

► Digitalization and the future of work in the financial services sector

Issues paper for the Technical meeting on the impact of digitalization in the finance sector
(Geneva, 24–28 January 2022)

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► List of acronyms

AI	artificial intelligence
ATM	automated teller machine
bigtech	big technology
fintech	financial technology
GDP	gross domestic product
ICT	information and communication technology
ILO	International Labour Organization
insurtech	technology-based insurance
IT	information technology
MSME	micro, small and medium-sized enterprise
OECD	Organisation for Economic Co-operation and Development
SME	small and medium-sized enterprise
STEM	science, technology, engineering and mathematics

► Background

At its 335th Session in March 2019, ¹ the Governing Body of the International Labour Office endorsed a “Technical meeting on the impact of digitalization in the finance sector”. ²

The meeting will discuss challenges and opportunities relating to the impact of digitalization on the future of work in the financial sector. There will be a particular focus on global trends and on policies, strategies and good practices to advance decent work in the sector.

This paper aims to inform the meeting’s discussion, highlighting the trends steering major sectoral changes and analysing how these impact employment, labour and social protection, and the sector’s regulatory environment.

► 1. The financial services sector

1. The financial sector plays an important role in countries’ economic growth, including through its effects on employment. It also plays a broader societal role, supporting individuals, businesses, institutions and governments. ³
2. The role of the financial sector in supporting employment creation is twofold: it is an employment creator in itself, through a variety of occupations and jobs emerging in the sector, and it also facilitates job creation in other sectors, through access to finance and entrepreneurship development, eventually benefiting society as a whole and the economy.
3. New digital financial services are increasingly provided online, without the intermediary of customer-facing institutions and without a centralized workplace. New forms of employment are emerging, encompassing computer-mediated tasks and activities that support financial and other services. This may encourage further shifts in the financial sector’s job landscape. A recent ILO study reports on the rise of payment platforms in the financial sector competing with the traditional banking sector, which may lead to changes in employment. ⁴ These changes can also affect working conditions, access to social protection and effective participation in social dialogue, as well as require actions to address privacy and data protection issues. ⁵
4. Changes in the organization of work resulting from these developments may transform business operations, with benefits encompassing increased flexibility, greater speed in payment and operations execution, and improved ability to meet client demand and ensure effective delivery.

¹ ILO, [GB.335/POL/PV\(Rev.\)](#), 2019, para. 118.

² ILO, [Sectoral meetings held in 2018 and proposals for sectoral work in 2019 and 2020–21](#), GB.335/POL/3, Appendix II.

³ World Economic Forum, [The role of financial services in society: A multistakeholder compact](#), 2013.

⁴ ILO, [World Employment and Social Outlook 2021: The role of digital labour platforms in transforming the world of work](#), 2021, 42–43.

⁵ ILO, [World Employment and Social Outlook 2021](#), 227.

5. The use of technologies and the digitalization of financial services could further contribute to increasing access to financial products for millions of people and enterprises in rural and remote areas, and to ensuring equal access for women and men to financial markets, contributing to the overall goal of women's economic and social empowerment. The adoption of digital finance may particularly benefit micro and small enterprises promoting entrepreneurship and innovation, thus fostering economic growth.
6. Issues around equal access to financial products and quality financial advice – thereby closing digital and financial divides – need to be addressed so that the gains from financial inclusion are more equally shared.

1.1. Definition and structure

7. For the purposes of this paper, and following on from previous ILO work in the area,⁶ the financial services sector broadly covers: the banking industry (retail banking and wholesale banking operating in national, regional or global financial markets); the insurance industry (life insurance, non-life insurance and reinsurance); and financial intermediaries (such as hedge funds, mutual funds, wealth management firms, insurance agents and financial advisers). These activities are defined in detail in the *International Standard Industrial Classification of All Economic Activities (ISIC), Revision 4*.⁷
8. Digitalization has blurred the lines of the traditional sectoral division of labour, with “digital” workers often ranging from financial online providers to retail platforms, to information and communication technology (ICT) specialists being recruited by financial service providers. The occupations and sectors previously defined may overlap with those in the ICT industry, considering the increasing demand for ICT specialists in the financial services sector.⁸ In light of this, the present paper will analyse specific occupations to assess the extent of changes in the sector's employment patterns.
9. Current literature has defined digitalization or digital transformation broadly as “changes associated with the application of digital technology in all aspects of human society”.⁹ In the context of specific economic sectors, digitalization brings about changes in the way of working, in the job roles, and in the business models used. This paper will cover both automation – the process of making a task or procedure executable without, or with reduced, human assistance – and the broader digitalization processes (artificial intelligence (AI), block chain, data analytics, the internet of things, and robotic process automation).

⁶ ILO, *Issues paper for discussion at the Global Dialogue Forum on the Impact of the Financial Crisis on Finance Sector Workers*, GDFFSW/2010, 2009.

⁷ United Nations Department of Economic and Social Affairs, *International Standard Industrial Classification of All Economic Activities (ISIC), Revision 4*, 2008, classification of financial services sector activities in Section K, Division 64: Division 64 – Financial service activities, except insurance and pension funding, 641 Monetary intermediation, 642 Activities of holding companies, 643 Trusts, funds and similar financial entities, 649 Other financial service activities, except insurance and pension funding activities; Division 65 – Insurance, reinsurance and pension funding, except compulsory social security, 651 Insurance, 652 Reinsurance, 653 Pension funding; Division 66 – Activities auxiliary to financial service and insurance activities, 661 Activities auxiliary to financial service activities, except insurance and pension funding, 662 Activities auxiliary to insurance and pension funding, 663 Fund management activities.

