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*A quickly transforming
labour market*

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A QUICKLY TRANSFORMING LABOUR MARKET

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Abstract

The Covid-19 pandemic has made it clear that the labour market situation can change extremely rapidly when there is an unexpected exogenous shock to the economy. Even though the transformation of the labour market as a result of the development of ICT (Information Communication Technology) industries facilitates more-flexible conditions, it is now more important than ever for EU Member States to improve the functioning of their labour markets. Member States need to increase possibilities for training and retraining throughout peoples' working lives in order to smooth the transformation into a digital world of work.

Keywords: Digital transformation, automation, job polarisation, platform work, contractors, adult education, firm-based training, basic income, employment production.

JEL codes: O31, J42

1. Introduction

An early working paper by Frey and Osborne (2013) showed that, according to their calculations, around half of the jobs on the US labour market would disappear as a result of automation. Later studies have shown a more nuanced picture of the automation and digitalisation since, it is argued, new types of jobs would develop instead. This was also acknowledged by Frey in a later study (Frey 2019, Grafström 2020). Economies in some Member States have been able to adjust to earlier structural shifts and there are many jobs today that did not exist some 30 years ago. Nevertheless, the quick transformation raises many questions in connection with digitalisation and research is quite extensive in this field. This paper will present where digitalisation stands today. We will call upon Member States to increase possibilities for training and retraining throughout peoples' working lives to smooth the transformation into a digital world of work.

2. Digital transformation leads to creative destruction

Professor David Autor, who is one of the leading researchers in the field of the technology-labour market, asks the question why there are so many jobs at all in the age of automation (Autor 2015). History shows that every major transformation in the labour market has been met with scepticism and fear. The most famous example is that of the so-called Luddites in Britain, who smashed their machines during the Industrial Revolution for the fear of them taking their jobs. But even if their jobs disappeared, new jobs came in their place. Automation does indeed substitute for labour but, as Autor shows, the decisive factor is the extent to which the machines are complements to

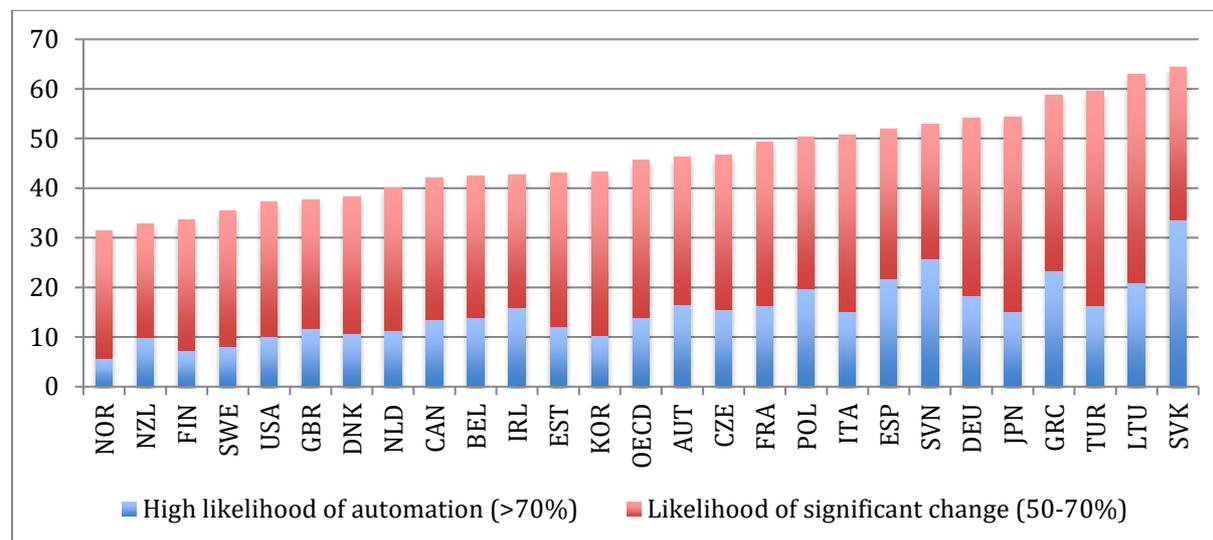
labour i.e., to what extent automation makes it easier for employees to perform their tasks both more efficiently and more safely. Another crucial factor is the difficulty of automating subconscious knowledge inherited by generations. However, the rapid development of artificial intelligence (AI) may mean that, in a not-too-distant future, increasingly sophisticated and abstract knowledge can be used by computers and robots (OECD 2019a). For example, who would have thought some years ago that self-driving cars would be a possibility, since many different types of subconscious knowledge are used in driving (Blix 2015).

