
41. The future of work

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41.1 INTRODUCTION

Driven by the exponential increase in the computational power of machines, data digitalization and scientific advancement in robotics and automation, the current wave of technological change is seemingly unprecedented in speed and scale. It transforms manufacturing and businesses making them more flexible, decentralized and efficient (Lasi et al. 2014). Even though technological change is nothing new, some argue that it is different this time. The new technologies have not only the potential to substitute labor (Nomaler and Verspagen 2018), they also change the way people work. The trend towards new forms of employment is no longer a marginal phenomenon. Across Organisation for Economic Co-operation and Development (OECD) countries, 16 percent of workers are self-employed and another 13 percent are on temporary employment contracts (OECD 2019). Gig jobs, crowd workers or app-based work are just some of the new forms of non-standard employment (NSE) that provide opportunities and autonomy for workers, but are also criticized for their lack of protection and precarious working conditions (De Stefano 2016).

The change in labor demand and the move away from traditional forms of employment carry risks for both the individual and society. Existing social protection systems, modeled after traditional post-war career paths of a single skill set for a single employer, may no longer be adequate to protect workers and their families against economic shocks or job displacement. At the societal level, income inequality may further increase if no additional support is provided to displaced workers in an increasingly skill-based labor market.

In this chapter we want to answer the question to what extent current social protection systems are equipped to deal with the changing nature of work. The focus is primarily on developed countries with mature welfare states and well-established social protection systems. The chapter starts with an overview of how the world of work is changing and discusses the implications for social protection. Given the challenges ahead, we then continue with a review of possible options for how to maintain and strengthen the protection of individuals and families against risks in the future.

41.2 THE CHANGING NATURE OF WORK

The current literature seems to agree that changes in labor market structure, employment form and income distribution are destined to happen in what is sometimes called the fourth Industrial Revolution (Lasi et al. 2014). However, what the equilibrium may look like is highly uncertain. Predictions range from the end of work, where workers will be replaced by robots, structurally lower levels of employment, where some jobs will be definitively lost but some displaced workers will find jobs in newly created sectors after up-skilling or retraining, to rebound, whereby technology induces an initial drop in employment but soon returns to

a regular rate (or more) as new jobs and sectors are created and workers change to different sectors (Vermeulen et al. 2018).

Technological business leaders such as Bill Gates (Fortson 2018) and Elon Musk (CNBC 2016) have publicly suggested that automation will take over all jobs in the future, which seems to be supported by recent evidence that the number of robots in industry is increasing quickly (World Bank 2019). Yet, employment rates remain high even in countries with a high rate of robot density per worker (World Bank 2019). Technological change might also create new job opportunities and new job positions (World Bank 2019).¹ The World Bank (2019) has compared different predictions from recent publications and concluded that the results differ so widely that no concrete figure could be given as to how levels of employment will develop. Factors affecting the development include the speed of automation (Goolsbee 2018), the mobility of the labor force (Vermeulen et al. 2018) and the extent to which the education infrastructure responds (Goldin and Katz 2007). Despite the uncertainty regarding the net effect on employment, technology is transforming the economy. Particularly middle-skilled, routine-based jobs are slowly replaced by automation and machines (Katz and Margo 2014), while technological change is expected to stimulate the demand for high-skilled workers (Autor et al. 1998).²

But technology not only affects the level of employment, it also changes the way and the conditions under which people work (World Bank 2019), resulting in work relationships that deviate from standard employment relationships.³ Firms have not only benefitted from new technologies (OECD 2018), but also from institutional changes. In their endeavor to make labor markets more flexible, many governments in continental Europe have made provisions in the labor laws allowing for atypical contracts (Bussolo et al. 2019), resulting in the proliferation of NSE contracts (Bonoli 2016; Eichhorst et al. 2017). From the workers' perspective, digital innovations make self-employed entrepreneurship more accessible and create opportunities across geographical barriers and time zones. The flexibility of new employment forms benefits those that may not have been able to work before (e.g. people with disabilities or stay-at-home moms), yet it also challenges the standard employment relationship, thereby potentially blurring the rights and obligations between the employee and the employer.⁴