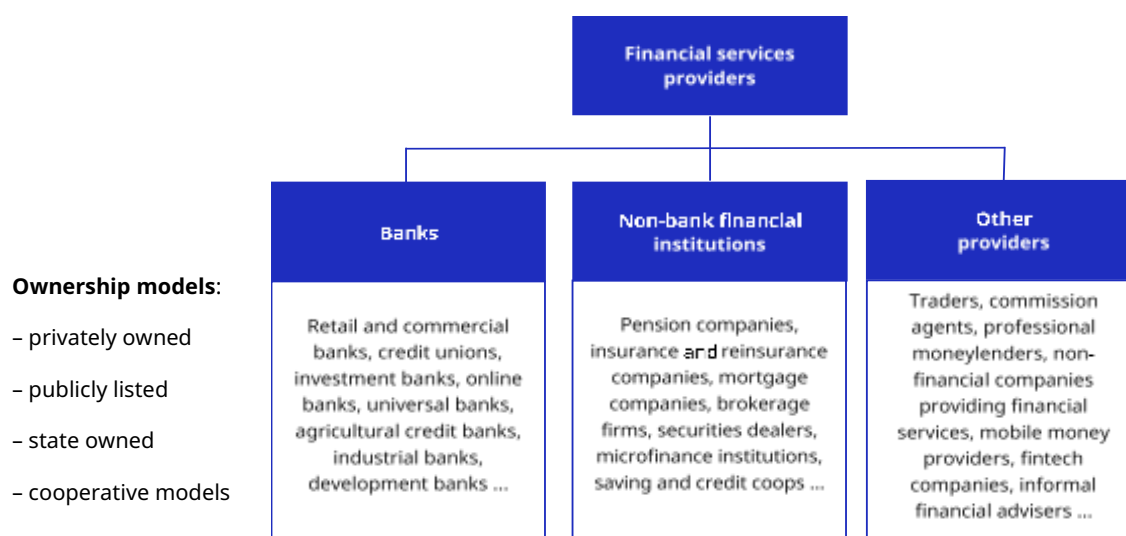
⁸ ILO, *Skills shortages and labour migration in the field of information and communication technology in India, Indonesia and Thailand*, 2019.

⁹ Päivi Parviainen et al., “Tackling the digitalization challenge: how to benefit from digitalization in practice”, *International Journal of Information Systems and Project Management* 5, No. 1 (2017): 63–77.

The financial services sector landscape

10. The financial services ecosystem consists of its users, providers, the financial infrastructure, and the regulatory and institutional environment.¹⁰ Digitalization affects each one of these components, changing the business models, the way users can access banking or insurance services, the types of infrastructure in place to reach users, as well as the regulatory environment to adapt to the emergence of new financial actors (such as financial technology (fintech) enterprises).
11. Such changes are also shaping the dynamics between multinationals and big enterprises – resulting from previous pushes towards concentration and mergers – and small and medium-sized enterprises (SMEs) emerging from the digital revolution in the financial sector. This not only has implications for the way services are provided, and their quality, but also for the type of jobs and employment patterns in the sector.
12. The digital transformation of the sector has added more providers to the existing landscape (figure 1), and changed the service provision within the existing traditional providers, which are now expanding digital services.

► **Figure 1. Financial sector providers' landscape**



Source: Authors' elaboration based on International Telecommunication Union (ITU), *The Digital Financial Services Ecosystem*, ITU-T Focus Group on Digital Financial Services, 2016.

13. While financial institutions have always innovated their businesses through the application of specific technologies, the emergence of fintech enterprises has changed the provision of financial services by using technologically enabled mobile and online platforms and increasingly providing services directly to consumers.¹¹ This distinguishes them from earlier finance-related technologies serving existing financial enterprises.
14. Key drivers of the adoption of fintech include unmet demand associated with high costs of traditional finance, a competitive environment, supportive regulation and changing demographics. The fintech landscape appears very diverse. However, there are some

¹⁰ International Telecommunication Union (ITU), *The Digital Financial Services Ecosystem*.

¹¹ William Magnuson, "Regulating Fintech", *Vanderbilt Law Review* 71, No. 4, 2018, 1174.

commonalities in its business model, especially with regard to its capacity to democratize and disintermediate the financial market, serving those not reached by the formal financial institutions, and to ensure more transparent information, potentially free from biases.¹²

