



# Job Creation and Local Economic Development 2018: Preparing for the Future of Work

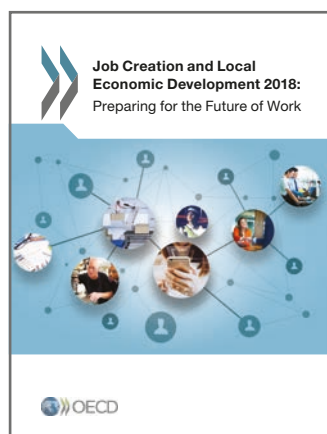


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## About this booklet

This booklet reproduces highlights from the 2018 report *Job Creation and Local Economic Development*. This third edition in the series focuses on preparing for the future of work. It examines the impact of technological progress on regional and local labour markets. Drawing on new data, it assesses the geographical distribution of the risk of automation and whether jobs lost to automation are compensated by the creation of jobs at lower risk of automation. The report also examines the rise of non-standard work, highlighting the main regional determinants of temporary jobs and self-employment. Finally, it considers determinants of productivity and inclusion in regional and local labour markets, as well as policies to foster greater inclusion of vulnerable groups into the labour market.



The full book is accessible at

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## Geography matters for the future of work

Automation of job tasks has been occurring for centuries, boosting productivity and giving rise to new jobs that provide employment and contribute to rising living standards.

However, technological progress also threatens established business models and can lead to job losses because it allows the automation of tasks that previously had to be done by people. The labour saving effects of automation can be sudden, while it often takes more time to create jobs. Furthermore, the skill profiles of jobs that are lost due to automation and the skill profiles of the jobs that replace them typically do not coincide.

Automation can lead to temporary, but possibly prolonged, increases in unemployment. The changing demand for workers with particular skills

affects wage levels. It causes permanent gains or losses for some groups of workers.

Automation and digitalisation translate into job polarisation. OECD countries have seen a decline in middle-wage, middle-skill employment as a share of the workforce over the past two decades, 9.5 percentage points on average over the period 1995-2015. In contrast, workers who perform non-routine tasks have increased their share of total employment, 7.6 percentage points. Typically, these jobs are either high-skilled (e.g. managerial positions) or low-skilled (e.g. personal care services). Both ends of the skill distribution of jobs have increased while the middle has declined.



## Regional differences in employment are growing

Jobs are increasingly concentrated in a smaller number of regions. Over the period 2006-16, in 15 out of the 27 OECD countries considered, more than 30% of net employment was generated in the capital region. In Japan, Finland, Denmark and Ireland, more than 80% of job creation occurred in the capital region (Figure 1).

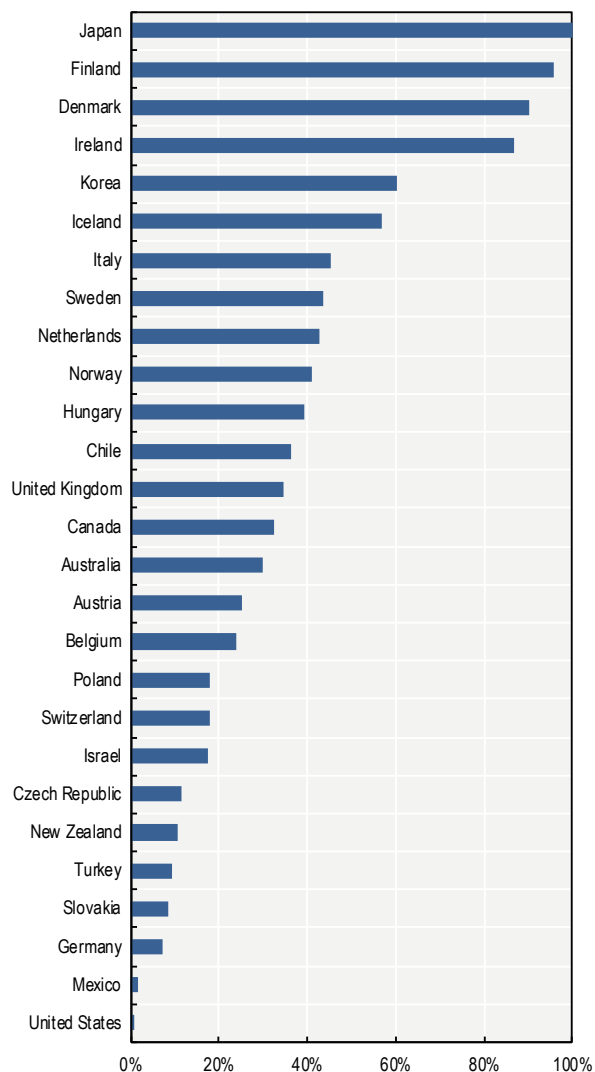
Large regional differences within countries in unemployment rates remain despite the general return of national unemployment rates to pre-crisis levels. Regional disparities are largest in Turkey, Italy, Spain and Greece, where unemployment rates between the best and worst performing regions vary by approximately 20 percentage points. In other countries, regional disparities are smaller but are still around 5-10 percentage points. While larger countries tend to have wider variations, this is not always the case. Japan is the second largest OECD country by population, but has one of the smallest regional differences in unemployment rates.