Labor market segmentation and the casualization of employment are fueling disparities. Workers employed under non-standard contracts face wage penalties. They earn lower wages compared to people under standard contracts (OECD 2015). Interestingly, the wage penalty is larger for temporary workers while it is less significant in the case of part-time workers. Poverty rates are higher among workers employed under non-standard contracts (OECD 2015). The at-risk-of-poverty rate for the self-employed is three times higher compared to the employed with more 'traditional' contracts in Europe in 2015 (Spasova et al. 2017). Young people with temporary contracts have a lower chance of moving on to more stable jobs. They have fewer training opportunities and are more likely to move in and out of work (ILO 2016).

¹ There are several historical examples such as the introduction of Automated Teller Machines (ATMs) in the United States in the 1970s that contributed to create more bank teller jobs (ILO 2018).

² This trend is confirmed, for example, by Acemoglu and Autor (2011), Acemoglu and Restrepo (2017) and Graetz and Michaels (2015).

³ Full-time, permanent, usually in the employer's premises and under its supervision (Schoukens and Barrio 2017).

⁴ For the definition of employment relationship, see: http://wcmstraining2.ilo.org/ifpdial/areas-of-work/labour-law/WCMS_CON_TXT_IFPDIAL_EMPREL_EN/lang--en/index.htm.

Non-standard workers, particularly those working on demand or in the gig economy, do not benefit from the same protection as workers on long-term contracts. Indeed, buyers or platform organizers do not have the responsibility over the well-being of this workforce as traditional employers have for theirs (De Stefano 2016). The undeclared employment relationship denies these workers from getting ‘access to the rights and benefits associated with employment in the areas of labor law and social security’.⁵

The quality of non-standard jobs, particularly in the platform economy,⁶ is often unsatisfactory and may lead to a ‘race to the bottom’ if not properly regulated (OECD 2017). Entry barriers are considerably lower in the platform economy resulting in more competition and increasing the pressure on pay and working conditions (Drahokoupil and Fabo 2016). Even though crowdsourcing platforms comply with general commercial law or consumer protection regulations, workers have little bargaining power (Valenduc and Vendramin 2016). The lack of unions or other forms of workers’ cooperatives to fight for their rights further increases the vulnerability of old and new NSE (Westerveld 2012). Empirical evidence indicates that platform workers are not different from standard employees in their perception of trade unions, yet there are few unions actively reaching out to them (Vandaele et al. 2019).

41.3 IMPLICATIONS FOR SOCIAL PROTECTION

The rise in NSE and particularly the various forms of platform work put achievements of post-war welfare states, such as the decommodification of work (Esping-Andersen 1990), at risk. Humans are considered a service in the gig economy (see De Stefano 2016). The lack of human contact in online transactions makes the crowd workers invisible and contributes to the recommodification and dehumanization of these activities. Semantics further exacerbate this perception given that platform work is often referred to as a specific activity (task, ride, service) but hardly called *work* (or worker, for the same) (De Stefano 2016), or workers are called ‘partners’ in disguise of their dependency (Drahokoupil and Fabo 2016).

Current social insurance schemes do not align well with the characteristics of NSE due to common statutory requirements, such as the minimum duration of an employment relationship, earnings or hours (ILO 2017). Yet legally defined employment relationships, which determine the mutual rights and obligations between employer and employee and ensure the protection under labor laws and social security provisions,⁷ are missing for the self-employed and the platform worker. Moreover, most social insurance schemes have systematically built-in barriers for the self-employed and workers with irregular, short or interrupted employment records (Buschoff and Protsch 2008; Eichhorst et al. 2017; Hinrichs and Jessoula 2012; Loprest and Nightingale 2018; Spasova et al. 2017). Among NSE workers, social insurance coverage is much lower as many of them do not meet the minimum thresholds (ILO 2017). NSE workers often work fewer hours, have lower earnings and change jobs more frequently

⁵ http://wcmstraining2.ilo.org/ifpdial/areas-of-work/labour-law/WCMS_CON_TXT_IFPDIAL_EMPREL_EN/lang--en/index.htm.