1.2. Competition among financial institutions, and emergence of non-financial actors

15. More and more formal financial institutions are competing with other types of institutions providing financial services outside the regulatory perimeter and without as many safety nets. While increased regulation and compliance requirements were developed after the 2008 financial crisis (for instance the Basel III standards), this type of financial intermediation is growing and it was estimated to be worth over US\$50.9 trillion in 2018.¹³ Digital disruption facilitated by increased competition of fintech and platform-based competitors is facilitating the growth of these institutions.
16. Beyond the creation of technology-enabled financial enterprises, digitalization has contributed to easing the traditional entry barriers for other market players. Big technology (bigtech) enterprises have started to integrate financial products into their businesses and services. Financial services represent almost 11.3 per cent of bigtech revenues, both competing and cooperating with traditional institutions, mainly acting as a distribution channel for third-party products, including providing wealth management and insurance products.¹⁴
17. The debate around competition versus complementarity of services provided by traditional financial institutions vis-à-vis fintech enterprises is broad and ongoing. Recent studies predict that banks will increasingly enter the digital space and increment partnerships with non-banks throughout the value chain, increasing the interdependence between them.¹⁵
18. Both fintech and bigtech enterprises have offered additional interfaces to clients using banks' payments infrastructure; and have reached out to unserved segments or the unbanked clients (for example, through lending platforms),¹⁶ including through domestic and international remittance service provision,¹⁷ and establishing partnerships with existing lender providers. In some cases, innovation, coupled with competition from new entrants, has pushed traditional financial institutions to use technologies to extend their service provision to include unserved segments of the market, using digital identification and user-friendly interfaces to attract consumers with lower financial literacy levels.¹⁸
19. The expanded digital financial landscape offers both advantages and disadvantages.¹⁹ Lower priority on data protection and privacy, as well as unclear regulatory frameworks are

¹² Max Kanaskar, "The Five D's of Fintech", *WordPress Blog* (blog), 19 March 2016.

¹³ Financial Stability Board, *Global Monitoring Report on Non-Bank Financial Intermediation 2019*, 2020.

¹⁴ Bank for International Settlements (BIS), "Section III: Big tech in finance: opportunities and risks", in *BIS Annual Economic Report 2019*, 2019.

¹⁵ Deloitte, *2019 Banking and Capital Markets Outlook: Reimagining transformation*, 2018.

¹⁶ Financial Stability Board, *FinTech and market structure in financial services: Market developments and potential financial stability implications*, 2019, 12.

¹⁷ ITU, *The Digital Financial Services Ecosystem*.

¹⁸ Organisation for Economic Co-operation and Development (OECD), *Financial Markets, Insurance and Private Pensions: Digitalisation and Finance*, 2018, 88.

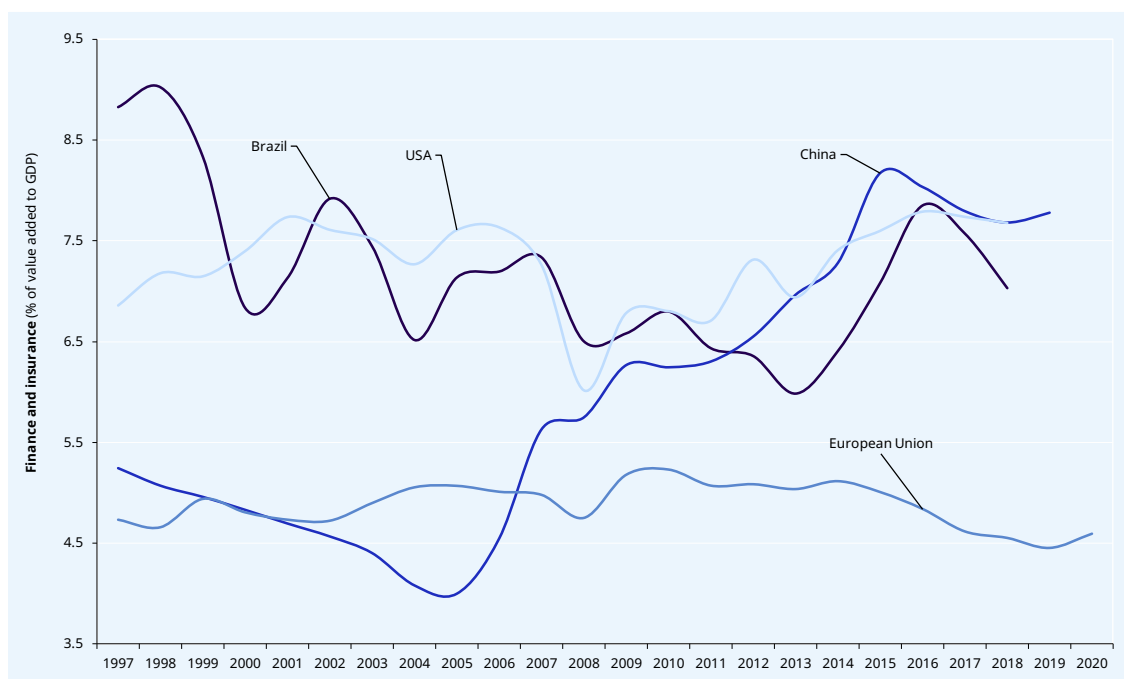
¹⁹ BIS, "Section III: Big tech in finance", in *BIS Annual Economic Report 2019*.

among the issues to be considered not only for customers, but also for workers and employers in the sector.

1.3. Contribution to the economy

- 20.** Between 2008 and 2017, the financial sector's share of gross domestic product (GDP) increased 27 per cent in the United States of America. It also increased in countries in Latin America (Brazil, 16 per cent) and Asia and the Pacific (China, 36 per cent), while witnessing a negative change in the European Union (figure 2).