Skilled workers are increasingly concentrated in particular regions. The difference in the share of tertiary-educated workers across regions has increased over the period 2006-16 in 20 of the 24 OECD countries for which data are available.

Demographic trends such as ageing and migration are contributing to regional labour force disparities. While in some countries all regions are ageing, overall in the OECD, more than half of regions experienced a reduction in the working age population between 2010 and 2016. Outflows of working age individuals tend to affect mainly rural regions. Migration towards urban regions is particularly striking among young people aged 15-29.

**Figure 1. Job creation is largely concentrated in capital regions**

Share of net job creation in capital regions relative to total job creation, TL2 regions, 2006-2016 (%).



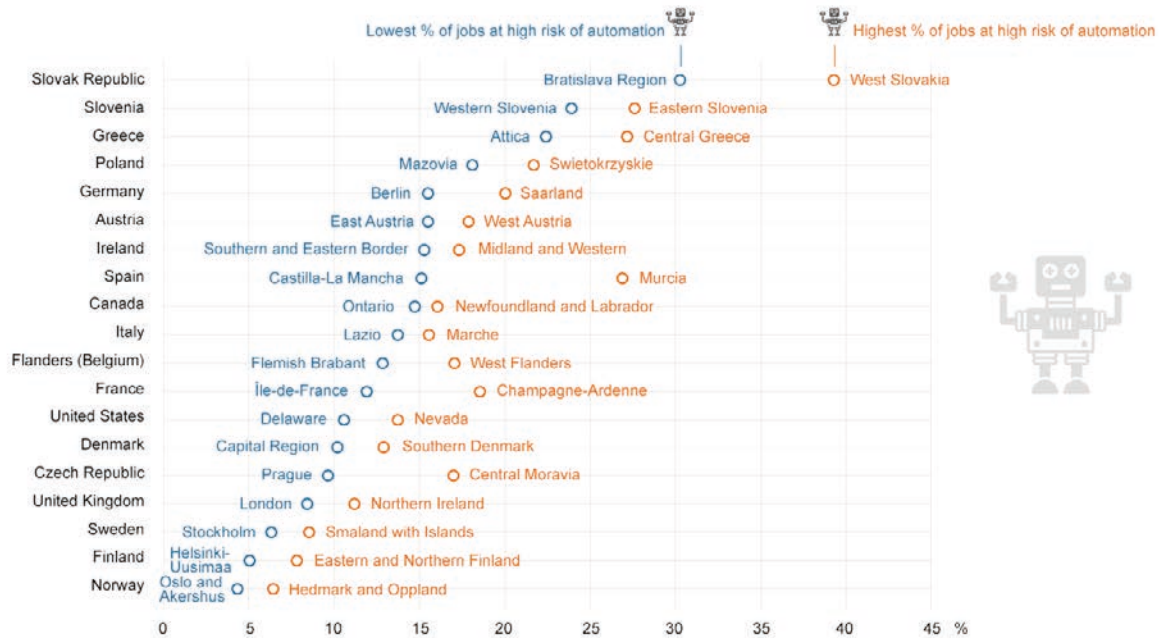
Note: Capital regions in Portugal, Spain and Slovenia lost jobs over the 2006-2016 period. Due to data availability, the values for Chile, Israel and Mexico cover the period 2006-2014.

Source: Calculations based on OECD (2018), OECD Regional Statistics (database), <http://dx.doi.org/10.1787/region-data-en>.



**Figure 2. Share of jobs at high risk of automation across OECD regions**

Percentage of jobs at high risk of automation, highest and lowest performing regions, 2016



Note: OECD TL2 regions in selected OECD countries. High risk of automation refers to jobs with over 70% of risk of being automated. Source: OECD calculations based on Labour Force Surveys.

