the occupational index – an increase that corresponds to 1.0% of real average wages observed during this period. At the same time, in terms of wages, the point estimates are statistically insignificant over the entire time horizon studied, indicating that the very positive employment effects are not counteracted by a negative effect in terms of match quality as this is reflected in wages (Figure 5.2, Panel A).

The combined effect of the factors described above – positive effects of employment subsidies on employment and occupational mobility, together with inconclusive effects on wages – is a positive effect on cumulative earnings (Figure 5.2, Panel B). Twelve months after entering subsidised employment, individuals who had become employed through employment subsidies earned EUR 2 801 more than those who had not, with the difference increasing to EUR 4 653 after 36 months. The trajectory of the increase over time, with subsequent increases remaining positive but diminishing in magnitude, parallel the trajectory of the employment effects, which also become progressively smaller in magnitude. These effects are quite sizable also when taken in the context of counterfactual earnings: cumulatively, at 36 months, individuals in the control group earned an average of EUR 6 909. Individuals in the treatment group thus experienced a 64.8% increase in earnings over this period.

The effects of the employment subsidies on cumulative earnings are positive also after subtracting the direct costs of the employment subsidies (Figure 5.2, Panel C). The effects are positive already at three months – at which point the estimated effect on cumulative earnings net of subsidies amounts to EUR 456. The net effects increase until 33 months after becoming employed via an employment subsidy, at which point they amount to EUR 3 675.

Figure 5.1. Employment subsidies have positive effects on employment and, to a lesser extent, occupational mobility

Percentage point change in employment probability (Panel A), cumulative days of employment (Panel B) change in occupational index for those who found a job (Panel C)

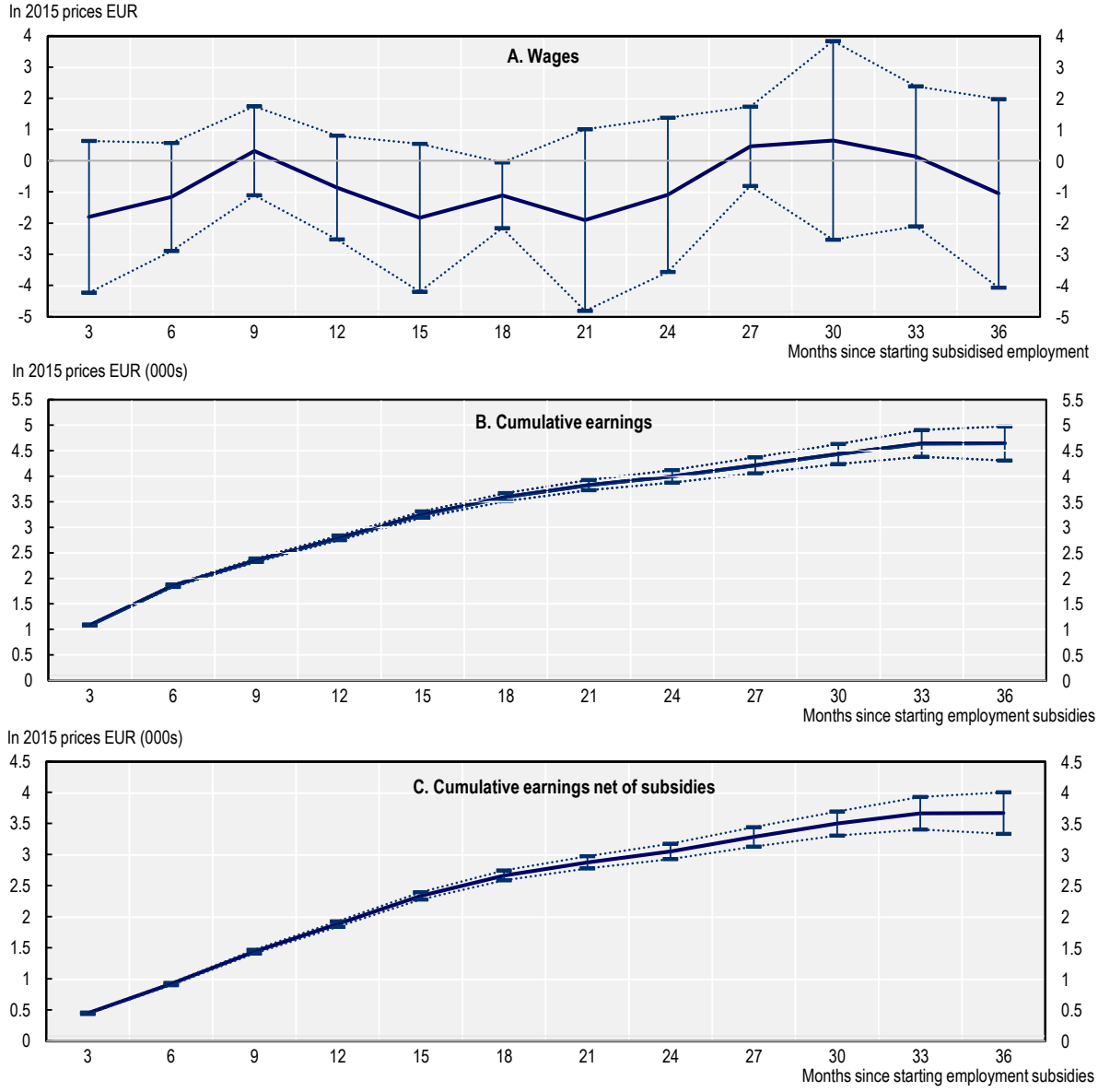


Note: The analysis presents nearest-neighbour propensity score matching results which matches individuals based on a number characteristics: duration of unemployment, age, gender, education, unemployment benefit receipt and level, language and other skills, municipality, employability and barriers to employment, as well as prior employment history and earnings. For every individual in the treatment group, the matching is conducted based on the values of these characteristics in the calendar month when the individual enters the programme. The control group is comprised of individuals with similar characteristics not entering ALMPs in that same calendar month. For paired individuals in the treatment and control groups, this calendar month is then the reference point after which outcomes are measured. The analysis is restricted to the region of common support. The standard errors are calculated based on the adjustment proposed by Abadie and Imbens (2016[1]). The confidence intervals are shown at the 5% level of significance and represented by the whiskers delimiting the dotted lines on the charts.
Source: OECD calculations based on the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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Figure 5.2. Employment subsidies have positive effects on cumulative earnings, but insignificant effects on daily wages

Daily wages for those who found a job (Panel A), cumulative earnings (Panel B) and cumulative earnings net of subsidies (Panel C)



Note: The analysis presents nearest-neighbour propensity score matching results which matches individuals based on a number characteristics: duration of unemployment, age, gender, education, unemployment benefit receipt and level, language and other skills, municipality, employability and barriers to employment, as well as prior employment history and earnings. For every individual in the treatment group, the matching is conducted based on the values of these characteristics in the calendar month when the individual enters the programme. The control group is comprised of individuals with similar characteristics not entering ALMPs in that same calendar month. For paired individuals in the treatment and control groups, this calendar month is then the reference point after which outcomes are measured. The analysis is restricted to the region of common support. The standard errors are calculated based on the adjustment proposed by Abadie and Imbens (2016[1]). The confidence intervals are shown at the 5% level of significance and represented by the whiskers delimiting the dotted lines on the charts.
Source: OECD calculations based on the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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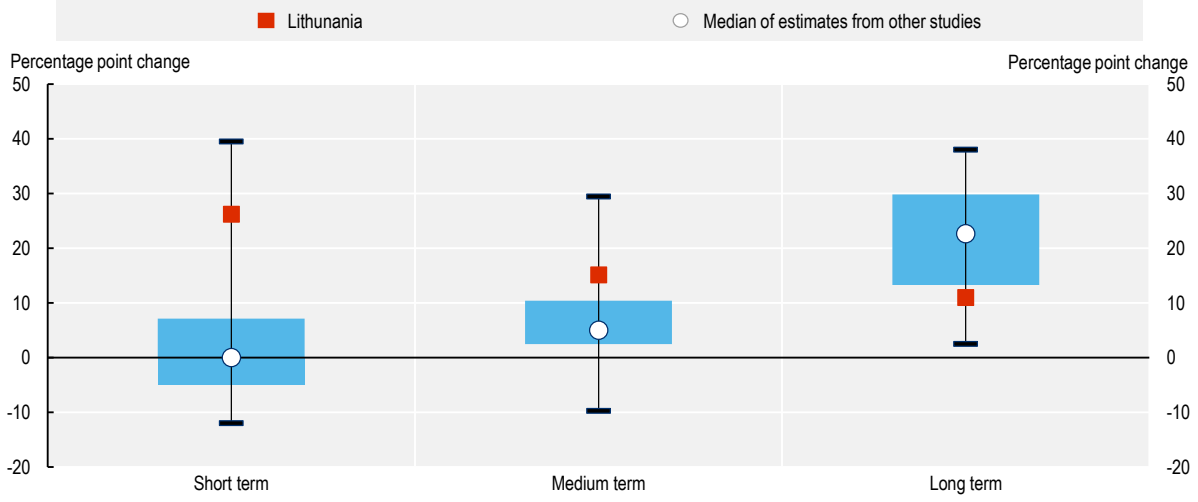
5.2.2. The estimated boost to employment probability by Lithuania's employment subsidy programme compare favourably with estimates from other studies in the short term