► **Figure 2. Financial sector value added (percentage) in GDP, selected countries (1995–2018)**



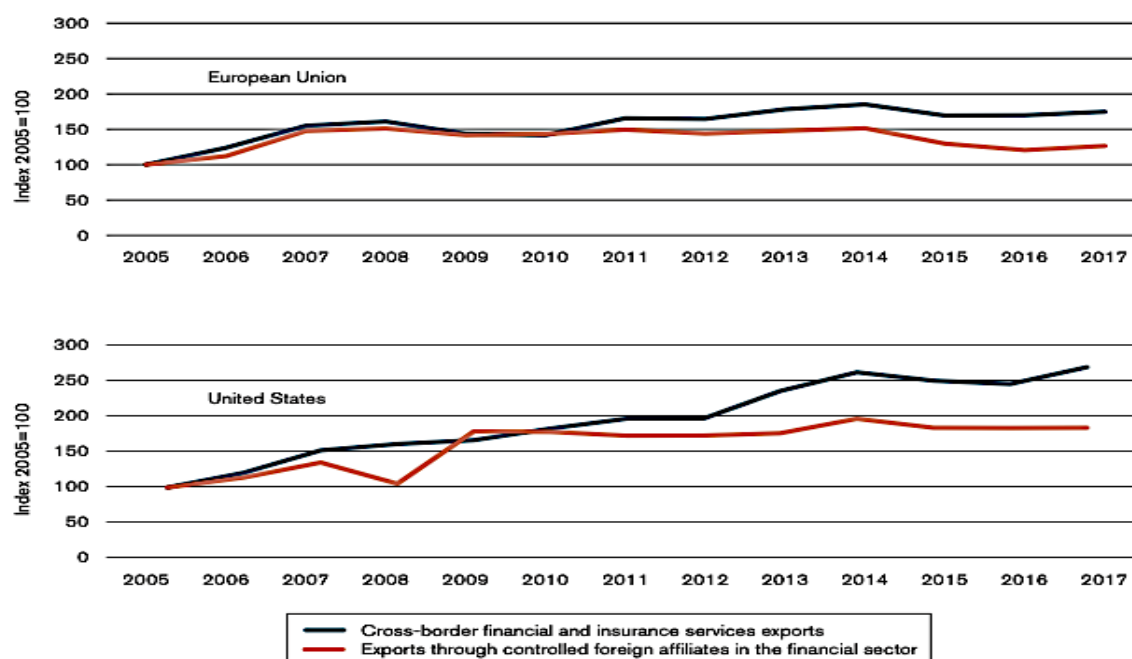
Source: OECD data – Trends until 2019 for China and 2020 for the European Union.

- 21.** A 2017 study reported that in sub-Saharan Africa, the banking sector value added constituted 19 per cent of GDP in South Africa, 11 per cent in Botswana and Gambia, and 9 per cent in Kenya. This is low in comparison to the global banking sector's contribution to global GDP. The same goes for the insurance services markets in Africa (as a share of GDP). In 2015, the insurance sector's GDP contribution was 2.8 per cent, lower than the average world ratio (6.2 per cent). In the same year, only 19 per cent of African enterprises used banks to finance investment, compared to 24 per cent in all low- and middle-income countries and 31.5 per cent in high-income countries.²⁰
- 22.** Globally, the financial services have the largest share of traded services, with 18.6 per cent of total services traded in 2017. Overall, 77 per cent of these services were traded through foreign affiliates, rather than cross-border trade. However, the increase in online financial services has reduced the share of services provided through branches. In 2017, European Union and United States cross-border financial and insurance services exports grew faster

²⁰ Jennifer Powell, "The Sub-Saharan African Services Economy: Insights and Trends", Office of Industries Working Paper ID-046, United States International Trade Commission, 2017, 50.

than exports through foreign-controlled affiliates (figure 3). In the United States, for example, cross-border transactions increased between 2005 and 2019, to reach US\$109.6 billion.²¹

► **Figure 3. Cross-border financial and insurance services exports versus trade through foreign affiliates in the financial sector, 2005–17**



Source: World Trade Organization, *World Trade Report 2019: The future of services trade*, 2019, 26.

23. The financial sector plays an important role in both developed and developing countries in supporting the economy and investments in public services. However, the increased role of the financial sector (financialization) has resulted in both positive and negative effects on economic stability, and raised issues on its capacity to effectively serve the real economy and not solely the shareholder value.²² Furthermore, the combined effects of financialization and digitalization of the economy have made big data a strategic economic resource.²³
24. However, there is an ongoing debate on the extent to which this deepening of financial institutions in the economy may affect market volatility and macroeconomic stability – particularly when the financial system is poorly regulated and supervised.²⁴

²¹ World Trade Organization, *World Trade Report 2019: The future of services trade*, 2019, 22–49.

²² Agata Gemzik-Salwach and Krzysztof Opolski, ed., *Financialization and the Economy* (New York: Routledge, 2017); Marianna Mazzucato, *The Value of Everything: Making and Taking in the Global Economy* (New York: PublicAffairs, 2018).

²³ Gérard Valenduc and Patricia Vendramin, “Digitalisation, between disruption and evolution”, *Transfer: European Review of Labour and Research* 23, No. 2 (2017): 121–134.

²⁴ Ratna Sahay et al., “Rethinking Financial Deepening: Stability and Growth in Emerging Markets”, IMF Staff Discussion Note (International Monetary Fund (IMF), 2015), 15.