⁶ The term refers to the underlying use of online platforms, which reduce transaction costs and provide access to goods and services (Drahokoupil and Fabo 2016).

⁷ http://wcmstraining2.ilo.org/ifpdial/areas-of-work/labour-law/WCMS_CON_TXT_IFPDIAL_EMPREL_EN/lang--en/index.htm.

which either excludes them entirely from social insurance schemes or results in benefits that are considerably lower compared to standard employees (Behrendt and Nguyen 2018; Bussolo et al. 2019). Casual workers, for example, are engaged on an as-needs basis with limited rights and are often excluded from social insurance systems (Behrendt and Nguyen 2018). The irregular working hours in on-call employment lead to unpredictable income from work and may result in interrupted employment affecting the duration needed to be eligible for social insurance entitlements.

Workers engaged in platform work ('gig workers') are often classified as independent contractors and are as such not covered by existing labor and social protection laws (ILO 2017; De Stefano 2016). They are liable towards their clients as well as responsible for all insurance obligations, employment laws and labor regulations (Rogers 2015b, in De Stefano 2016). Shifting risks to workers is not only an issue for platform workers but affects many other NSE workers as well, such as in the case of zero-hours contracts or on-call contracts. Misclassification of employment relations also contributes to the informalization of work (De Stefano 2016). Workers in disguised employment relations do not benefit from labor and social protection. As platform workers are classified as independent contractors, they have no access to statutory employment and social protection rights, such as unemployment benefits, maternity leave or holidays (De Stefano 2016).

Because many NSE workers have no, patchy or too short social insurance contribution records, they are not eligible for benefits in the event of job loss (unemployment), maternity, sickness, old-age and other work-related contingencies. They are insufficiently protected against these risks, which can be catastrophic in the absence of insurance and increase the risk of a life in poverty.

Given that our current social protection systems were designed with a full-time employee in mind (OECD 2019), the increasing number of workers in NSE or self-employment leads to substantial coverage gaps. Many NSE workers struggle to meet minimum contribution periods. The self-employed are often excluded from social insurance systems or only eligible for some very basic benefits (OECD 2019). The increase in the number of NSE workers along with their exclusion from current systems challenge the financial base of contributory social insurance systems (OECD 2019). The unequal treatment of workers with different forms of employment creates incentives for firms to shift work to those for which they do not have to pay contributions, that is those with the least protection (OECD 2019). On the other hand, the rapid increase in platform work and the increasing importance of platforms in general may speed up the development of employment standards which account for the characteristics of the platform economy (Drahokoupil and Fabo 2016).

41.4 ALTERNATIVES FOR FUTURE-PROOF SOCIAL PROTECTION

The main challenge for current social protection systems is how to include NSE workers. '[The] discussion should not be about whether there should be a welfare state, but about its precise forms and its distributional objectives' (Barr 1998, 414). Bussolo et al. (2019) call for rethinking the social contract in Europe. Educational attainment is no longer a guarantee for stable full-time employment. The feeling of economic security has gone even though most workers still earn a decent income and are part of the middle class. A stable social contract

finds the middle ground between the market-driven distribution of resources, redistributive public policies and societies' preferences for redistribution of opportunities and outcomes. Notions of equity, progressivity and universality need to be revisited as underlying principles of the social contract between citizens and government (Bussolo et al. 2019).