In order to examine how the results obtained by the CIE of the Lithuanian measures compare with those of similar studies in other countries, this section places them in the context of results from a meta-analysis conducted by Card, Kluve and Weber (2018[2]). The meta-analysis summarises estimates from over 200 recent impact evaluations of ALMPs. Of these, 15 impact evaluations contain point estimates for the employment effects of private employment subsidy programmes comparable to the one in Lithuania. As noted in the discussion of the results of training in Chapter 4, the meta-analysis does not provide estimates of the effects of other outcomes analysed for Lithuania, such as earnings or days worked.

Compared with the results of the meta-analysis by Card, Kluve and Weber (2018[2]), the estimated effects for Lithuania are generally much larger in the short term, and in the lower range of estimates over longer time horizons (Figure 5.3). The estimated short-term effect for Lithuania, 26.3 percentage points, is considerably higher than the median of 0.0 percentage points found in the comparison studies, while the long-term effect, of 11 percentage points, is lower than the 22.7 percentage point median of comparison studies. Nevertheless, it is worth noting that despite the relatively lower point estimate of the long-term effect, the higher coefficients in the other studies are not necessarily statistically significant. In fact, a small majority (58%) of the studies do not find positive and statistically significant results over the long term.

Figure 5.3. Compared to other studies, the estimated effects of employment subsidies on employment probability are particularly positive in the short term in Lithuania

Percentage point change in employment probability



Note: Short, medium and long-term effects respectively refer to effects up to one year, 1-2 years, and more than two years after programme completion. For Lithuania, results refer to 12, 24 and 36 months after beginning the programme. As such, the observation periods are similar, but potentially not fully aligned. Point estimates are included in the chart even if they are statistically insignificant. The studies presented adopt various research designs and econometric techniques – the results for Lithuania use nearest-neighbour propensity score matching (for details, see Chapter 3).

Source: Card, D., J. Kluve and A. Weber (2018), "What Works? A Meta Analysis of Recent Active Labor Market Program Evaluations", https://doi.org/10.1093/jeea/jvx028 and OECD calculations based on data from Lithuanian Employment Service.

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The estimated effects also compare favourably to previous impact evaluations of employment subsidies in Lithuania. In particular, the estimated effects are more positive than the results reported by PPMI (2015[3]) who examined employment subsidies in Lithuania for an older time period (around 2010). This study found that individuals participating in employment subsidies were employed for roughly two months more during the first year after entering the programme and for an additional one month more during the second year. The effected boost to earnings amounted to EUR 500 and EUR 350 during the first and second years, respectively. Examining the effects on employment subsidy participants among participants entering the intervention in 2016, an impact evaluation by ESTEP (2019[4]) also found positive effects. In that evaluation, the effect of employment subsidies after (roughly) two years amounted to 92 additional days worked and EUR 1 710 in additional earnings. The estimates in these two studies are considerably lower than the ones in this evaluation, which examines entrants into ALMPs during the 2015-19 periods and finds effects after two years of 224 days and EUR 2 004 on days in employment and cumulative earnings, respectively.

5.3. The effects of employment subsidies vary across sub-groups of unemployed people

This section discusses how the results of the employment subsidies vary across sub-groups of the population. It begins by discussing the detailed results for Lithuania and concludes by contrasting these results with those of other comparable studies.

5.3.1. Employment subsidies are more effective for sub-groups such as older workers

Given that the results above have documented the generally positive effects of employment subsidies in aggregate, an interesting additional set of questions concerns their effects across different characteristics of subgroups of unemployed. Paralleling the analysis of vocation training in Section 4.2 of Chapter 4, the subsequent analysis provides separate estimates for the results along several dimensions: (i) gender, (ii) age, (iii) level of education, (iv) urban vs. non-urban residence, and (v) long-term unemployment status.

Men and women tend to benefit slightly differently from employment subsidies. As discussed in greater detail below, both men and women experience a similar boost in terms of cumulative earnings, but women experience a greater increase in employment probability in the first months after entering a subsidised job. Employment subsidies have a positive effect on occupational mobility for men, but not for women. The effects on wages at given points in time are inconclusive. In terms of employment probabilities, women experience a considerable boost during the first 15 months after becoming employed with employment subsidies, with the average difference in employment probability between men and women amounting to 5.2 percentage points during that time (Annex Figure 5.A.1, Panel A). The effects thereafter point to relatively similar effects for men and women: at 36 months, for example, the point estimates of the treatment effects are 11.5 and 10 percentage points for women and men, respectively. The increased employment probability translates into a greater number of cumulative days in employment: three years after starting subsidised employment, women had been employed for 286 days more than comparable women who did not enter subsidised employment, with the comparable figure for men amounting to 249 days (Annex Figure 5.A.1, Panel B).

Employment subsidies have statistically significant positive effects on occupational mobility for men but not women (Annex Figure 5.A.1, Panel C). Men experience a statistically significant positive effect on occupational mobility throughout the months after starting working with an employment subsidy, with positive but statistically insignificant effects during one-third of the observed period. The average of the point estimates amounts to EUR 16.8, meaning that the effect represents a boost of 1.6% compared to the average real wage during this period. Women, by contrast, do not experience a statistically significant effect on occupational mobility when compared to other (previously unemployed) women who entered *un*subsidised employment at the beginning of the observation period. Underlying these results are different

trends in the occupational mobility of the control group (comparable individuals who were unemployed at the beginning of the observation period but did not enter subsidised employment): men in the control group who became employed experienced a slight decrease in their occupational index, but women in the control group did not. For men, subsidised employment can thus be viewed as mitigating the negative effects of unemployment on occupational mobility which are otherwise observed among unemployed men. Women entering employment from unemployment, on the other hand, do not in generally experience these negative effects on occupational mobility, regardless of whether they enter subsidised or unsubsidised employment.

The combined result of these factors is that both women and men experience similarly positive effects on cumulative earnings, including after accounting for the direct costs of the employment subsidies (Annex Figure 5.A.2, Panels B and C). After 36 months, the estimated effects on cumulative earnings for women and men amount to EUR 4 493 and EUR 4 603, respectively. After subtracting the costs of the subsidies, the estimated amounts are very similar, amounting EUR 3 561 for women and EUR 3 608. At the same time, however, there are not any statistically significant effects of employment subsidies on the daily wages of individuals who become employed (Annex Figure 5.A.2, Panel A).