## The impact of automation on jobs is uneven across regions and local communities

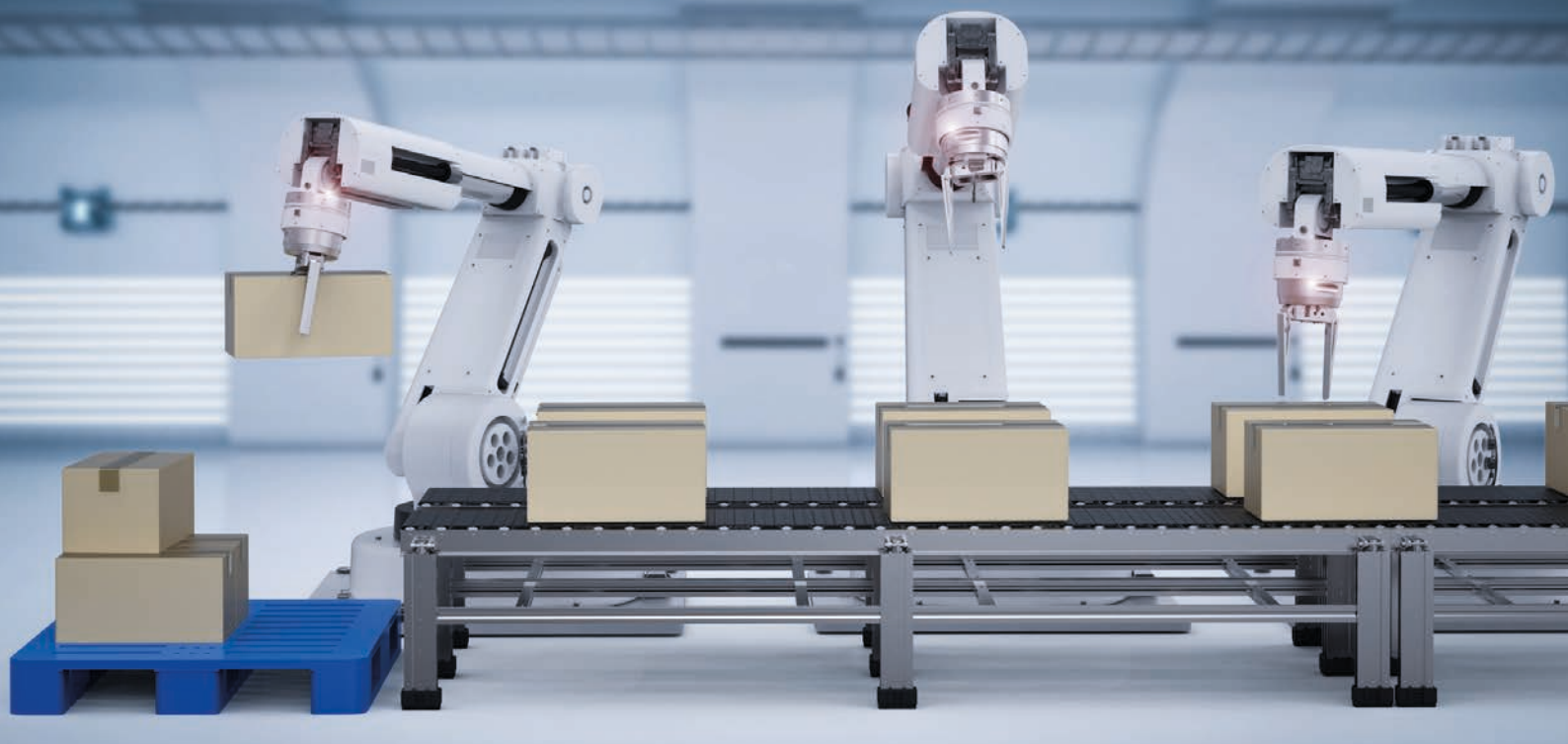
Previous OECD estimates indicate that 14% of all jobs in OECD countries are at high risk of automation – i.e., the probability of automation is over 70%. An additional 32% of jobs are nevertheless at significant risk of automation (a risk between 50%-70%). This suggests that a significant share of tasks will be automated, leading to substantial changes in the way these jobs are carried out.

The risk of job loss due to automation varies a lot among regions and local communities. The difference in the share of occupations at high risk of automation varies over nine-fold across regions in

the 21 OECD countries with data. For instance, the regional share of such jobs reaches almost 40% in some regions (West Slovakia) but can be as low as 4% in others (Oslo and Akershus region, Norway).