► 2. Megatrends in a digitalized financial sector environment

- 25.** The financial sector has undergone deep changes over recent decades, driven by globalization, demographic changes affecting the demand for financial services, and technological advances. The 2008 financial crisis represented a turning point for the reorganization and regulation of the sector. Similarly, the COVID-19 pandemic, while not directly impacting on these services, required the sector to manage the resulting economic crisis, characterized by an unexpected shock to global economic supply and demand, market volatility and liquidity shortages. In some countries, low digital capacity and pressure on the existing infrastructure have put a strain on the traditional financial service business models.

2.1. Globalization

- 26.** The globalization of the financial services industry has led to both a harmonization of rules and a reduction of barriers, encouraging free movement of capital and greater competition in all markets. This was promoted by a combination of developments, encompassing advances in technology, liberalization of transnational capital flows, and consolidation of financial operations.²⁵
- 27.** Globalization has changed the business operations of financial institutions through offshoring and outsourcing, especially affecting back-office operations.²⁶ Technological applications have helped financial institutions to reduce operational costs. In some cases, and depending on regulations in place, this has resulted in the offshoring of specific functions to other countries and the outsourcing of specific tasks to other sectors (for instance the ICT sector).
- 28.** At the same time, national-level and cross-border consolidation have contributed to ensure economies of scale and scope.²⁷ As a result, a variety of services and products are now offered by different types of institutions, with, for example, commercial banks dealing with investment banking, other licensed financial institutions providing banking products, and insurance enterprises providing other financial services (for example, mortgages).
- 29.** While mergers have characterized the financial sector for decades, the 2008 financial crisis had a great impact on this process, shaping existing and emerging financial institutions and their employment patterns.²⁸ After the crisis, bank consolidation increased in the United States (from 27 to 34 per cent) and in the United Kingdom of Great Britain and Northern Ireland (from 43 to 58 per cent).²⁹ In Europe, this varied according to country, increasing in

²⁵ World Trade Organization, “[Developments in the sector](#)”, Services: Financial Services.

²⁶ Ross McGill, “[Front, Middle and Back Office Explained](#)”, in *Technology Management in Financial Services* (London: Palgrave Macmillan, 2008), 34.

²⁷ OECD, *Financial Markets, Insurance and Private Pensions*, 20.

²⁸ Rekha Rao-Nicholson and Julie Salaber, “[Impact of the Financial Crisis on Cross-Border Mergers and Acquisitions and Concentration in the Global Banking Industry](#)”, *Thunderbird International Business Review* 58, No. 2 (2016).

²⁹ Rao-Nicholson and Salaber, “Impact of the Financial Crisis”, 8.

Belgium and Germany, and decreasing in Austria, Denmark and Luxembourg. However, the banking sector also saw an increase in the market share of United States banks in Europe. ³⁰

30. Emerging markets played a key role in the post-crisis bank consolidation process. However, regional consolidation prevailed over global mergers. This is the case for East Asia and the Pacific and East Europe/Central Asia, with 84 per cent and 83 per cent, respectively, of the deals being intra-regional. ³¹
31. Technological advances, from automated teller machines (ATMs) to online banking, have both contributed to financial inclusion and facilitated consolidation, encouraged by economies of scale. ³² The combination of a favourable economic situation and trade liberalization has facilitated the availability of venture capital directed at fintech enterprises: fintech funding increased globally by 82 per cent between 2017 and 2018. ³³ This may be particularly important for the development of medium-sized enterprises, which may look at venture capital to access financial resources. ³⁴

2.2. Demographics

32. Global demographic trends are poised to change the demand for and operations of financial services. The ratio of investments to savings may change as a result of increases in the ageing population in some regions and in the youth cohort in others. ³⁵ This may also have implications for the use of digital financial services and for issues such as financial inclusion and the future workforce required in the sector.
33. In 2019, 62 per cent of the population in sub-Saharan Africa was below the age of 25, projected to fall only slightly by 2050. Overall, 47 least developed countries will account for an increase from 207 million in 2019 to a projected 336 million in 2050 of the number of young people aged 15 to 24 years. At the same time, the ageing population is increasing globally, mainly in industrialized countries, with the population aged 65 years or over projected to surpass the number of adolescents and young people aged 15 to 24 years by 2050. ³⁶
34. Young people tend to gravitate towards digital services, representing a market for fintech and bigtech enterprises entering the digital financial ecosystem. ³⁷ The financial sector is increasingly investing in robo-advisers using digital platforms and algorithms mainly targeting younger generations. ³⁸ Studies also show that the use of fintech enterprises is higher in countries such as Colombia, India and South Africa, characterized by a younger population. ³⁹ The younger generations' greater confidence in digital platforms and greater

³⁰ Deloitte, *2019 Banking and Capital Markets Outlook*, 19.

³¹ Rao-Nicholson and Salaber, "Impact of the Financial Crisis", 10.

³² Jeffery Y. Zhang, "[The rise of market concentration and rent seeking in the financial sector](#)", Harvard Law School Discussion Paper No. 72, 2017.

³³ Sean Ross, "[What Percentage of the Global Economy Is the Financial Services Sector?](#)", *Investopedia*, 2020.

³⁴ Adolfo Barajas et al., "[Financial Inclusion: What Have We Learned So Far? What Do We Have to Learn?](#)", IMF Working Paper No. 157, 2020.