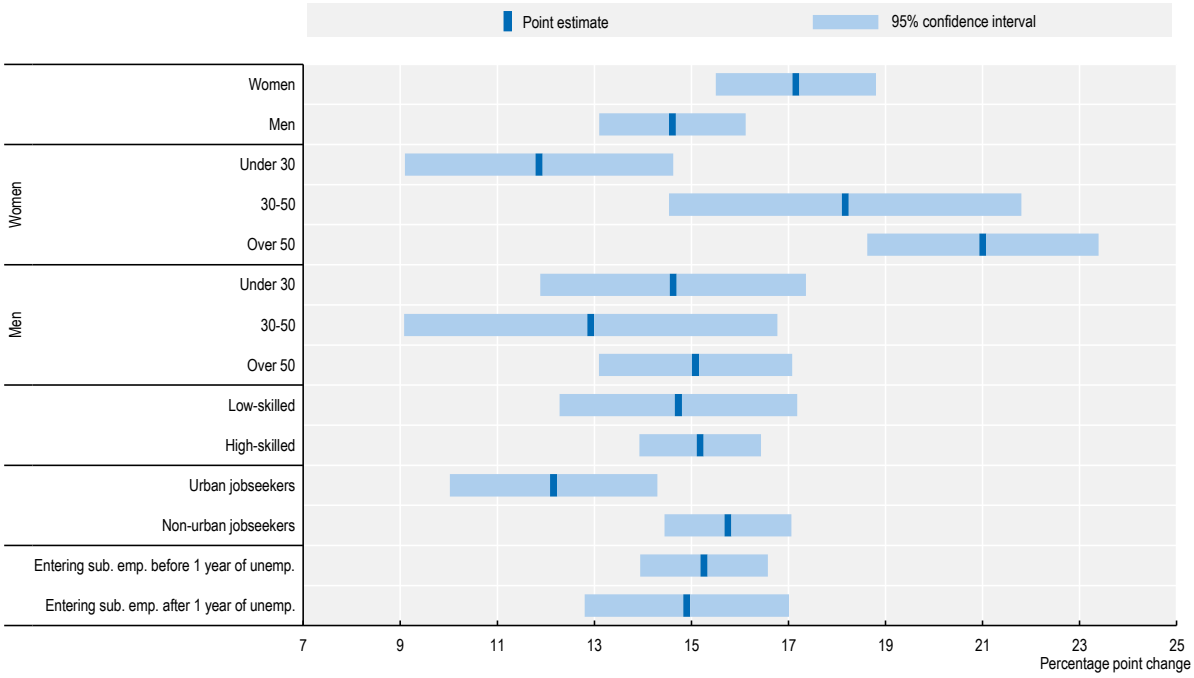
Examining the estimated effects of subsidised employment on employment probability by other jobseeker characteristics show that the positive effects are most pronounced for older women and non-urban jobseekers (Figure 5.4). The effects for women increase considerably among older cohorts: compared to an 11.9 percentage point boost in employment probability experienced by women under 30, women aged 30-50 and over 50 experience gains of 18.2 and 21 percentage points, respectively. Non-urban jobseekers experienced a boost of 15.8 percentage points, compared to 12.2 percentage points for urban jobseekers. Employment probabilities at 24 months do not have important systematic differences across the other characteristics examined, which include jobseeker age among men, skill level, or unemployment duration.

Examining the evolution of the estimated occupational index by age and gender shows stark differences in the profiles by age groups. Figure 5.5 plots changes to the occupational index over time, taking the month when individuals enter the employment subsidies programme as the reference point. In contrast to results presented elsewhere in the chapter, the results here depict gross outcomes and not net outcomes (also known as treatment effects), which can be calculated by subtracting the values for the control group from the values for the treatment group. Several interesting findings emerge from these figures:

- For individuals under 30, both men and women generally experience increases in their occupational index over time, and entering employment with employment subsidies generally does not have a statistically significant effect on this trend. This result is in stark contrast to the analogous figures for vocational training discussed in Chapter 4, which show negative effects of training for men and positive effects for women over time horizons under 24 months.
- For individuals aged 30-50, individuals who entered subsidised employment generally do not experience a change in their occupational index.
- For individuals aged over 50, both men and women who become re-employed tend to experience downward occupational mobility. For men, entering employment with employment subsidies helps mitigate this downward mobility, with some of the point estimates indicating that participation confers a statistically significant positive boost. Nevertheless, even men participating in employment subsidy programme experience a slight negative effect on their occupational mobility.

Figure 5.4. The positive employment effects of employment subsidies are particularly strong for certain sub-groups such women over 50 years of age

Percentage point change in employment probability at 24 months after starting employment subsidies



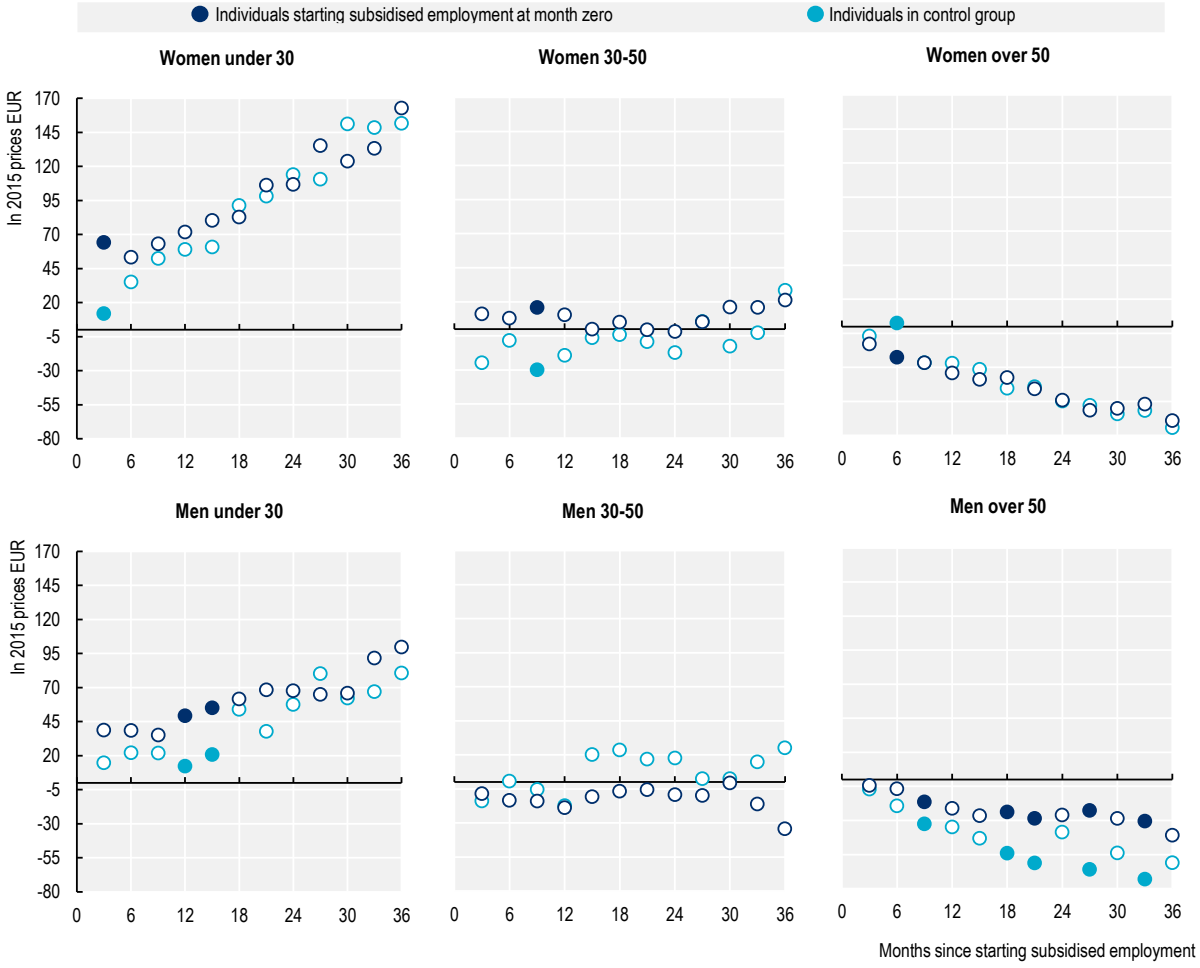
Note: The analysis presents nearest-neighbour propensity score matching results which matches individuals based on a number characteristics: duration of unemployment, age, gender, education, unemployment benefit receipt and level, language and other skills, municipality, employability and barriers to employment, as well as prior employment history and earnings. For every individual in the treatment group, the matching is conducted based on the values of these characteristics in the calendar month when the individual enters the programme. The control group is comprised of individuals with similar characteristics not entering ALMPs in that same calendar month. For paired individuals in the treatment and control groups, this calendar month is then the reference point after which outcomes are measured. The analysis is restricted to the region of common support. The standard errors are calculated based on the adjustment proposed by Abadie and Imbens (2016[1]).
Source: OECD calculations based on the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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Although a small number of point estimates at specific time horizons showed some statistically significant effects of employment subsidies on occupational mobility, most of the point estimates are *not* statistically significant. In fact, 24 months after entering subsidised employment, none of the other jobseeker characteristics have a statistically significant effect on occupational mobility (Annex Figure 5.A.3). This means that the positive employment effects experienced do not have a generally measurably negative or positive effect on occupational mobility. The estimated effect at 24 months is statistically insignificant also for men, who otherwise experienced statistically significant positive effects on occupational mobility during two out of three points for which effects were estimated during the observation period.