Stakeholders in national and international organizations and academia have proposed solutions how to better align social protection systems with the new working realities and effectively protect individuals and their families. Proposals range from changes in labor laws and regulations, adjustments to current schemes, to more radical reforms, which would structurally change current welfare state systems. The equal treatment of different forms of employment is the underlying principle for most proposals: 'Extending social protection to all forms of employment is not only about ensuring fairness and better protection for workers and their families, but also about creating a more level playing field for different forms of employment, as well as facilitating labor market transitions and labor mobility' (Behrendt and Nguyen 2018, 8).

41.4.1 Strengthen the Rights of Workers

For the International Labour Organization (ILO), the investment in the institution of work means to strengthen the rights of workers to economic security, autonomy and equal opportunity. This is also reflected in the Employment Relationship Recommendation 198, adopted by the International Labour Conference in 2006, which should help countries in determining the scope of employment relationships and increase the number of workers protected by labor and social security laws (ILO 2013). This is particularly important for the new technology-related NSE workers in European countries whose legal status is often blurred by ambiguous employment forms, such as platform workers or self-employed crowd workers. Their unclear legal status has implications for their social protection coverage (ILO 2019). Within the context of the decent work agenda, the ILO sees potential to improve national labor laws and regulations to improve the position of NSE workers and their social protection coverage (ILO 2017).

The gig economy is not a separate silo in the economy. Hence, there should be no separate discourse on platform work, but it should be part of the overall discussion on how to improve the protection and better regulation of NSE (De Stefano 2016). Most importantly, jobs in the gig economy should be recognized as work to counter commodification (De Stefano 2016). Yet, quick legislative responses, such as the creation of new categories of employment in the gig economy, should be avoided. This would also ensure that general labor regulations apply to this form of work (De Stefano 2016). Platform workers are generally considered as self-employed. Yet, some platforms intervene in the work to such an extent that they are classified as employers by national courts.⁸ Such misclassifications can be effectively addressed by labor laws (OECD 2019). In particular, platforms that operate on local markets should be within reach of existing regulatory frameworks (Drahokoupil and Fabo 2016; Vandaele et al. 2019). This would increase coverage of workers in dependent self-employment and reduce the number of workers in disguised self-employment (ILO 2017).

⁸ Uber's business model has been challenged, for example, in the United Kingdom and France. In both cases, courts have recognized the rights of Uber drivers to be considered as employees (Reuters 2020; The Guardian 2018).

Measures to ensure equal treatment between self-employed and wage workers may further prevent firms from reclassifying workers as self-employed and avoid the payment of social insurance contributions. The OECD (2018) suggests introducing a wage premium for flexible work arrangements, such as independent contractors, on-call workers or those with flexible-hour contracts. The wage premium would compensate for the entrepreneurial risk and compensate for the lack of benefits, such as paid holidays and social insurance. Others suggest extending collective agreements to a wider category of ‘employees’, which would also include platform workers or recognize platform workers as a category in need of special protection similar to part-time or agency workers. This could, for example, include the right to temporarily deactivate an account (Drahokoupil and Fabo 2016). Although trade union density has been steadily decreasing over the last decades (Balliester and Elsheikhi 2018), union representation can extend to and support the position of NSE workers and particularly those in the gig economy. As examples from the United Kingdom and Belgium have shown, both traditional and new worker collectives have been instrumental in fighting for the rights of local platform workers such as Uber and Deliveroo (The Guardian 2018; Vandaele et al. 2019). However, regulating crowd work on globally operating platforms will be much more challenging. Still, crowd workers should be allowed ‘to exercise their freedom of association and collective bargaining rights’ (Berg et al. 2018, xix).

41.4.2 Extend Social Insurance Schemes

Extending statutory social insurance coverage to currently excluded workers would ensure the equal treatment of different contractual arrangements and would improve the protection of NSE and self-employed workers (Behrendt and Nguyen 2018). In order to include NSE workers in social insurance systems, existing minimum thresholds with respect to hours, earnings or employment duration need to be lowered or eliminated. Ideally, every hour counts towards social insurance contributions (ILO 2017; Behrendt and Nguyen 2018). Such an approach also accounts for instable incomes and limited contribution capacity. Extending the period during which contributions are considered will improve access to benefits for workers with interrupted contribution periods (ILO 2017).