The OECD (2019b) shows that around 14% of jobs will disappear and a further 32% will change their composition due to automation in the coming 10-20 years in OECD-countries,¹ where the calculations are based on the OECD Survey of Adult Skills (the so-called PIAAC study).² In the Nordic and English-speaking countries, the transformation is estimated to be slower (below 40% in total) while countries like Italy, Spain, Germany, and Greece would see noticeable changes in their labour markets of more than 50% in total (Figure 1).

¹ OECD stands for the Organization for Economic Cooperation and Development and has 38 member countries.

² PIAAC stands for the Program for the International Assessment of Adult Competences and is a cyclical, large-scale direct household assessment performed by the OECD.

Figure 1: Share of jobs with a high probability of automation or significant changes, as a percentage of all jobs, 2012 or 2015.



Note: A list of country abbreviations can be found in the Supplement. Some of the countries were represented in the 2012 PIAAC-study and some were represented in the 2015 PIAAC-study. Source: Nedelkoska and Quintini (2018).

There might be some explanations to these differences. In countries where automation was early (like Sweden) there might be less room for further improvements compared to countries lagging behind (Graetz et al 2018). Another explanation might be the structure of the industries; automation has mainly been progressed in blue-collar industries, while white collar industries are lagging behind (Andrews et al 2016). In some countries' employment-protection laws are quite strict, which prevents a rapid transformation (Uddén Sonnegård 2017) and in some countries trade unions might not be open to the change. In Sweden, trade unions have historically been positive towards structural changes (Stern et al 2021), while in some countries, this might not be the case. Digitalisation, globalisation, and demographic trends call for more-flexible labour markets, where firms would swiftly be able to make necessary adjustments in their workforce.

3. Job polarisation more pronounced, but not a new phenomenon

Autor et al (2003) divides working tasks into three categories: *routine* tasks, *manual* tasks, and *abstract* tasks. Routine tasks are performed by professions such as accountants, administrative officers, personnel managers, and other professions that can easily be codified and automated. Manual tasks apply to occupations based on face-to-face treatment such as service jobs, cleaning, various jobs in the health sector and in the security industry. Abstract tasks require qualities such as problem solving, intuition and creativity and apply to professions in a particular profession, technical, and managerial professions. The tasks are linked to the level of education where, preferably, the low-skilled perform manual tasks and the highly educated perform abstract tasks. Autor (2015) shows that in the US, jobs of a routine nature have decreased that is, those in the middle of the wage distribution, while both manual and abstract jobs have increased. This is explained by the fact that technological changes have affected how the tasks can be performed. This phenomenon is called job polarisation (Goos and Manning 2003).

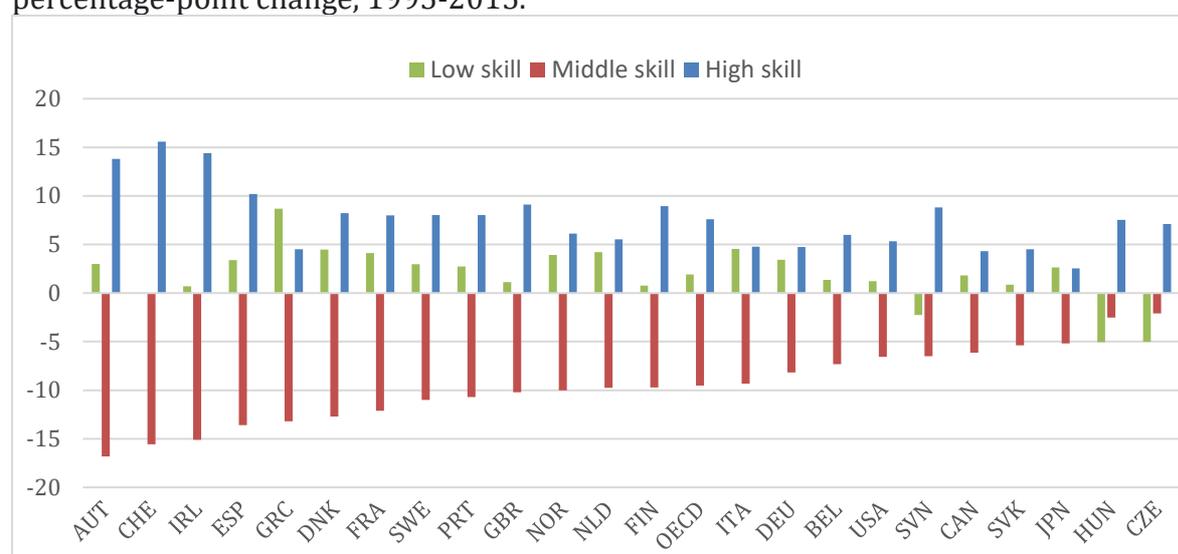
Goos and Manning have illustrated job polarisation in 16 EU-countries during the period 1993-2010, where the different categories were classified based on their salaries: high-wage, middle-wage, and low-wage jobs (Goos et al 2014).³ In all the countries studied, middle-wage jobs had decreased during the period, while low-wage and high-wage jobs had increased in most countries. In Ireland, Belgium and Spain polarisation was more pronounced compared to countries like the Netherlands, Germany, and Portugal.⁴