Figure 5.5. Employment subsidies help mitigate downward occupational mobility for men over 50

Change in occupational index for those who found a job (shaded circles denote statistically significant differences)



Note: The figure plots gross outcomes separately for individuals in the treatment and control groups. The analysis presents nearest-neighbour propensity score matching results which matches individuals based on a number characteristics: duration of unemployment, age, gender, education, unemployment benefit receipt and level, language and other skills, municipality, employability and barriers to employment, as well as prior employment history and earnings. For every individual in the treatment group, the matching is conducted based on the values of these characteristics in the calendar month when the individual enters the programme. The control group is comprised of individuals with similar characteristics not entering ALMPs in that same calendar month. For paired individuals in the treatment and control groups, this calendar month is then the reference point after which outcomes are measured. The analysis is restricted to the region of common support. The standard errors are calculated based on the adjustment proposed by Abadie and Imbens (2016[1]). Estimates are plotted relative to their values at month zero. Shaded circles denote point estimates for which differences between individuals in the treatment and control groups are statistically significant at the 5% level of significance.

Source: OECD calculations based on the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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The effects of employment subsidies on earnings at 24 months are heterogeneous across jobseeker characteristics. Some of the estimated effects parallel those observed for employment probability, especially those for older women. Paralleling their boost to employment, women over 30 years of age also experience a considerably greater boost to earnings compared to women under 30 years of age. Similarly, women in general benefit slightly more than men. In other respects, however, the results differ substantively: although urban jobseekers experience a smaller boost in employment probability than their non-urban counterparts, they experience a considerably *larger* boost in earnings. A related discrepancy

concerns the earnings of individuals according to education level: individuals with higher education level experience a considerably larger boost to earnings than individuals with lower education do (although both groups experience similar boosts to employment probabilities). The two results are related, given that individuals with higher education disproportionally reside in urban areas. Nevertheless, these are two distinct effects, as shown by the divergence in the employment effects, with region, but not education level, playing an important explanatory role in employment probabilities.

5.3.2. Heterogeneous effects from other studies show wide variation in effects across sub-groups of jobseekers

Paralleling the findings for training discussed in the previous chapters, meta-analyses of the effects of subsidised employment programmes find substantial variation in effects on participant employment across programmes (Card, Kluve and Weber, 2018[2]). This variation may be attributable to a variety of factors, including differences in the target groups, the features of the programme (in particular, the generosity and duration of the subsidy as well as the obligations of employers), as well as differences in the economic environment during which they take place.

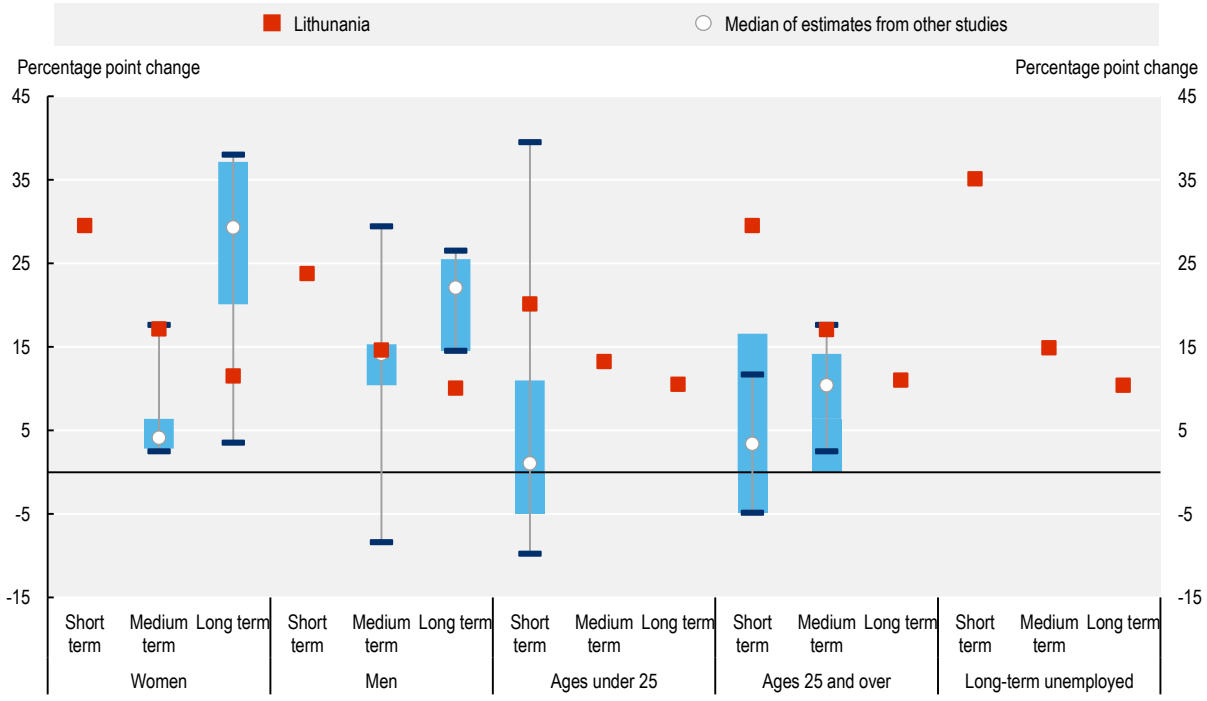
Nevertheless, comparing the evaluation results for Lithuania with that of other studies can provide a useful basis for gauging its effectiveness. Figure 5.6 overlays the results in this impact evaluation with the ones included in the Card et al. (2018[2]) meta-analysis. Similar to the aggregate results, the estimated effects for Lithuania are generally much larger in the short term, and in the lower range of estimates over longer time horizons. Compared to the estimates in the meta-analysis, the estimates for Lithuania are more consistent across the different demographic groups included in the comparisons. One of the more notable outliers is related to the long-term effects observed for women: this is one of the few sub-group estimates where the comparison studies consistently find more positive results. At the same time, however, it is worth noting that for a specific subgroup not included in the figures separately – women over the age of 50 – the results for Lithuania find very positive employment effects (see discussion in Section 5.3.1 above).

A caveat in interpreting the results concerns underlying differences in the programmes for which the effects of the comparison countries are calculated. It is worth noting that Card et al. (2018[2]) do not examine the effects for different groups within the same programmes, but compare the effects of programmes that are targeted to specific groups with those that are not. Within this framework, Card et al. (2018[2]) find that programmes targeted to women are more effective than the average programme or programmes targeted towards men. They also find that targeted programmes towards older workers, perform better than average.

While differences in target group can matter (as Card et al. (2018[2]) show), differences in programme design are also important. Programmes vary in subsidy generosity and length, which naturally make them more or less attractive to employers. Also important are the obligations imposed on employers *after* employment subsidies end. For example, in Lithuania employers must keep workers on for six months following the end of the programme or else the employer is excluded from using the scheme for 12 months. This condition may reconcile the discrepancy in the effects over the short, medium and long-term: employment subsidies in Lithuania appear to have stronger effects on employment in the first several months following programme completion, but not over longer horizons.

Figure 5.6. Employment subsidies have heterogeneous effects on employment probability across sub-groups in both Lithuania and other countries

Percentage point change in employment probability



Note: Short, medium and long-term effects respectively refer to effects up to one year, 1-2 years, and more than two years after programme completion. For Lithuania, results refer to 12, 24 and 36 months after beginning the programme. As such, the observation periods are similar, but potentially not fully aligned. Point estimates are included in the chart even if they are statistically insignificant. Ages refer to "under 30" and "30 and over" for Lithuania. Categories with less than five point estimates in the meta-analysis are omitted from the above figures. The studies presented adopt various research designs and econometric techniques – the results for Lithuania use nearest-neighbour propensity score matching (for details, see Chapter 3).

Source: Card, D., J. Kluve and A. Weber (2018), "What Works? A Meta Analysis of Recent Active Labor Market Program Evaluations", https://doi.org/10.1093/jeea/jvx028 and OECD calculations based on data from Lithuanian Employment Service.

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5.4. Any direct displacement effects of the subsidised employment programme appear to be small

The discussion in the previous section has considered direct impacts of employment subsidies on participants. However, when designing such programmes it is also important to consider indirect effects whereby employment subsidies can (i) benefit participants at the expense of other jobseekers (substitution); (ii) result in hires of workers that would have occurred even in the absence of the subsidy (deadweight effects); or (iii) displace other non-subsidised jobs in the economy (displacement). Thus, these possible indirect, distortionary effects of such large-scale government interventions like employment subsidies can adversely affect individuals not participating in the programmes.