A lot can be gained by simplifying administrative procedures (registration and contribution), improving access to information and facilitating the portability of entitlements between different insurance schemes and employment statuses (ILO 2017). Portability is important to protect accumulated benefits from being lost. Schemes should also be adapted to cater for workers with multiple employers (Behrendt and Nguyen 2018).

However, if fewer workers have continuous employment records, it is debatable whether collecting contributions through employers is still the most effective way (Barr 2018). The individualization of social protection, which essentially means untying contributions from employment relations, is offered by some as a solution. Barr (2018), for example, recommends the introduction of notional defined contribution systems. All contributions made by worker, employer or state are individually recorded in one account. It is not a new idea, but recently gained traction especially for platform workers (Etsy 2016, in OECD 2019). However, given that individual accounts do not include risk-pooling elements, they may not be sufficient to protect against catastrophic risks (OECD 2019). Low-income and part-time workers have the additional disadvantage that they hardly accumulate enough contributions for a meaningful

benefit unless contributions are subsidized by the government or the government contributes directly (OECD 2019; Behrendt and Nguyen 2018).

To address the double contribution issue, independent workers could be required to pay both employer and employee contributions, with the effect that it would raise the price of labor as for example in the United States (OECD 2019). Yet, self-employed workers may not be able to shift the additional costs to the client and prefer the informal sector, especially if transactions cannot be properly monitored (OECD 2019). Alternatively, clients could be charged directly as in the case of Germany's artist insurance (OECD 2019; Behrendt and Nguyen 2018).

41.4.3 Extend Tax-Financed Social Protection

Alternatively, social protection could be made more universal by granting entitlements to tax-financed benefits based on need. Health care or health insurance and provisions for maternity leave are already universally available in most countries. The OECD, for example, suggests '[i]ncreasing the role of tax-financed social protection elements to help address gaps in existing provisions, i.e. use universal and means-tested benefits to complement benefits linked to employment status and/or the level of contributions' (OECD 2019, 83). Such an approach would automatically extend coverage to all NSE workers and could reduce the administrative challenge of tracking all contributions.

Earnings-related benefits must remain contributory, but where the primary purpose is insurance (health care) or poverty relief (basic pension), contributions need to be redesigned as the current system through employers is no longer effective. It can even discourage formal-sector employment (Barr 2018). Recognizing that contributory social protection is linked to some form of employment, the combination with non-contributory measures linked, for example, to residence allows for the design of comprehensive social protection systems that are equitable and sustainable (ILO 2017). A flat-rate basic pension based on age and residency, financed from tax revenues, without contribution requirement has the advantage of relieving poverty and reducing the inequality of retirement income between men and women (Barr 2018). NSE workers can be further supported by tax-financed family benefits, unemployment protection and social assistance. Health risks can be addressed by an insurance scheme with everybody in a single pool (Barr 2018).

The risk of extending tax-financed benefits to other contingencies is the crowding out of employer contributions. If benefits are no longer linked to employment, the challenge is how to ensure that employers continue to contribute (OECD 2019). If low coverage with social insurance has to be compensated with more tax-financed social assistance, social assistance schemes may become overburdened and financially unsustainable. It would challenge the solidarity between contributors and beneficiaries.

41.4.4 Introduce a Universal Basic Income

Recently, the universal basic income (UBI) emerged once again as a possible policy response to issues such as increasing inequality and future labor displacement due to automation. In a world which is becoming more complex, 'the simplicity of a UBI is alluring' (Gentilini et al. 2020, 1). Many see it as the optimal policy for poverty and inequality reduction. In its *2019 World Development Report*, the World Bank (2019) emphasized the need to expand social assistance programs in developed countries. A UBI would increase the low poverty