³ The countries studied were Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, and the United Kingdom.

⁴ Middle-wage jobs decreased by 18% in Ireland, by 12.1% in Belgium, by 12% in Spain and by 7.6% in the Netherlands, by 6.7% in Germany and by 4.9% in Portugal (Autor 2015:15).

OECD calculations also show that most countries have polarised labour markets. In particular, the share of employment in high-skilled jobs has increased while the share in middle-skilled jobs has decreased (Figure 2). The greatest changes in EU-countries have occurred in Austria, Spain, and Greece, while low-skilled jobs have *not* increased in Ireland, Finland, Belgium, and Slovakia. This development accords with the increase of labour-market demand for cognitive skills, such as written and oral expression, numeracy, reasoning, and complex problem solving during the last decade, while demand for routine and physical abilities has dropped significantly (OECD 2019a).

Figure 2: Labour-market polarisation, share of total employment by skill level, percentage-point change, 1995-2015.



Note: See Supplement for country abbreviations.
Source: OECD (2017).

In the Swedish debate, criticism of the polarisation hypothesis has been raised from a sociological point of view (Tåhlin 2019). The main argument is the narrow definition of polarisation, since it is assumed that changes in the labour market are *only* due to automation, disregarding other technological and institutional factors. The polarisation model can indeed be explained by the long-term structural transformation of the labour market, but this is not a new phenomenon according to Tåhlin (op.cit). The

transition from manufacturing to service has been going on for several decades and the shift from male-dominated jobs (more well-paid jobs in manufacturing) to female-dominated jobs (low-paid service jobs) has also been going on for many years, even before the advent of digitalisation. Another point of criticism is the way jobs are classified. Typically, salary data are used instead of qualification requirements. Tåhlin (2019:19) instead uses the level of education as a proxy of qualifications and then the Swedish development becomes much less dramatic; there has been a continuous upgrade of qualifications in the labour market, but no job polarisation. In Figure 2 the polarisation hypothesis is less evident in countries like Ireland, Belgium, and Finland where the increases in low-skilled jobs have been marginal.

To some extent the criticism may be justified, but regardless of method used, there is a continued structural transformation going on, which can be significantly faster than previous experience. It will be necessary for Member States, municipalities, and other actors to implement reforms so that the negative effects from this rapid transformation do not become too profound in society. Member states have also shown that this is possible during the Covid-19 pandemic.

4. Platform-based work is limited, but becoming a complex issue

A new type of labour market that is emerging in the wake of digitalisation is the so-called *gig-economy* (sharing economy or on-demand economy). This part of the economy is based on employees taking on assignments instead of being employed by an employer. The acquisition of assignments is facilitated by the fact that *contractors* and *clients* can meet on different platforms. Well-known examples are Uber and Amazon Mechanical Turk. In the former case, the service is performed on-site, but in the latter

case, the service can be performed anywhere. Then the person carrying out an assignment does not need to meet the client in real life but can work with the assignment via the internet. This means that the whole world is a marketplace, and that collaboration can take place globally. This creates a socio-economic value.