From a theoretical point of view, if the demand for labour is relatively fixed, there may be considerable negative spill-over effects from government interventions: treated individuals may benefit, but mainly at the expense of others. For example, the theoretical model outlined by Landais, Michaillat and Saez (2018[5]) shows that an increase in labour supply arising from training or increased search intensity may merely place the worker at the front of the queue for a fixed supply of jobs. This implies that an accurate

assessment of the broader effects of ALMPs may need to take into the effects on individuals who are not participating in the programmes. At the same time, relatively few studies have been conducted to examine these effects, and the findings are far from conclusive (see Box 5.1).

The analysis in this section examines the question of whether negative spill-over effects are present *within individual firms* in the case of employment subsidies in Lithuania. The analysis is facilitated by access to the data on persons in employment (all employment contracts) over the 2018-20 period in Lithuania. This allows for a broad comparison of the extent to which newly hired workers are entering job positions previously occupied by unsubsidised workers. However, the absence of detailed firm-level information which could allow for estimating whether a firm would be expected to be expanding or contracting means that questions of whether hiring would have occurred even in the absence of subsidies is outside the scope of the analysis. As a result, the analysis does not fully capture potential deadweight effects: the results refer to a more narrow question of whether specific hires are replacing existing workers, not whether these hires would have occurred in the absence of the subsidy.

In the analysis below, job positions are defined based on detailed occupational codes. Shifts in the composition of employment within firms by detailed occupational code from one-quarter to the next are analysed to ascertain whether individual job positions are being created or destroyed.[1] If the composition of employment in a given firm according to occupational codes remains the same from one period to the next, but with changes in the individuals employed there, these changes are construed as replacement flows. To give a simple example, if an individual employed in a given detailed occupation at a given firm at the beginning of one-quarter is no longer employed in that occupation (and firm) at the next quarter, that job position is deemed to be either (i) replaced, if another individual is then employed in that occupation within that firm, or (ii) destroyed otherwise. Conversely, an individual becoming employed at a firm in an occupation that is not yet present at the firm is construed as a job position being created.

Box 5.1. Research on the indirect effects of ALMPs

The direct effects of ALMPs are widely studied and their effects well-documented – with the meta-analysis in Card et al. (2018[2]), covering over 200 studies – but the possible unintended, distortionary effects of these large-scale government interventions are comparably less well-researched. These comprise substitution effects where participants benefit at the expense of other jobseekers, deadweight losses when workers would have been hired even in the absence of an intervention or displacement effects when subsidised jobs displace other non-subsidised ones. Accurately measuring such effects has proven more elusive, with a variety of possible channels through which they take place.

One strand of the literature attempting to measure indirect effects has focused on the effects from a micro-level perspective: exploiting exogenous variation in treatment probability to identify externalities. Crépon et al. (2013[6]) present the results of a randomised experiment designed to evaluate the direct and indirect (displacement) impacts of job placement assistance on the labour market outcomes of young, educated job seekers in France. Exploiting experimental variation in the probability of assignment into the treatment programme, they find that treated individuals had a significantly higher probability of entering stable employment eight months after assignment than untreated individuals. However, the effects were short lived, and appear to have come partly at the expense of untreated individuals, particularly in labour markets where they compete mainly with other educated workers, and in labour markets with above-average unemployment. Building on the assumption that indirect effects can be expected to be higher wherever a higher share of unemployed individuals are in the treatment group, Attanasio et al. (2017[7]) exploit variation in treatment probability across regions and occupational groups to explore the displacement effects of vocational training in Colombia. In contrast to Crépon

et al. (2013[6]), they find no evidence of negative externalities. Blundell et al. (2004[8]) examine the effects of a programme that provided intensive job-search assistance and wage subsidies for jobseekers aged 18-24 in the United Kingdom. The programme effects are identified by exploiting the fact that area- and age-based eligibility criteria varied across individuals of identical unemployment durations. Although they find sizable treatment effects of the programme – an increase of 5 percentage points in employment probability in the treatment group compared to a baseline of 26% – they do not find that these led to substitution or displacement effects.

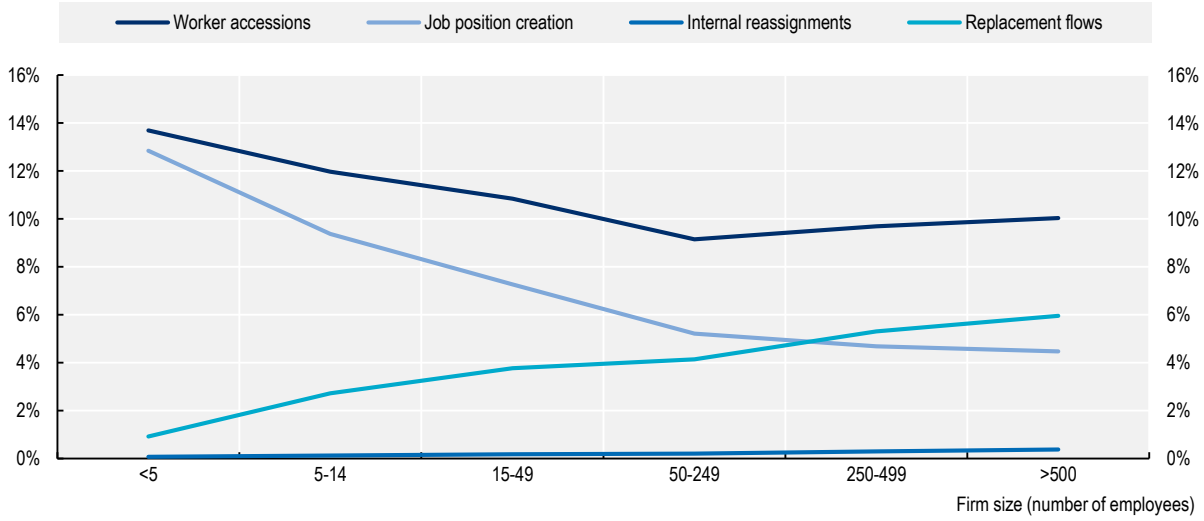
Another strand of the literature has focused on the effects using aggregated data, typically utilising variation across geographic regions for identification. Forslund and Krueger (1997[9]) examine employment in non-subsidised jobs in a geographical area on the number of subsidised jobs lagged one period and other control variables for Swedish construction workers. They estimate a spill over coefficient of -0.69: for each worker hired via public subsidy, there are 0.69 fewer private construction workers hired. Dauth et al. (2014[10]) exploit the variation in the ALMP participation rate across regions in Austria over time to examine their effects on the probability of job matches occurring amongst all unemployed. They find evidence of positive spill over effect of ALMPs, including for wage subsidies: in regions with large shares of former participants in this programme a higher number of matches are expected. Examining country-level data from OECD countries for the 1991-2011 period, Goalas and Zervoyianni (2018[11]) find evidence of a small net positive output-growth differential associated with implementing ALMPs. Furthermore, they find that this differential becomes larger during economic upturns when market conditions are improving relative to trend.

Source: Attanasio, O. et al. (2017), "Vocational Training for Disadvantaged Youth in Colombia: A Long-Term Follow-Up", https://doi.org/10.1257/app.20150554; Blundell, R. et al. (2004), "Evaluating the Employment Impact of a Mandatory Job Search Program", https://doi.org/10.1162/1542476041423368; Card, D., J. Kluve and A. Weber (2018), "What Works? A Meta Analysis of Recent Active Labor Market Program Evaluations", https://doi.org/10.1093/jeea/jvx028; Crépon, B. et al. (2013), "Do Labor Market Policies have Displacement Effects? Evidence from a Clustered Randomized Experiment", https://doi.org/10.1093/qje/qjt001; Dauth, W., R. Hujer and K. Wolf (2014), "Do Regions Benefit from Active Labour Market Policies? A Macroeconometric Evaluation Using Spatial Panel Methods", https://doi.org/10.1080/00343404.2014.931571; Forslund, A. and A. Krueger (1997), *An Evaluation of the Swedish Active Labor Market Policy: New and Received Wisdom*; Goulas, E. and A. Zervoyianni (2018), "Active labour-market policies and output growth: Is there a causal relationship?", https://doi.org/10.1016/j.econmod.2017.11.019.

Before discussing the relationship between replacement flows and employment subsidies, it is instructive to examine the calculated replacement flows in Lithuania. Given that the relatively short time period spanned by the data (2018-20) does not provide a long-enough time horizon for a meaningful analysis of their trends over time, the discussion here will focus on the relationship between these flows and firm size. As shown in Figure 5.7, replacement flows increase monotonically with firm size. In firms with over 500 employees, an average of 6% of job positions which are vacated by existing workers are maintained through hires of new workers from one-quarter to the next.[2] Smaller firms tend to experience greater job creation than larger ones, with virtually all such creation in the smallest firms being accounted for by new hires – worker accessions.