The within-country variation in jobs at high risk of automation can be several percentage points. That gap between the regions most and least at risk can be only 1 percentage point, such as in Canada, or as high as 12 percentage points in Spain. When considering a smaller spatial scale, the gap across communities is likely to be even wider.





## Jobs are lost to automation but many others are created

Jobs losses are occurring in occupations with a high risk of automation. Over the period 2011-16, most regions (roughly 80% of regions in the 21 countries considered) experienced a reduction of jobs in occupations at high risk of automation, such as food preparation assistants, drivers and machine operators.

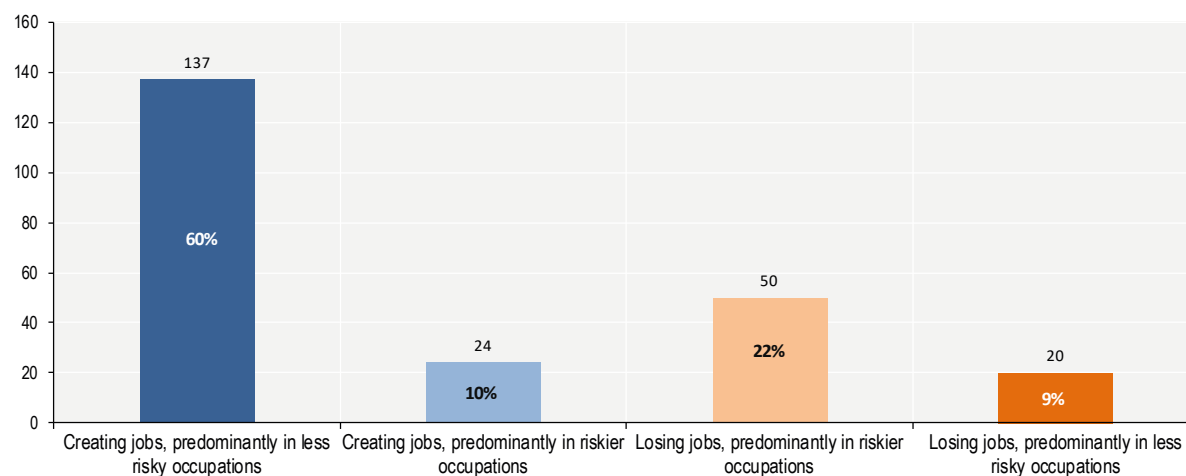
The good news is that new jobs are also created. In about 60% of OECD regions with data (representing roughly the same share of the population) the reduction of jobs in occupations at high risk of automation was compensated by a greater increase in the share of jobs at low risk of automation, such as chief executives and teaching professionals.

Another 10% of regions have also been able to create more jobs than those that are lost. However, the jobs they created are those that are likely to be automated in the future.

Around 30% of regions lost more jobs than they created during the period examined. In most of these regions the jobs lost were at high risk of automation, which suggests a transition towards a more digital economy with jobs at lower risk of automation. However, almost one in 10 OECD regions did not only lose jobs, but did so in those sectors that are at lower risk of automation. This sends a signal that the economy of these regions is becoming more fragile in facing future shocks.

**Figure 3. Some regions are better than others at shifting towards jobs at lower risk of automation**

Number of TL2 regions by categorisation based on net employment changes and the automation profile of jobs, 2011-2016



Note: The height of each bar indicates the number of regions in that specific category. Regions are classified according to two criteria: whether the regional economy is increasing employment (the dark blue and light blue bars); and whether the share of jobs at low risk of automation is increasing (dark blue and light orange bars).  
Source: OECD calculations based on Labour Force Surveys.

## Certain types of regions face a higher risk of automation

The concentration of certain types of jobs at high or low risk of automation in different places can contribute to regional divides. Furthermore, a higher risk of automation is associated with several regional characteristics: lower education levels, a more rural economy, and a larger tradable sector.

Places with a larger share of less-educated workers will be more affected by increasing automation. With some exceptions, the risk of automation decreases as the educational attainment required for the job increases. The analysis shows that regions that have a less-educated workforce have a higher share of jobs at risk of automation.

Rural economies, those with a lower share of the population living in urban areas, are especially at risk of automation. Rural economies have a lower share of service sector jobs that are less likely to

be automated. Smaller towns and rural areas are also more likely to be highly reliant on a handful of employers or on a single industry. While this does not necessarily increase the risk of automation in itself, it makes it more difficult to absorb displaced workers if one of the employers automates on a large scale.