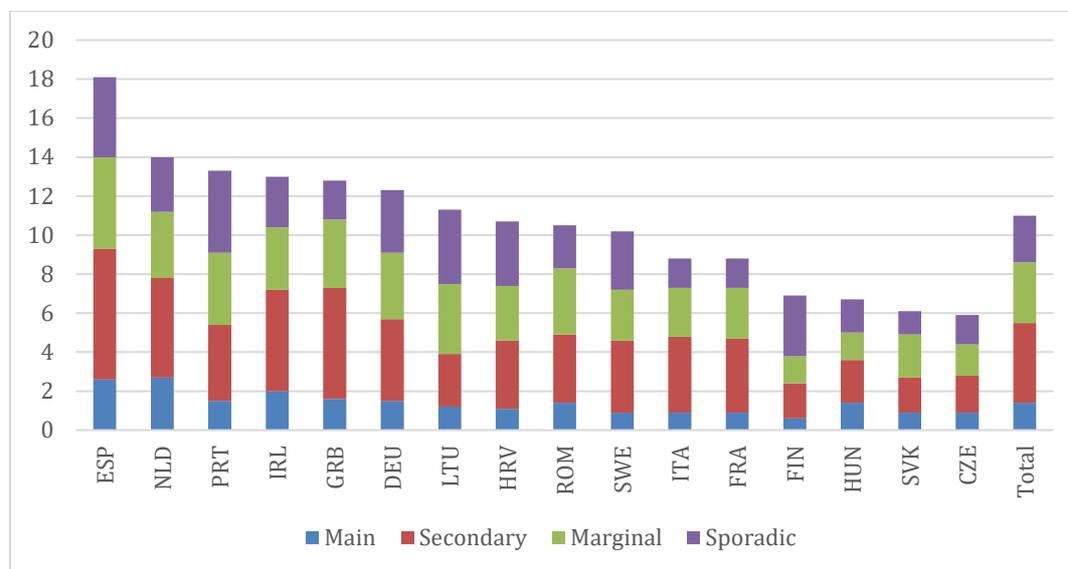
Workers on the platforms (contractors) are often self-employed but do not have to be. They typically have contracts with “very short hours” or “on-call” work, including “zero-hours” contracts.⁵ Platform work would thus be expected to lead to an increase in *non-standard* employment with atypical contracts that are not the same as traditional temporary contracts. But contracts may have more standardised designs and then the relationship between platform and contractor may be more similar to a regular employment relationship. Often an evaluation function is linked to the platform so that future users will receive information about how successful previous transactions have been.

So far, platform-based work is not used to a great extent in Europe. According to the so-called COLLEEM-survey (a pilot study of some EU countries’ platform use) there is around 1.4% of the working age population in 16 EU-countries that spend more than half of their working time on platform work or get their main income (more than 50%) from platform work (Figure 3). In total 8.5% use a platform for work, if we disregard those who just have tried it, but do not use it regularly (labelled *sporadic* in Figure 3). In Spain and the Netherlands, more than 2% of the working-age population use a platform for their *main* work (Urzi Brancati et al 2020). The highest share of platform work is noted in Spain (14% excluding sporadic work), while in the Netherlands and Ireland,

⁵ Zero-hours contracts are primarily used in the United Kingdom and is an employment contract in which the employer is not obliged to provide any minimum number of working hours (from Wikipedia).

around 10% use a platform for part of their working life. In Portugal and Germany, the share is somewhat lower.

Figure 3: Intensity and relevance of platform work – estimates combining information on income and hours worked, percent of working-age population, 2018.



Note: Main(secondary) means work of at least 20(10) hours a week or income more than 50(25)% from platform work. Marginal means less than 10 hours a week or income less than 25% from platform work. Sporadic means less than once a month – may have tried it. See Supplement for country abbreviations. Source: Urzi Brancati et al (2020).

In the former study by the same authors from 2017 results were similar (Pesole et al 2018). There was a small but clear increase in the prevalence of platform work in all countries apart from Italy and Slovakia between 2017 and 2018. In the 2017 study a typical platform worker was identified as a young male with an academic degree and family obligations. In the 2018 study, this would still hold but the family situation was even more pronounced. The fact that the platform worker would have dependent children are important from a policy point of view. In the 2018 study it was also noted that the proportion of young women had increased, but from a low level, especially among those who did it as a secondary activity. Foreign-born workers were also more likely to use platforms according to the COLLEEM-survey. A Swedish interview study of platform work in the food-delivery industry, where most workers were foreign born,

concluded that for many platform workers the work was perceived as temporary and as a steppingstone to a permanent position (Weidenstedt et al 2020).