Figure 5.7. Larger firms experience more replacement flows

Quarterly flows as a share of total employment



Note: Quarterly calculations made based on changes in employment stocks in the first calendar month of the quarter (e.g. changes for Q2-2018 reflect shifts from January to April 2018). Calculations are made based on data for 2018-20. Firm sizes are defined based on the observed number of employees in the SODRA data. Worker accessions are defined as the total number of workers *not* employed in a given firm in a given quarter who are employed by this firm in the next quarter. Job position creation is defined as the increase in a firm's total number of workers employed in a given job-position type from one-quarter to the next, summed across all the job-position types in the firm in the next quarter. Internal reassignments are defined as the total number of workers employed at a given firm in two consecutive quarters who were in a different job-position type in the first quarter than they were in the second.
Source: OECD calculations based on the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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One estimate of the potential size of direct displacement effects – to be interpreted as an upper bound – is the share of hires via employment subsidies which replaced the job positions of existing workers. During the 2018-20 period, there were 24 000 such accessions of individuals via employment subsidies measured on a quarter-to-quarter basis.[3] Of these accessions (hires), 1 200 replaced workers previously employed via an employment subsidy, and 3 900 replaced workers who were not employed via an employment subsidy. Taken together, accessions of workers on employment subsidies replaced existing workers in 22% of cases. This 22% could be interpreted as an estimate of the direct displacement effects of employment subsidies within specific firms. However, as the following discussion will make clear, it should be interpreted as a maximum upper bound.

Another important related finding pertains to the share of worker accessions that constitute replacement flows among workers who do *not* receive the employment subsidy. Such accessions can constitute a reasonable estimate of the comparison, baseline rate of replacement flows against which to interpret the analogous statistic for subsidised employment. This comparable figure for non-subsidised workers amounted to 38% – meaning that almost two in five non-subsidised hires in Lithuania during the 2018-20 period replaced the job position of an existing worker. The fact that this share is considerably higher than the respective share for those receiving an employment subsidy casts doubt on the interpretation of the above estimate of replacement flows as reflecting displacement effects.

Given the available data, an alternative estimate of displacement effects can be constructed under a different set of assumptions. The key assumption in this case is that only a subset of occupations are suitable for hiring individuals via an employment subsidy in practice. In this case, assuming a relatively constant share of individuals being employed via employment subsidies as a share of total employment,

one would expect that the share of subsidised individuals replacing *un*subsidised individuals would equal the share of *un*subsidised individuals replacing subsidised individuals. There exists a period where this proportion is indeed constant, from Q3-2019 through Q1-2020: during this period, the share of individuals in subsidised employment was almost perfectly stable and amounted to 0.62% of total employment. The replacement flows during this period do not support the presence of any displacement effects, as in fact the number of subsidised individuals replacing *un*subsidised individuals was *lower* than the number of *un*subsidised individuals replacing subsidised individuals – 691 to 751, respectively. While far from conclusive, these figures indicate that any displacement effects occurring *within firms* in Lithuania are likely to be small.

The finding that the pattern of replacement flows in Lithuania is not consistent with the presence of large displacement effects has several possible explanations. *First*, the conditions for the receipt of the subsidy may provide a disincentive for employers to engage in such strategic behaviour. From July 2017 onwards, employers who dismiss a worker in the six months from the last subsidy payment for that worker are not eligible for further employment subsidies for 12 months. *Second*, the relatively strong performance of the Lithuanian labour market during the period studied may have made employers wary of dismissing workers just to gain access to employment subsidies. Even with the subsidies, employers still pay a sizable share of the wages of workers hired: the programme subsidises 50% of participant's wage costs, with a ceiling that amounted to twice the statutory minimum wage during the 2017-19 period and one and a half statutory minimum wages thereafter. This also limits the financial incentive of employers to replace existing workers. It is worth emphasising, however, that the findings discussed in this sub-section pertain only to displacement effects relating to existing workers. To the extent that employment subsidies result in deadweight effects – job position creation that would have occurred even in the absence of the subsidies – these are not captured in the present analysis.

References

Abadie, A. and G. Imbens (2016), "Matching on the Estimated Propensity Score", *Econometrica*, Vol. 84/2, pp. 781-807, https://doi.org/10.3982/ecta11293. [1]

Attanasio, O. et al. (2017), "Vocational Training for Disadvantaged Youth in Colombia: A Long-Term Follow-Up", *American Economic Journal: Applied Economics*, Vol. 9/2, pp. 131-143, https://doi.org/10.1257/app.20150554. [7]

Blundell, R. et al. (2004), "Evaluating the Employment Impact of a Mandatory Job Search Program", *Journal of the European Economic Association*, Vol. 2/4, pp. 569-606, https://doi.org/10.1162/1542476041423368. [8]

Card, D., J. Kluve and A. Weber (2018), "What Works? A Meta Analysis of Recent Active Labor Market Program Evaluations", *Journal of the European Economic Association*, Vol. 16/3, pp. 894–931, https://doi.org/10.1093/jeea/jvx028. [2]

Crépon, B. et al. (2013), "Do Labor Market Policies have Displacement Effects? Evidence from a Clustered Randomized Experiment *", *The Quarterly Journal of Economics*, Vol. 128/2, pp. 531-580, https://doi.org/10.1093/qje/qjt001. [6]

Dauth, W., R. Hujer and K. Wolf (2014), "Do Regions Benefit from Active Labour Market Policies? A Macroeconometric Evaluation Using Spatial Panel Methods", *Regional Studies*, Vol. 50/4, pp. 692-708, https://doi.org/10.1080/00343404.2014.931571. [10]

Davis, S., J. Haltiwanger and S. Schuh (1996), *Job Creation and Destruction*, MIT Press. [12]

ESTEP (2019), *Aktyvios darbo rinkos politikos priemonių bei tarpininkavimo įdarbinant ir įdarbinimo tvarumo stebėsenos ir vertinimo sistemos sukūrimo paslaugos*. [4]

Forslund, A. and A. Krueger (1997), *An Evaluation of the Swedish Active Labor Market Policy: New and Received Wisdom*, University of Chicago Press. [9]

Goulas, E. and A. Zervoyianni (2018), "Active labour-market policies and output growth: Is there a causal relationship?", *Economic Modelling*, Vol. 73, pp. 1-14, https://doi.org/10.1016/j.econmod.2017.11.019. [11]