³⁵ Bank of Japan, "[Demographic Changes and Challenges for Financial Sector](#)", Remarks at the Paris EUROPLACE Financial Forum in Tokyo, November 2018.

³⁶ United Nations, *World Population Prospects 2019: Highlights*, 2019.

³⁷ Jon Frost, "[The economic forces driving fintech adoption across countries](#)", BIS Working Paper No. 838, 2020.

³⁸ OECD, *Financial Markets, Insurance and Private Pensions*, 83.

³⁹ Frost, "The economic forces driving fintech adoption across countries".

willingness to share personal data and seek computer-generated advice has implications for how financial services adapt their business models to ensure privacy and protect data use.⁴⁰

35. The increasingly ageing population in industrialized countries may direct the demand for financial services towards asset management and life insurance services.⁴¹ Digital applications may bring advantages for older people (for example, adapting letter size and computer-reading of documents), but they may also be challenging in terms of older people's access to cashless or mobile payments. Furthermore, in an increasingly digitalized and youth-friendly financial sector labour market, the added value that older/more experienced workers are able to bring in terms of practical experience, relational competences and critical thinking would need to be considered.

2.3. Environmental sustainability

36. The financial services sector plays an important role in ensuring the shift of enterprises towards environmental sustainability and a circular economy, by devising financial products that support transition to a net zero emission economy, preserve natural resources and reduce waste.
37. In order to achieve this, the financial sector is moving towards a stronger integration of environmental goals in its core business strategies, setting clear targets on environmental, social and governance criteria. Principles for Responsible Banking and Principles for Sustainable Insurance have already been developed to support the financial sector in integrating sustainability across its operations at different levels.⁴²
38. Actions to promote loans and investments that prioritize sustainable business models may contribute to further advance financial inclusion that is also environmentally sustainable. Such transformation may require just transition strategies to redefine skills and job profiles of the financial sector workforce.

2.4. Technological developments

39. Over the years, actors in the financial sector – as in many sectors – have adapted to technological changes in order to obtain a competitive advantage with respect to other actors emerging in the market (figure 4).⁴³ This adaptation is both a consequence of the above-mentioned processes of consolidation and trade liberalization, as well as one of its key drivers.

⁴⁰ OECD, *Financial Markets, Insurance and Private Pensions*, 64.

⁴¹ Bank of Japan, "Demographic Changes and Challenges for Financial Sector".

⁴² United Nations Environment Programme (UNEP) Finance Initiative, "[Principles for Responsible Banking](#)", and "[Principles for Sustainable Insurance](#)".

⁴³ H.M.M. Fairouz and C.N. Wickramasinghe, "Innovation and Development of Digital Finance: A Review on Digital Transformation in Banking & Financial Sector of Sri Lanka", *Asian Journal of Economics, Finance and Management* 1, No. 2 (2019).

► **Figure 4. Timeline of technology adaptation in the financial sector**

Source: H.M.M. Fairouz and C.N. Wickramasinghe, "Innovation and Development of Digital Finance: A Review on Digital Transformation in Banking & Financial Sector of Sri Lanka", *Asian Journal of Economics, Finance and Management* 1, No. 2 (2019), 73.

40. While the application of technologies to financial-sector operations is not new, the pace of technology adoption in the last decade is unprecedented.⁴⁴ Automation, specialization and decentralization (through, for example, peer-to-peer service models) have characterized digital transformation, creating new payment tools (e-wallets) and enabling new providers to enter the financial sector market (for instance, information technology (IT) enterprises and retail enterprises). Most importantly, new technologies have made it easier for financial institutions to process, use and "monetize" a huge amount of data.⁴⁵
41. Fintech enterprises have managed to use big data, facilitated by advances in AI, computing power and cryptography, as well as by the expansion of the internet. As a result of the combination of these technologies, new applications have emerged, encompassing payments, financing, asset management, insurance and the provision of advice, making fintech enterprises competitive alternatives to traditional financial intermediaries.
42. The pace of technology adoption is particularly relevant in the context of the transformation of the financial systems in emerging countries. These countries do not have the same legacy systems, in terms of infrastructure or institutions, which may hold them back from applying a specific innovation. This advantage allows them to skip less efficient and more expensive technologies and directly adopt more advanced ones (leapfrogging).⁴⁶ The higher penetration rate of new interfaces (mobile banking versus physical branch offices), including the use of mobile money, such as M-Pesa in Kenya, constitute one example of this phenomenon.
43. This technological progress may represent an evolution of current business models or a complete disruption of the financial landscape, with fintech enterprises potentially replacing services now provided by banks or insurance enterprises. What is sure is that this competition is also pushing the traditional financial actors to adopt new technologies and change their business models and job profiles.
44. Different digital technologies apply to a variety of financial activities and services, with some technologies more widely spread than others and interdependent. For instance, distributed ledger technology is used for payments, trading and insurance payouts, and it could also be used to establish smart contracts or recordkeeping tasks; at the same time, big data analytics and the internet of things are used across the whole value chain of financial services, from product design to sale, and also for assessing individual risk profiles, risk management and monitoring of financial services and institutions (table 1).

⁴⁴ Dong He et al., "Fintech and Financial Services: Initial Considerations", IMF Staff Discussion Note No. 5, 2017.