Another challenge from platforms is the tendency among successful digital platforms to form strong monopoly positions in their respective markets. They can use their special position as intermediaries of a certain service (buyers of labour) and act as a *monopsonist* in the labour market. In other words, the platform can buy a service from the contractor at a price or salary determined by the platform, which is not negotiable. An example of the latter relationship is Uber, that uses self-employed taxi drivers instead of hiring drivers. Uber claims that they pay their drivers a higher compensation than regular drivers (according to a survey they conducted in the US market) but they do not bear any fuel costs, service on the vehicles or pay any social insurance fees (Söderqvist, 2016). In addition, the drivers are usually self-employed and are responsible for their own accounting and for the payment of taxes and social security contributions.

Even though the incidence of a platform as a main source of income for the present is low, this type of work might increase in the future. It is not clear whether the platforms will simply be used instead of more traditional intermediaries in the labour market or whether they will lead to large increases in self-employment and atypical forms of work. It is also unclear how these new forms will affect the skills development of the workforce. If more and more people start getting their jobs via platforms and the proportion of platform workers in the labour market is large, issues of regulation, conditions and wages will become increasingly important. However, regulation in this area could prevent jobseekers who are far from the labour market from finding work,

even though platform workers also need social security and the same opportunities for skills development as others (OECD 2019a). Nevertheless, this is an important group of workers that can be expected to grow, particularly as unemployment has surged as a result of the Covid-19 pandemic.

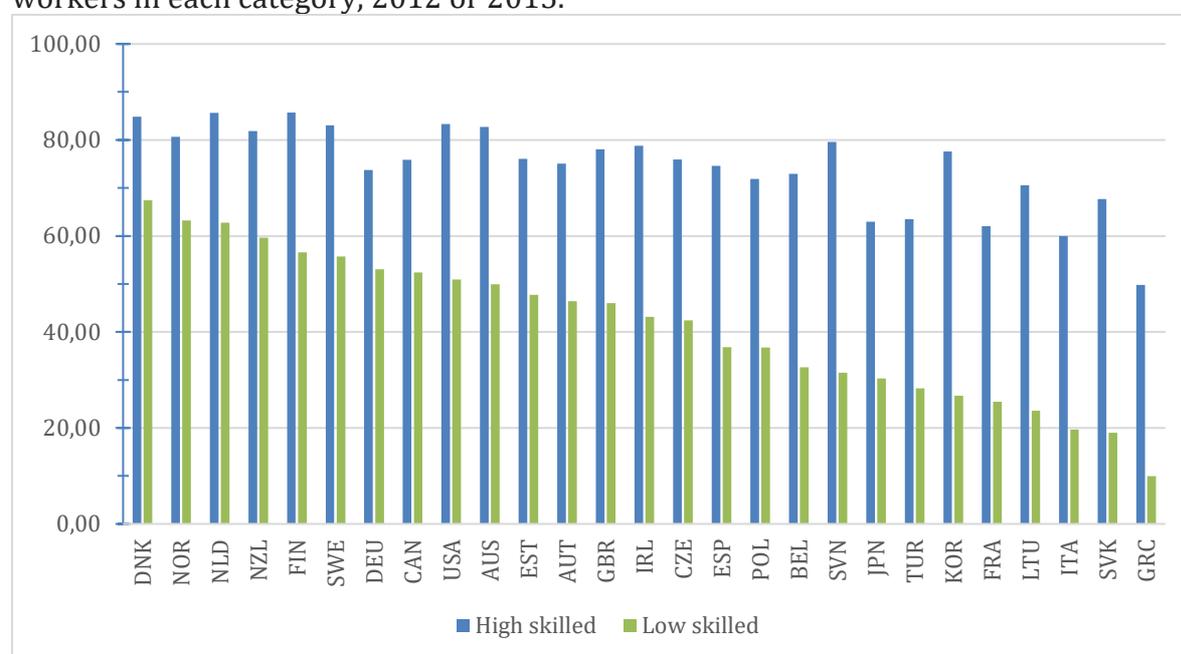
5. Adult education is crucial

Higher skilled workers who perform non-routine tasks primarily benefit from digitalisation since their skills are more easily transferable to other jobs. *Transversal* skills are critical for transformation into a digital economy. Such skills are to think critically and creatively, solve problems and make informed decisions when using the technology. Low-skilled workers face instead the risk of their tasks being computerised and robotised. Transitions into other occupations with manual tasks seem to be possible for all workers but are not always acceptable since they may entail wage cuts (OECD 2019b). For low-skilled workers it is therefore crucial to up-skill or re-skill. In general, however, low-skilled workers participate less in firm-based training. In the Nordic countries, English-speaking countries, and the Netherlands more than 80% of the high-skilled workers receive firm-based training while in a number of EU-countries less than 40% of the low-skilled workers participate in training, though for them it is crucial (Figure 4).