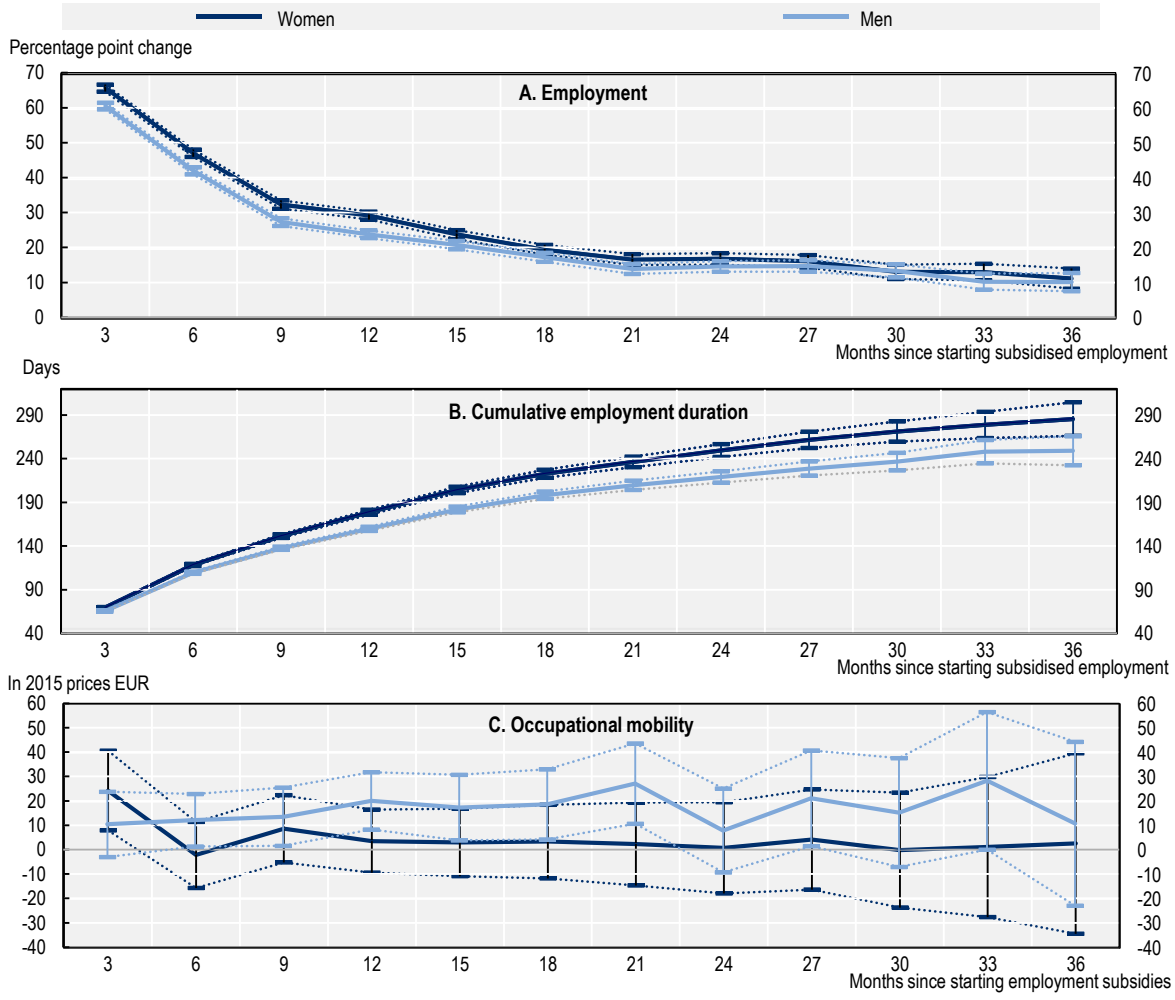
Landais, C., P. Michaillat and E. Saez (2018), "A Macroeconomic Approach to Optimal Unemployment Insurance: Applications", *American Economic Journal: Economic Policy*, Vol. 10/2, pp. 182-216, https://doi.org/10.1257/pol.20160462. [5]

PPMI (2015), *Final Report on Counterfactual Impact Evaluation of ESF Funded Active Labour Market Measures in Lithuania*, https://doi.org/10.13140/RG.2.2.12469.83689. [3]

Annex 5.A. Additional figures

Annex Figure 5.A.1. Estimated effects of employment subsidies on employment probability, employment duration and wages by gender

Percentage point change in employment probability (Panel A), cumulative days of employment (Panel B) and change in occupational index for those who found a job (Panel C)

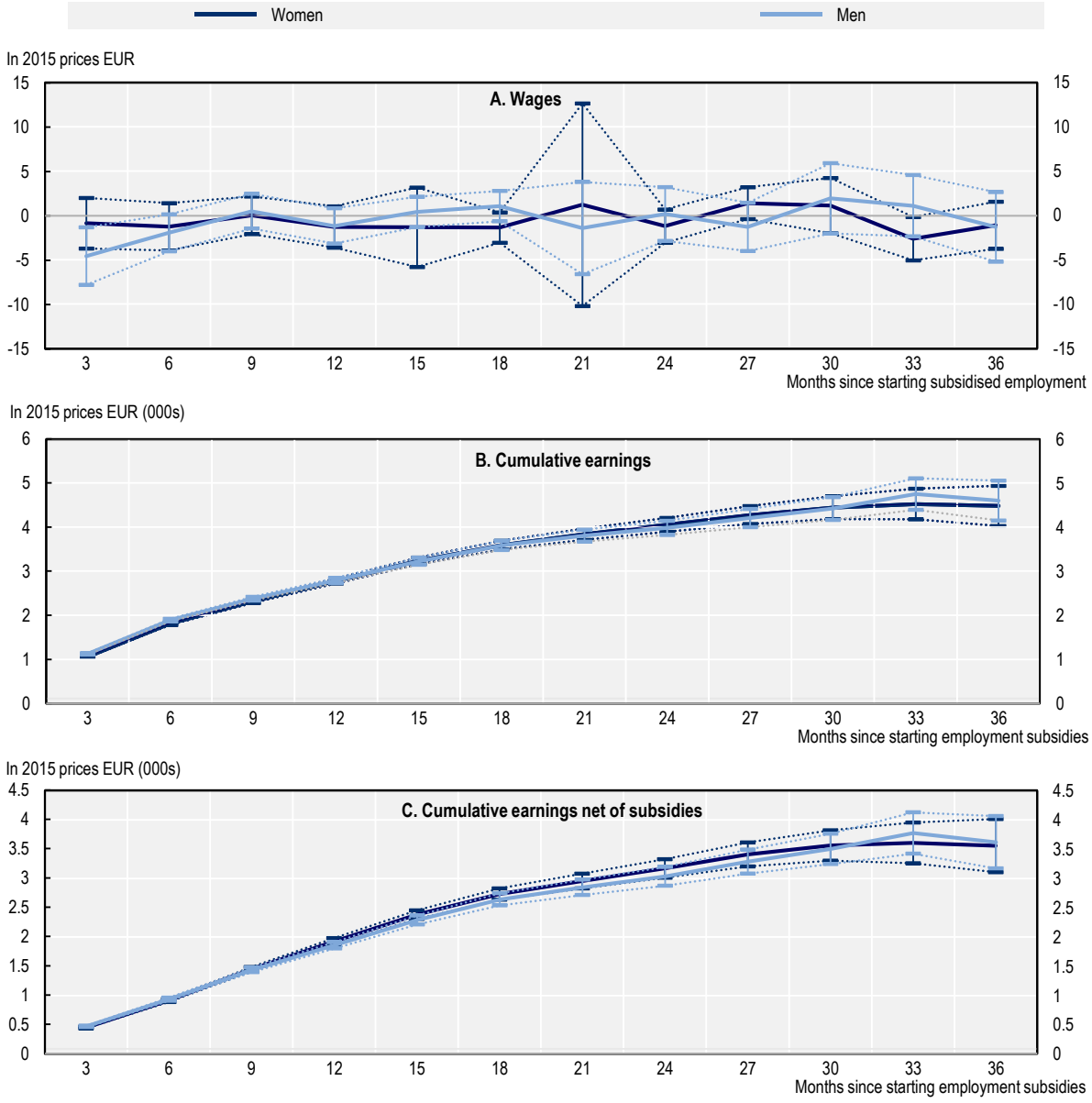


Note: The analysis presents nearest-neighbour propensity score matching results which matches individuals based on a number characteristics: duration of unemployment, age, gender, education, unemployment benefit receipt and level, language and other skills, municipality, employability and barriers to employment, as well as prior employment history and earnings. For every individual in the treatment group, the matching is conducted based on the values of these characteristics in the calendar month when the individual enters the programme. The control group is comprised of individuals with similar characteristics not entering ALMPs in that same calendar month. For paired individuals in the treatment and control groups, this calendar month is then the reference point after which outcomes are measured. The analysis is restricted to the region of common support. The standard errors are calculated based on the adjustment proposed by Abadie and Imbens (2016[1]). The confidence intervals are shown at the 5% level of significance and represented by the whiskers delimiting the dotted lines on the charts.
Source: OECD calculations based on the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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Annex Figure 5.A.2. Estimated effects of employment subsidies on occupational mobility, cumulative earnings and cumulative earnings net of subsidies by gender

Daily wages for those who found a job (Panel A), cumulative earnings (Panel B) and cumulative earnings net of subsidies (Panel C)