and unemployment benefit take-up rate, and it would provide protection to those workers who are currently not or insufficiently covered by social insurance schemes. A more universal social assistance system could tackle the challenges of ‘lack of awareness of benefits, misunderstanding of eligibility rules, the stigma associated with assistance, bureaucratic obstacles and the opportunity costs of accessing benefits among beneficiaries’ (World Bank 2019, 108). The money transferred to the rich would be recovered by a progressive tax and the UBI would replace all other cash transfer programs and tax allowances. A UBI is not by definition a Pareto-efficient⁹ or equity-enhancing solution. It would create winners and losers, depending on its design and funding principles (World Bank 2019). If the funding for the UBI is transferred from existing benefits, previous beneficiaries may experience significant income losses (Martinelli 2017).

Atkinson (2015) proposed a taxable universal child benefit and a participation income (PI) to expand current social assistance coverage in developed countries. The PI is a form of UBI for adults, with broad eligibility conditions: any resident with civil engagement (paid or unpaid) or performing household duties would be eligible. Unlike the World Bank, Atkinson proposed the PI as complementary to current social protection systems. However, the PI would be taken into account for the assessment of income-related or social insurance-based benefits.

Critics of the UBI argue that it would change labor market participation. However, the existing evidence from Alaska and Finland shows that effects are modest or had no effect on employment rates (Feinberg and Kuehn 2018; Jones and Marinescu 2019; Kangas et al. 2019).¹⁰ Cowan (2017) argues that these studies have not considered the disincentive effect from the possible increase in income tax rates. Some argue that a UBI may also incentivize employers to reduce wages as the government already provides part of the income. A study from the 1970s Canadian UBI experiment in the area of Dauphin shows the opposite. The comprehensive guaranteed income pulled wage rates up by a considerable amount as it gave workers more bargaining power (Calnitsky 2018).

41.4.5 Activate, Retrain and Up-skill Workers

Skills needed for the successful participation in the labor market are changing rapidly in line with the advancements in technology. Companies will require different skill sets, which has implications for the individual worker (Illanes et al. 2018). The question is who should take the lead in training, reskilling and up-skilling the labor force. Governments can help people to acquire the right type of skills either by investing in formal education or by creating new training programs (OECD 2017).

The Global Commission on the Future of Work recommends the implementation of a universal lifelong learning approach as a way to cope with the changing nature of work offering ‘a pathway to inclusion in labor markets for youth and the unemployed’ (ILO 2019, 30).¹¹ Investments in lifelong learning systems are also recommended by the OECD with the objec-

⁹ No one can be made better off without another person being worse off.

¹⁰ Preliminary results for Finland show that the program led to an improvement in general mental well-being (Kangas et al. 2019).

¹¹ ‘Lifelong learning encompasses formal and informal learning from early childhood and basic education through to adult learning, combining foundational skills, social and cognitive skills (such as learning to learn) and the skills needed for specific jobs, occupations or sectors’ (ILO 2019, 30).

tive ‘to permit adults to regularly update, upgrade, and sometimes even acquire completely new knowledge, skills and competences in order to stay employed and/or find new employment’ (OECD 2017, 19).

Young workers belong to the groups most vulnerable to automation, despite their likely tech-savviness, and they are more likely engaged in NSE (ILO 2016; Nedelkoska and Quintini 2018). By introducing employment programs and supporting young entrepreneurs, governments can promote youth employment opportunities. The private sector could contribute by offering quality apprenticeships and entry-level jobs. This is particularly important for those adolescents that are not in employment nor in education to prevent long-term unemployment and social exclusion (ILO 2019). For older workers, apart from lifelong learning, the Global Commission on the Future of Work suggests providing more flexible working arrangements (both in terms of working hours and locations), partial retirement policies or raising the optional retirement age (ILO 2019). This could possibly help to alleviate pressure on current social protection systems due to aging demographics, changes in the nature of work and reduced returns on pension investments.