There might be different reasons for low-skilled not to engage in adult learning; time constraints and low motivation play a role, but also barriers like lack of basic skills and financial possibilities. Investments must be made in adult education. It should be made more inclusive by providing better information and guidance. Adult education needs to

be better adapted to companies' demands and informal knowledge must be validated. Funding of adult education must be resolved with both the governments, employers, and individuals as responsible parties (OECD 2019a). One way to facilitate funding would be *personal training accounts* or *life-long training rights*. Another way would be to involve social partners like in Sweden where they have agreed on training accommodated by the employers for workers on open-ended contracts as well as for workers on temporary contracts.⁶

Figure 4: Firm-based training for low- and high-skilled workers, as a percentage of workers in each category, 2012 or 2015.



Note: OECD-calculations based on the Surveys of Adult Skill (PIAAC) in 2012 or 2015. See Supplement for country abbreviations.

Source: OECD (2019b).

6. Safety net for precarious workers

There are reasons to review the social insurance system in the light of digitalisation. The OECD, as well as many others, argue that the unemployment insurance system must be

⁶ This will be one part of the new Employment Protection Legislation, which presently is prepared by the Swedish government.

made compulsory since people do not seem to want to pay for an insurance on a voluntary basis (OECD 2018). However, if the unemployment insurance is made compulsory, the conditions must also be reviewed so that there is a possibility for e.g. platform workers to meet the requirements for receiving compensation in the event of unemployment. In systems where the employers pay social contributions the important question is: who should pay the social security contributions if there is no defined employer? The challenge is also to design the tax system in an economy with more individual employment contracts and precarious employment. However, since all communication is digitised on a platform it should be possible to follow payment flows between the platform and its contractors. Therefore, it should be possible to adjust tax systems to function in a world with more of non-standard work.

Another issue which has been discussed is whether a *basic income* or a *citizen salary* would solve the problems in the current social insurance system. In Finland, an experiment was carried out between 2017 and 2018, which gave the unemployed participants around 560 euros a month (Hiilamo 2020). The result of the project was fragmented; those who took part in the experiment were feeling better, but they were still unemployed. OECD has also analysed this question and warns against using basic income and means that it would have to be so low that it would be below the absolute poverty line in all OECD countries. If basic income would be sufficiently high for people to support themselves, it would be necessary with larger tax increases and/or budget cuts (OECD 2018). However, the strongest objection to basic income is that the incentives to work would be weakened.

7. Policy considerations in a digitalised world

The digital transformation of the economy inevitably leads to changing working conditions and structural changes in the labour market; it must both be adaptable and resilient. The transformation requires companies to be flexible and the workforce to be mobile. Regulations for starting up companies or liquidating companies must be simple and transparent. Employment protection should be less stringent as to facilitate companies in adjusting their workforce to changed business conditions. The workforce must be able to move between companies, develop their skills and make a career. It is important that there is an opportunity for everyone to increase their skills throughout the life cycle. There is also a need for a social security system that protects those who lose their jobs. A well-oriented labour market policy with measures for adjustment is also needed.

Whatever policy measures implemented to cushion the transition into a digital world they must strengthen the work-first principle and not weaken it. When the effects of the Covid-19 pandemic wear off, member states should re-evaluate policy measures from a long-run perspective of a digital economy. Social partners will have an important role to play in the transition and the social dialogue should be strengthened. Collective agreements are also presented as an important part of the digital society of the future (OECD 2019c). If nothing else, those who work in precarious jobs would benefit from being covered by collective agreements, if trade unions were to offer their services to them as well.

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Supplement: Country Abbreviations

AUS	Australia	ROU	Romania
AUT	Austria	SVK	Slovakia
BEL	Belgium	SVN	Slovenia
CAN	Canada	SWE	Sweden
CHE	Switzerland	TUR	Turkiet
CZE	Czech Republic	USA	USA
DEU	Germany		
DNK	Denmark		
ESP	Spain		
EST	Estonia		
FIN	Finland		
FRA	France		
GBR	United Kingdom		
GRC	Greece		
HRV	Croatia		
HUN	Hungary		
IRL	Ireland		
ISL	Iceland		
ITA	Italy		
JPN	Japan		
LTU	Lithuania		
LVA	Latvia		
KOR	South Korea		
NLD	Netherlands		
NOR	Norway		
NZL	New Zealand		
POL	Poland		
PRT	Portugal		