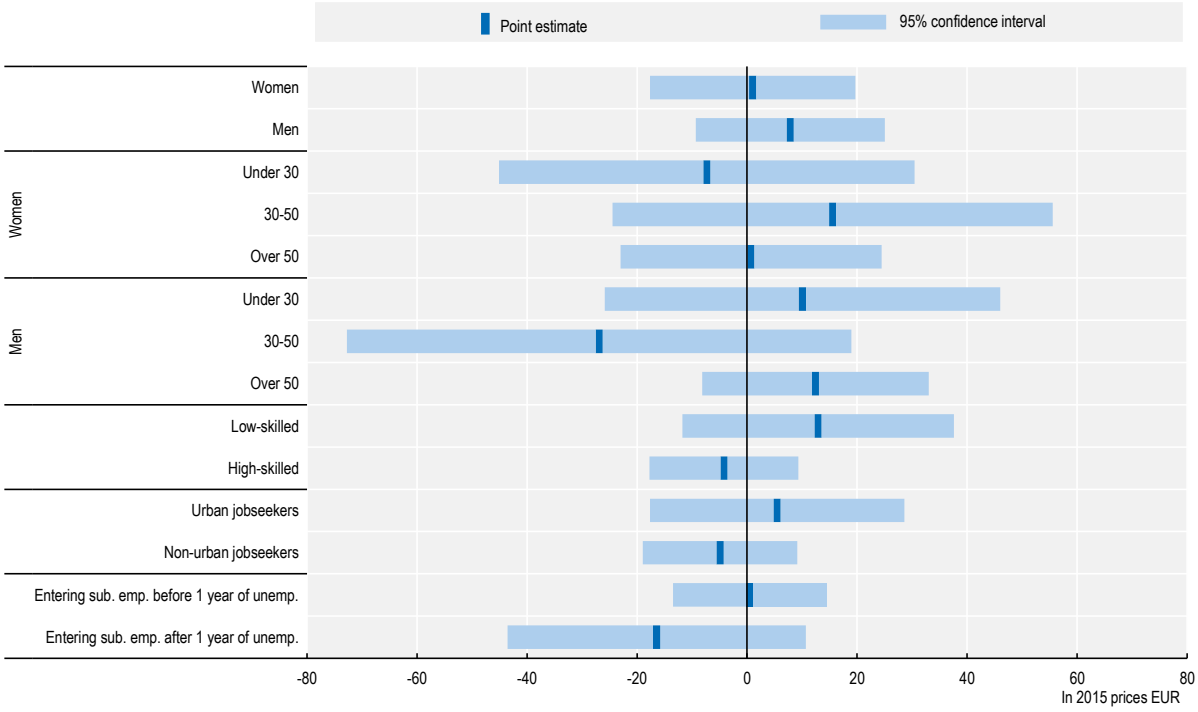


Note: The analysis presents nearest-neighbour propensity score matching results which matches individuals based on a number characteristics: duration of unemployment, age, gender, education, unemployment benefit receipt and level, language and other skills, municipality, employability and barriers to employment, as well as prior employment history and earnings. For every individual in the treatment group, the matching is conducted based on the values of these characteristics in the calendar month when the individual enters the programme. The control group is comprised of individuals with similar characteristics not entering ALMPs in that same calendar month. For paired individuals in the treatment and control groups, this calendar month is then the reference point after which outcomes are measured. The analysis is restricted to the region of common support. The standard errors are calculated based on the adjustment proposed by Abadie and Imbens (2016[1]). The confidence intervals are shown at the 5% level of significance and represented by the whiskers delimiting the dotted lines on the charts.
Source: OECD calculations based on the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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Annex Figure 5.A.3. Estimated effects of employment subsidies on occupational mobility, by jobseeker characteristics

Percentage point change in occupational index for those who were employed 24 months after starting employment subsidies

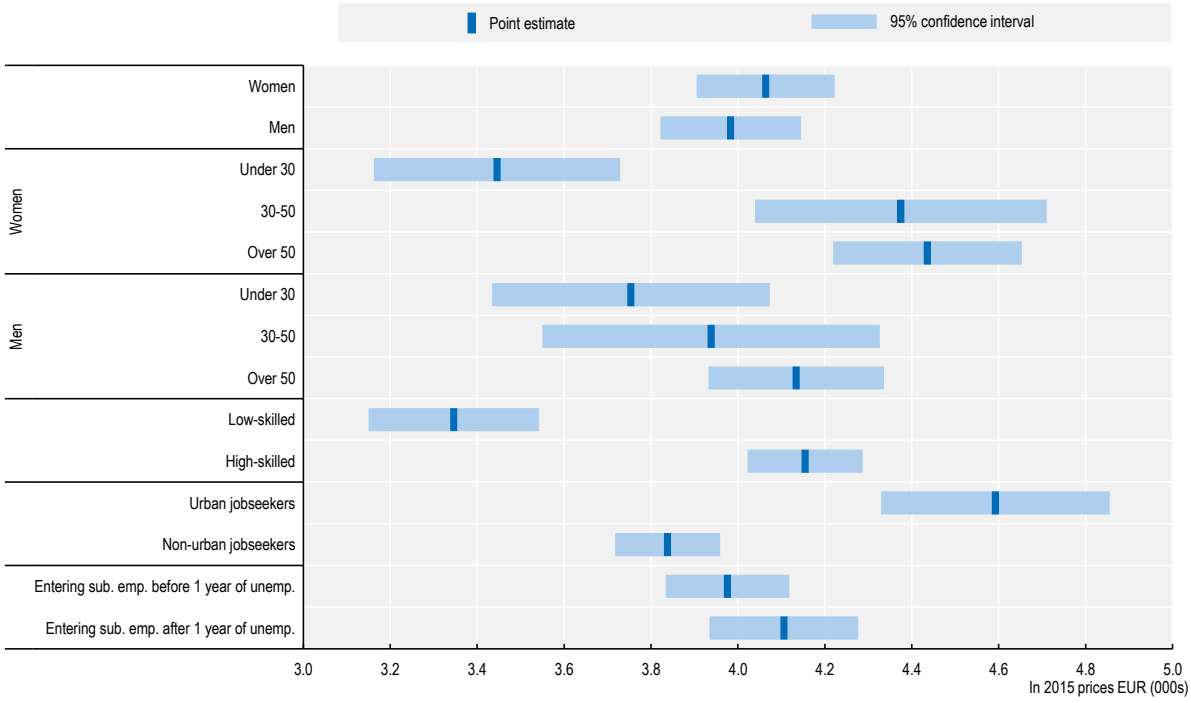


Note: The analysis presents nearest-neighbour propensity score matching results which matches individuals based on a number characteristics: duration of unemployment, age, gender, education, unemployment benefit receipt and level, language and other skills, municipality, employability and barriers to employment, as well as prior employment history and earnings. For every individual in the treatment group, the matching is conducted based on the values of these characteristics in the calendar month when the individual enters the programme. The control group is comprised of individuals with similar characteristics not entering ALMPs in that same calendar month. For paired individuals in the treatment and control groups, this calendar month is then the reference point after which outcomes are measured. The analysis is restricted to the region of common support. The standard errors are calculated based on the adjustment proposed by Abadie and Imbens (2016[1]).
Source: OECD calculations based on the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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Annex Figure 5.A.4. Estimated effects of employment subsidies on earnings by jobseeker characteristics

Change in cumulative earnings at 24 months after starting employment subsidies



Note: The analysis presents nearest-neighbour propensity score matching results which matches individuals based on a number characteristics: duration of unemployment, age, gender, education, unemployment benefit receipt and level, language and other skills, municipality, employability and barriers to employment, as well as prior employment history and earnings. For every individual in the treatment group, the matching is conducted based on the values of these characteristics in the calendar month when the individual enters the programme. The control group is comprised of individuals with similar characteristics not entering ALMPs in that same calendar month. For paired individuals in the treatment and control groups, this calendar month is then the reference point after which outcomes are measured. The analysis is restricted to the region of common support. The standard errors are calculated based on the adjustment proposed by Abadie and Imbens (2016[1]).
Source: OECD calculations based on the Lithuanian Employment Service and Lithuanian State Social Insurance Fund Board.

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Notes

[1] The terminology parallels that in the job creation and job destruction literature, which refers to employment expansion and contraction at the firm level (Davis, Haltiwanger and Schuh, 1996[12]).

[2] Note that internal reassignments – individuals being reassigned to a different job position but remaining within the same firm – appear to play a negligible role in practice in Lithuania (although this empirical result may be due to measurement error: under-reporting of changes within an employer).

[3] These statistics are somewhat smaller than the number of individuals included in employment subsidies because (i) changes are in fact measured only for 11 quarters during the 2018-20 period, and (ii) individuals who had employment spells shorter than three months may not be captured in the statistics.

Connecting People with Jobs

Impact Evaluation of Vocational Training and Employment Subsidies for the Unemployed in Lithuania

This report on Lithuania is the tenth country study published in a series of reports looking into how policies connect people with jobs. This report is produced in the framework of a project of the OECD with the European Commission which aims to raise the quality of the data collected and their use in the evaluation of the effectiveness of active labour market policies (ALMPs). The report uses rich administrative data from different registers in Lithuania to evaluate the impact of two types of ALMPs: employment subsidies and vocational training for unemployed people. The analysis examines the outcomes of the selected ALMPs beyond just the probability of employment and how different population groups are affected. Finally, the report makes recommendations for improving the effectiveness of Lithuania's ALMPs and strengthening the capacity of the Lithuanian authorities in conducting ALMP impact evaluations.

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