Jobs in the tradable sector also face a high risk of automation, particularly in agriculture and manufacturing. Tradable services are a subcategory that is less exposed to automation.

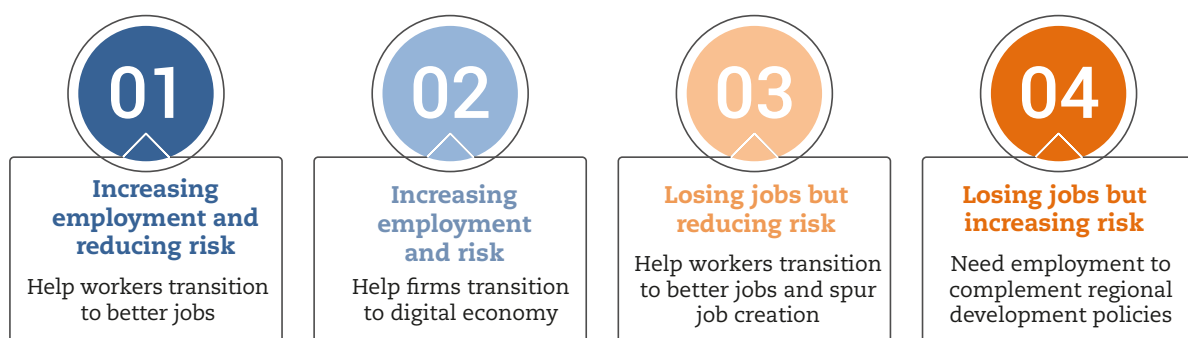
However, research also shows a thriving tradable sector is one of the main factors in helping drive productivity growth of regions below average in a country to catch up. Indeed, the potential for higher productivity growth in the tradable sector comes from greater opportunities for automation.

## What can policy makers do to prepare their regions?

The search for higher productivity may expose regional economies to greater risks of automation. This seems particularly the case for tradable sectors, which are a major driver of regional productivity but include more jobs with a higher risk of automation than non-tradable sectors.

A higher rate of employment creation in the short- or medium-term may be associated with a higher exposure to the risks of automation in the future depending on the kinds of jobs being created. A regional typology based on employment trends and risk of automation provides policy guidance that can help prioritise interventions (Figure 4).

Figure 4. Policy responses will depend on the type of region



Note: The key policy messages in the infographics are part of a more articulated strategy to address each type of region.

Regions in the first category are able to generate employment in occupations that are less subject to automation. These regions seem particularly fit for the future of work. Employment policies should take care of displaced workers due to the reduction of jobs at high risk of automation, focusing on low-skilled workers and disadvantaged groups as they might be among the most affected.

In contrast, regions in the fourth category are likely experiencing a structural adjustment problem. In these regions, employment policies that try to prepare workers for the future of work will fail to succeed if they are not complemented by regional development policies – favouring entrepreneurship and increasing the value-added content of existing firms.



Regions in the second category are increasing employment but are doing so mainly with jobs at high risk of automation. Here the trade-off is being delayed, as present employment gains may not be long-lasting. Such regions need to prepare now for greater automation on the horizon. Any employment strategy needs to be complemented with a regional development strategy aiming at increasing demand for less risky occupations. In fact, upskilling workers might be ineffective if firms are not prepared to offer jobs in occupations at less risk of automation.

Finally, regions in the third category are not doing well in general – they are losing jobs. However, it is mainly jobs in occupations at high risk of automation that are lost, indicating that the economy is in a phase of transition towards a more digital economy with jobs at low risk of automation. Like the first category of regions, employment policies should focus on preparing workers for job opportunities in occupations at lower risk of automation.

### Non-standard work, including the “gig” economy, expands at various speeds across regions, and it often comes at the cost of job quality

The growth of non-standard work, defined as temporary, part-time, and self-employment offers job opportunities for many individuals thanks to the greater flexibility. Some of these jobs are what is now called the “gig” economy. These opportunities can help better match workers to jobs, integrate those who are most marginalised in the labour market or offer new opportunities for work-life balance.

These forms of employment often come with reduced access to social protection and health benefits. They don't give an incentive to invest in skills upgrading in the same way as for a standard employee. And, evidence shows this type of employment may simply be a last resort opportunity and not a worker's choice.