Providing sufficient retraining and new job opportunities could be challenging for many governments. The Global Commission on the Future of Work calls for a close collaboration of governments, education institutions and firms (ILO 2019). Governments are expected to redesign and adapt employment services and training systems to the changing nature of work. To assist workers in transitioning in the labor market, governments are suggested to invest more in public employment services (ILO 2019). The reform of labor market institutions could be further facilitated by the use of new digital technologies to improve accessibility and more flexible solutions, such as online training.

Firms, together with labor unions, are expected to play a leading role in the definition of the new skills required by the market (ILO 2019), and they have to take a larger role in providing workers with opportunities to upgrade their skills (Barr 2018). Given the challenge ahead, the awareness that firms also have a responsibility in retraining and up-skilling their employees is rising (Illanes et al. 2018). Based on a global survey with close to 300 executives from large companies (over USD 100 million in annual revenues), ‘addressing potential skills gaps related to automation/digitization’ is considered a top-ten priority by 66 percent of the respondents (Illanes et al. 2018, 2). Sixty four percent of the United States executives and 59 percent of the executives surveyed in Europe ‘believe that corporations, not governments, educators, or individual workers, should take the lead in trying to close the looming skills gap’ (Illanes et al. 2018, 3). Yet, companies themselves struggle in identifying how jobs will change and what skills will be needed in the coming years (Illanes et al. 2018).

41.4.6 More for the Firms?

Finally, firms and especially multinational companies might play an active role in the process of transformation supporting the extension and coverage of social protection. However, this aspect is still under-researched. The beauty of platform work is also that all transactions are registered online. This property could be utilized for the collection of taxes and social contributions. Online platforms could be asked to share information on payments or to withhold taxes directly. The latter could be challenging if the firm is located in another country than the platform worker and would require cross-country agreements (OECD 2019).

Recently, the ILO has shown some interest in the potential engagement of the private sector in the process of social protection reform. Tessier et al. (2013) refer to Danone and L'Oréal, two multinational companies which have implemented projects aimed at assuring a minimum level of protection to their employees working in different countries over the world. Such measures can generate additional benefits due to the potential positive effects on the companies' brand attractiveness as well as the positive effects on the motivation and productivity of their workers. However, in order to ensure an effective coordination with other components of the social protection systems, governments should be informed about such initiatives (Tessier et al. 2013).

41.5 CONCLUSION

Technological change as such is nothing new. Yet, the current transformation is unprecedented and will have consequences on how and how much we work. European welfare states are not well prepared for these changes. Firms and workers benefit from new technologies as they lower transaction costs and offer flexibility in working arrangements. Yet, this flexibility can also lead to precarity. Part-time, temporary or platform workers still earn an income, but they miss the benefits linked to full-time employment. They may no longer rely on the protective function of social insurance mechanisms. NSE workers have a higher likelihood of falling into poverty in the event of a shock, such as illness, disability, maternity or retirement.

The challenge for contemporary welfare states in developed countries is how to extend effective social protection to NSE workers. The increase in job insecurity particularly for NSE workers and lower incomes from work put existing social protection systems under pressure. The demand for social protection is increasing while the contribution base is eroding. Due to the rules and regulations of current contributory social protection schemes, many NSE workers are not or only partially covered by social and health insurance. This leads to a higher poverty risk in the event of job-related contingencies and a larger burden for tax-financed social assistance schemes. The erosion of the contribution base leads to financing gaps, which puts a strain on existing social protection systems and jeopardizes the adequacy of existing systems. This imbalance threatens the intra- and intergenerational solidarity of our current systems and the social contract between citizens and institutions.

Hence, it is time to review current systems and work on social protection that is truly universal and includes all irrespective of their level and type of employment. There is no easy fix given the diversity of employment and the differences in preferences regarding the size of the welfare state. At a time of rapid innovation, governments need to be just as innovative in order to ensure the continued well-being of their citizens. '[The] future of the welfare state depends not only on economic feasibility, but also very much on what people, through the political process, decide that they want' (Barr 1998, 414).

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