⁴⁵ He et al., "Fintech and Financial Services", 8.

⁴⁶ Stijn Claessens et al., "E-Finance in Emerging Markets: Is Leapfrogging Possible?", World Bank Financial Sector Discussion Paper No. 7, 2001.

► **Table 1. Financial activities by digital technologies**

Digital technology	Payment services	Advisory and agency services	Investment and trading	Lending and funding	Insurance	Security	Operations	Communications
Distributed ledger technology/cryptography	X	X	X	X	X	X	X	X
Big data		X	X	X	X	X	X	X
Internet of things					X			X
Cloud computing				X			X	
AI		X	X		X			X
Biometric technology	X			X	X	X		
Augmented/virtual reality			X	X				X
Other automated processes (ATMs)	X		X				X	X
Social media	X	X	X	X	X		X	X
Mobile access/digital wallet	X	X	X	X	X		X	X

Source: Adapted from OECD, *Financial Markets, Insurance and Private Pensions: Digitalisation and Finance*, 2018, 14.

- 45.** Ranging from e-wallets and peer-to-peer lending platforms to the use of distributed ledger technologies, new technologies have the potential to change the labour market and employment patterns in the sector by using fewer intermediaries, reallocating jobs or by changing the profiles and job requirements in the sector.⁴⁷ The increasing use of algorithms can further expand the process of automation in the sector. As AI and algorithms are being used not only in low-skilled operations (for instance, call centres or bank tellers), but also in decision-making processes, they will have a wide range of impacts on occupations and employment relationships.
- 46.** With the increased integration of digital technologies in the financial sector, data have become particularly important. Recent trends point to an increasing demand by financial institutions for raw data to be integrated, consolidated and processed through different technological applications and stored in the cloud.⁴⁸
- 47.** The importance of data use in the sector raises issues around increased risks (such as market volatility, cybersecurity and macroeconomic risks), consumer protection and data protection. It can also trigger exclusion and discrimination. In particular, while AI can help in improving risk assessment and pricing, it can also “price some consumers out of the market”.⁴⁹

⁴⁷ OECD, *Financial Markets, Insurance and Private Pensions*.

⁴⁸ Deloitte, *2019 Banking and Capital Markets Outlook*, 10.

⁴⁹ Luiz Awazu Pereira da Silva, “Financial inclusion in the age of fintech: A paradigm shift” (BIS, 2018).

2.4.1. Technology driven synergies with other sectors and how this affects the banking and insurance business

48. Innovations in the ICT sector are driving the digital transformation in the financial services. At the same time, in some countries ICT has been growing as a result of an increased demand from the financial sector.⁵⁰ In some regions, partnerships between the telecommunication sector, through their mobile network operators, and financial institutions have resulted in an increasing use of mobile banking. At country level, microfinance institutions are shifting towards digital fintech banks; they own their IT infrastructure (mobile virtual network operators and SIM cards), combining both telecommunication and financial services, and compete with traditional financial institutions.⁵¹
49. The emergence of platform economy enterprises, using digital technologies for their platforms, is changing operating models of financial service providers, such as insurance enterprises, in terms of the use of data and of new types of insurance coverage.⁵² For instance, some ride-sharing drivers have different insurance depending on whether they are working, logged in waiting for the ride or using the vehicle for their personal purposes. Other technology applications enable workers to immediately access their pay.⁵³
50. Bigtech enterprises provide services to process this data and have started offering related financial services. Some have launched their own credit cards, with a targeted design for smartphones, including numberless cards, and digital payments through proprietary platforms. While these enterprises may benefit from operating outside the regulatory perimeter, in some countries they often face pressures from national regulatory agencies, pushing these enterprises to establish partnerships with registered financial institutions.⁵⁴

2.4.2. Digitalization in the financial services as a contribution to financial inclusion and enterprise development

51. The World Bank has defined financial inclusion as meaning “that individuals and businesses have access to useful and affordable financial products and services that meet their needs – transactions, payments, savings, credit and insurance – delivered in a responsible and sustainable way”.⁵⁵
52. The Addis Ababa Action Agenda of the Third International Conference on Financing for Development, adopted in 2015, calls for Member States to integrate “financial inclusion as a policy objective in financial regulation”, and to ensure the “policy and regulatory environment supports financial market stability”. While promoting the use of a variety of financial providers, the Agenda also calls for the use of new technologies, such as mobile banking, payment platforms and digitalized payments to foster financial inclusion.⁵⁶

⁵⁰ ILO, *Skills shortages and labour migration*, 10.

⁵¹ Alliance for Financial Inclusion, *Digital Transformation of Microfinance and Digitization of Microfinance Services to Deepen Financial Inclusion in Africa*, African Financial Inclusion Policy Initiative, 2018.

⁵² OECD, *Financial Markets, Insurance and Private Pensions*, 68.

⁵³ Workstream, “Employers Turning to Apps Allowing Them to Pay Hourly Workers Daily”, blog.