Although temporary and part-time work has expanded across OECD countries, marked differences are to be found between regions of the

same country. In countries like France, Belgium, Hungary, Italy, Spain or Greece, the gap between the regions with the highest and lowest share of non-standard work exceeds 10 percentage points. For instance, in the region of Auvergne (France), the share of non-standard work was 34% of total employment in 2016, while in the region of Ile-the-France that share was only 22%. Differences are also large in Spain, where the share of non-standard work was 46% in Andalusia and a much lower 26% in the region of Madrid.

These regional differences are not surprising, considering that several factors influencing the incidence of non-standard work are local. For example, labour supply and demand in a local labour market determine the ease of substituting one worker for another. Relatively large pools of low-skilled workers, and a high unemployment rate, are associated with large shares of temporary work. Low-skilled workers are more likely to be employed





with a temporary contract in rural areas than urban ones. By contrast, regions with a larger tradable sector tend to employ fewer workers in temporary contracts.

While the rise in temporary work pre-dates the crisis, since 2011 the share of temporary contracts is increasing in regions that are also underperforming in terms of labour productivity.

## Self-employment is increasingly used as a job opportunity of last resort

Self-employment covers a wide range of working arrangements, which have in common the autonomous nature of the work. While many self-employed workers pursue market opportunities as entrepreneurs, others are self-employed because they have been unable to secure dependent employment.

Previous OECD estimates indicate that the proportion of workers who are self-employed is approximately 16% in OECD countries. This figure has remained relatively stable over the last decade. However, there have been several changes in the nature of self-employment. The proportion of self-employed without employees (“solo” self-employment) continues to grow. A contributing factor is the increase in part-time self-employment – which occurred in 25 out of 31 OECD countries with data in the last decade. International research suggests that this growth in part-time self-employment has largely been involuntary.

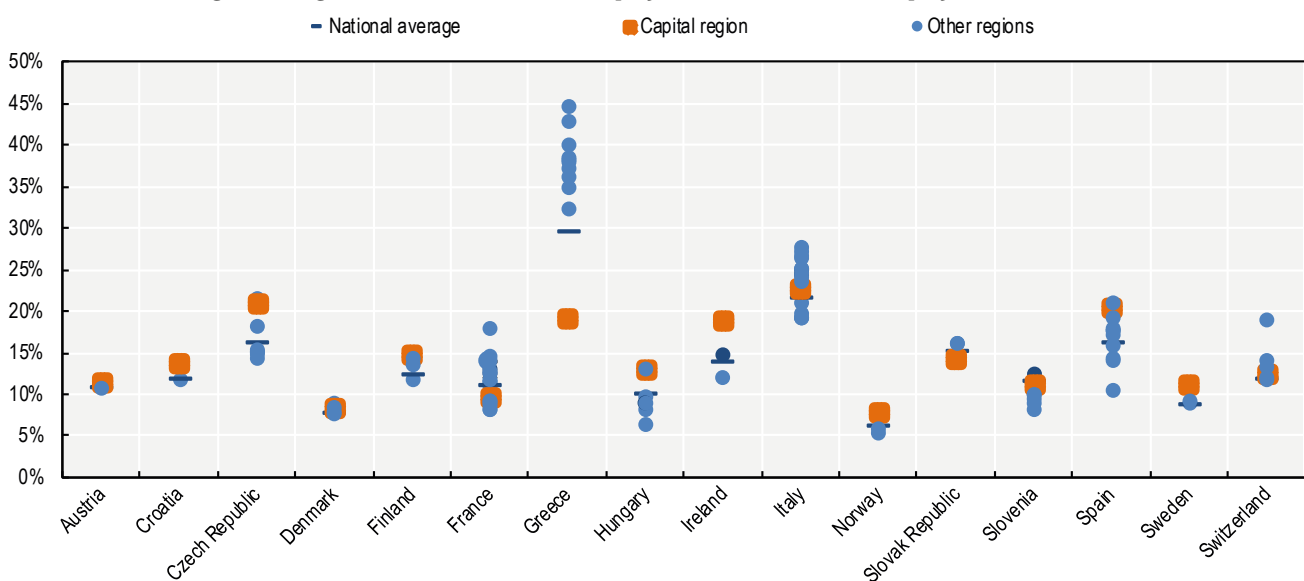
Another important self-employment trend in recent years has been the emergence of the digital economy. It has created new markets, sectors and occupations, and some self-employed workers have harnessed these new opportunities and created

high value added work for themselves. However, the platform or “gig” economy has also introduced more precarious forms of self-employment.

Earnings and job security of the self-employed tend to be less advantageous than standard types of work. Furthermore, the “solo” self-employed are likely to represent the employment of last resort for some workers. A number of such jobs can be described as “false” self-employment because they only have one client and their tasks are similar to a typical salaried employee (i.e. dependent work) and they are registered as self-employed so that firms can reduce their tax liability.

The proportion of workers who are self-employed varies across countries and regions. Variations among regions in the same country can attain 25 percentage points, such as in Greece, or about 10 percentage points, such as in Spain and France. The average across the remaining countries is a 4 percentage point difference between the regions with the largest and smallest share of self-employed workers. Self-employment is concentrated in the capital region in 9 out of 16 EU countries considered (Figure 5).

Figure 5. Regional differences in self-employment as a % of total employment, 2016



Source: OECD calculations based on EU Labour Force Survey.

## Improving the quality of non-standard work will help the most disadvantaged people and places

The rise of non-standard contracts creates a trade-off between job creation and job quality. Countries can address this challenge by improving their regulatory framework in order to include these new forms of jobs (e.g. clarifying the working status of “false” self-employment). Yet, the presence of large regional differences in the share of non-standard work requires local approaches to complement national ones.

To improve the quality of temporary and part-time work:

- ◆ Local policies should develop the skillset of workers in underperforming regions, where the high share of temporary work is more likely the result of workers’ low bargaining power than a choice of the worker.

- ◆ Employment policies should pay particular attention to the working conditions of temporary workers in rural areas where workers have few job alternatives.

To improve the quality of self-employment:

- ◆ Policy support should include entrepreneurship and business management training, coaching and mentoring, and business counselling, as well as improve access to start-up financing and entrepreneurship networks.
- ◆ Policy initiatives should be designed and delivered in an integrated manner, and according to the specific needs of local communities, guiding the entrepreneur from the start-up to post start-up phases.

## There is not necessarily a trade-off between productivity and inclusiveness at the local level

Inclusion is a multidimensional concept, which depends on various aspects of people’s lives, from income and access to education to health and social networks. However, it is largely determined by employment. For this reason, inclusive growth policies should prioritise labour market participation.

Regions and local communities that have high labour productivity also tend to have a high rate of participation in the labour market. Therefore there does not seem to be a trade-off between policy goals to boost productivity and improve inclusion.

When looking at recent trends, about 30% of OECD residents live in regions that have successfully increased both productivity and labour force participation over the period 2006-16 (Figure 6).

By contrast, about 50% of OECD residents live in regions that experienced productivity growth but a decline in labour force participation. This group includes most states in the United States and

provinces in Canada, as well as many of the regions in Spain, Portugal, Ireland and the Netherlands. Considering a wider range of employment, skill and income variables, similar regional trends in terms of productivity and inclusion are found.

Cities are a special case as they tend to be highly productive but gather workers at both high and low ends of the skills spectrum. European cities have overall been more effective than cities in the Americas in increasing both productivity and labour force participation. Cities such as Budapest, Tallinn and Warsaw have been growing more inclusive than cities such as Houston, San Francisco or Queretaro.

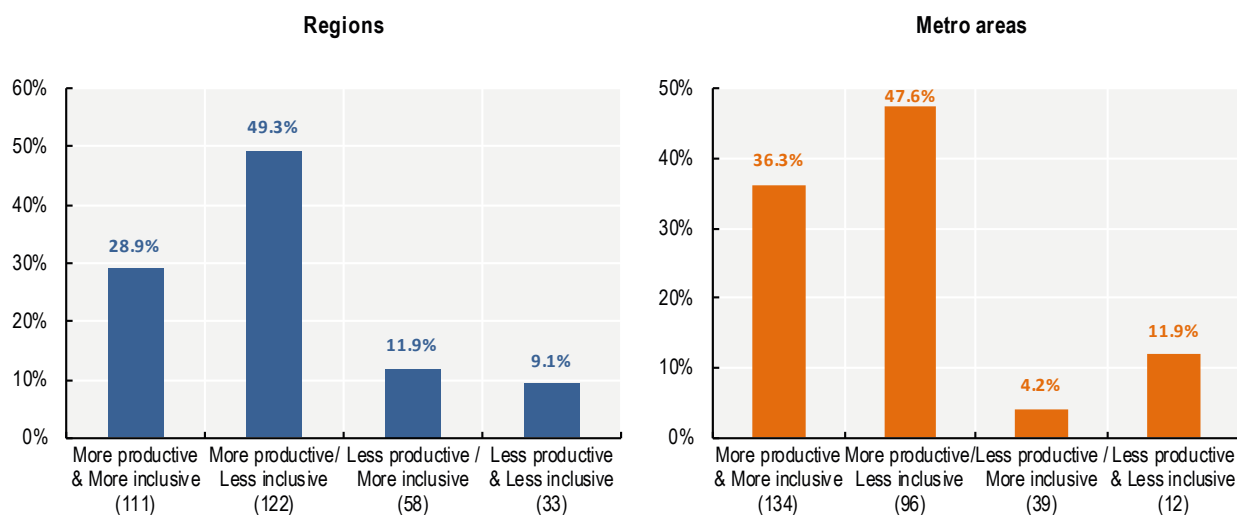
The data makes clear that policies to boost productivity are a necessary but insufficient condition for inclusion. Complementary measures including place-specific actions for labour market integration and access to quality jobs are essential in cases where productivity increases result in less labour market inclusion.

## Tailored policy approaches as well as the social economy can help the most disadvantaged in the labour market

Disadvantaged groups may require targeted programmes to help prepare for the future of work. Different populations such as migrants, people with disabilities, youth, older workers or even Indigenous Peoples, may have different opportunities or particular challenges as the world of work changes.

Lessons from country and local examples of targeted actions for specific communities reveal a few strategies. One is to include pre-employment skills and training and other related support services. Another is to involve the target group in the programme design and delivery. Embedding these integration efforts in community-led development, has also proven helpful.

Figure 6. Half of OECD residents living in places growing more productive but less inclusive



Note: Numbers in parenthesis represent the number of regions that fall under each category. Panel A includes data for regions in all OECD countries except France, Japan, Lithuania, the Slovak Republic, Switzerland and Turkey. Panel B features data from 280 metropolitan areas of 500 000 or more across all OECD countries (except Iceland, Israel, Latvia, Lithuania, Luxembourg, New Zealand, the Slovak Republic and Turkey).

Source: Calculations using OECD (2018), OECD Regional Statistics (database), <http://dx.doi.org/10.1787/region-data-en> & OECD (2018), “Metropolitan areas”, OECD Regional Statistics (database), <http://dx.doi.org/10.1787/region-data-en>

The social economy can also be a driver of inclusion for disadvantaged groups, as an employer, a service provider to such groups or through social innovations that support inclusion. Better mobilising the social economy is a promising opportunity to address labour market inclusion, particularly in light of changes associated with automation.

Social economy organisations, including traditional types and newer forms such as social enterprises, all share a common approach that puts people at the core of their mission (Box 1). Social economy organisations are estimated to account for 6.3% of jobs in the EU28. They mainly operate at the local level, which enables them to both identify and address local needs.

The contribution of social economy organisations is of course not limited to employment and work

integration of disadvantaged groups. These entities also produce goods and services that create a social, economic and/or environmental impact in different sectors of activity. For instance, they create innovative health services for the elderly or new and sustainable forms of tourism, transportation, and delivery of renewable energy. The social innovations that support inclusion are additional benefits from developing the social economy.

Supporting social enterprises through better framework regulations, access to mainstream financing (including guarantees), and tailored business support are some of the ways to boost the social economy. Social economy organisations further benefit from public sector support through public procurement, employment subsidies and longer-term funding cycles.

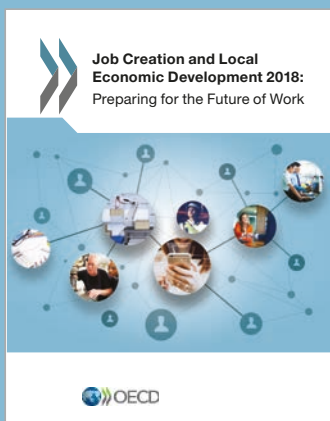
### Box 1. What do we mean by the social economy and social enterprises?



Social economy organisations traditionally refer to the set of associations, co-operatives, mutual organisations, and foundations whose activity is driven by values of solidarity, the primacy of people over capital, and democratic and participative governance. Among social economy organisations, social enterprises, which emerged more recently, distinguish themselves by a more pronounced entrepreneurial approach - their source of income coming primarily from commercial activities, rather than grants and donations. Social enterprises may emerge from the social economy or be outside of the social economy.

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## Job Creation and Local Economic Development 2018

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