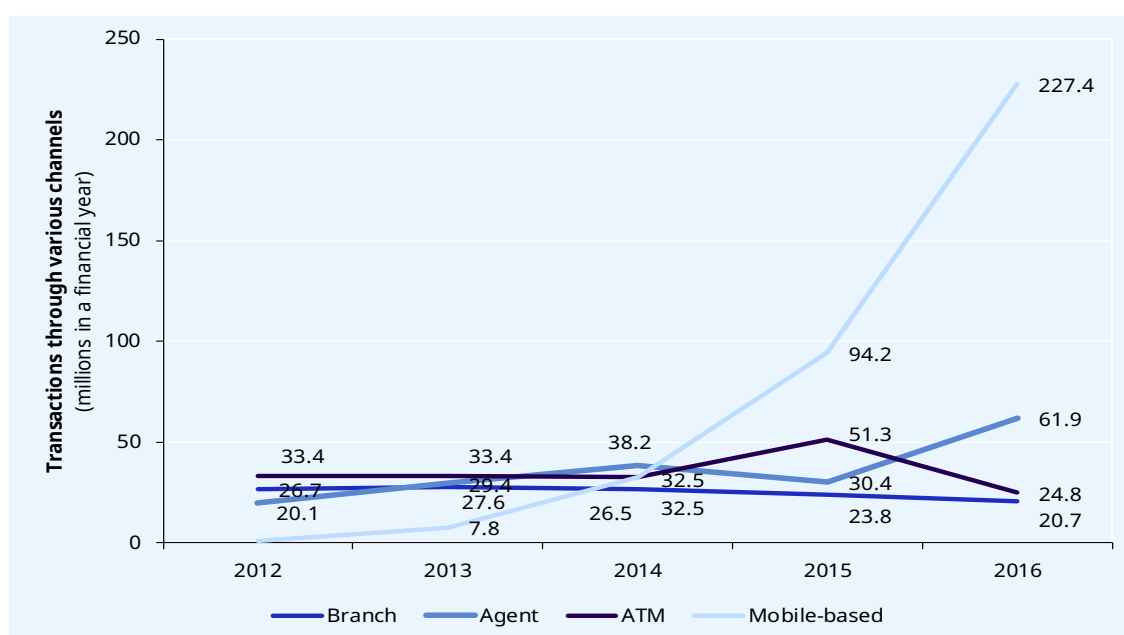
⁵⁴ Fintechnews Switzerland, “Alipay Accelerates EU Expansion with New Luxembourg E-Money License”, 22 January 2019.

⁵⁵ World Bank, “Financial Inclusion: Overview”, updated 2 October 2018.

⁵⁶ UN General Assembly, *resolution 69/313, Addis Ababa Action Agenda of the Third International Conference on Financing for Development (Addis Ababa Action Agenda)*, A/RES/69/313 (2015).

- 53.** Between 2014 and 2017, the share of adults who have an account with a financial institution or through a mobile money service rose globally from 62 to 69 per cent. In developing economies, the share rose from 54 to 63 per cent.⁵⁷
- 54.** The use of technologies in the provision of financial services plays an important role in increasing access to financial products for millions of vulnerable people and in ensuring equal access for women and men to financial markets. For instance, through the progress made in transferring money via mobile phones, or the increasing use of mobile payment services, China processed more than US\$10 trillion worth of transactions in 2017, reaching 502 million users; and India's Paytm has reached over 200 million users. Many of these payment methods are accepted by retailers in numerous countries, increasing cross-border digital payments.⁵⁸
- 55.** Furthermore, low-income countries are experiencing a surge in the use of digital financial instruments. This is the case of Afghanistan, where fewer than 200 of every 1,000 adults have bank accounts, but the value of mobile money transactions has increased fourfold to reach 1.2 per cent of GDP in 2018. The same applies in Mongolia, which saw the volume of mobile and internet banking transactions increase fourfold between 2015 and 2018.⁵⁹ In Kenya, one bank increased the use of mobile-based transactions by 141.2 per cent in 2016 (figure 5).

► **Figure 5. Equity Bank, Kenya – Evolution of transactions**



Source: MicroSave Consulting (MSC), "Case Study: Equity Bank – Transformation of a Microfinance Institution to a Digital FinTech Bank", 2016, 6.

- 56.** However, in developing countries, many SMEs remain excluded from formal borrowing. In Latin America and the Caribbean, while about 90 per cent of enterprises have an account, only half have a bank loan or line of credit from a bank. The 2019 Financial Access Survey results show that "bank lending to SMEs has remained stagnant at around 6 per cent of GDP

⁵⁷ World Bank, *The Global Findex Database 2017*.

⁵⁸ da Silva, "Financial inclusion in the age of fintech", 1.

⁵⁹ IMF, "Financial Access Survey, 2019 Trends and Developments", IMF Statistics.

over the past five years”.⁶⁰ In the European Union, the situation is somewhat different, with decreasing concerns around access to finance between 2009 and 2017 (16 per cent versus 7 per cent); however, the most recent survey conducted in 2020 highlights the negative effects COVID-19 had on the access of SMEs to finance (with 10 per cent of SMEs stating that access to finance is one of their main concerns).⁶¹

57. In this context, the adoption of fintech – coupled with targeted micro, small and medium-sized enterprises’ (MSMEs) policies – arises as an alternative source of financing for MSMEs, which could foster enterprise development and job creation, overcoming regulatory barriers and transaction costs common in traditional financial services. The emergence of technology-based financial models has created new ways for individuals and businesses to access credit, payments and insurance products. This has lowered costs and enabled access to new clients, such as MSMEs, previously unserved.⁶²
58. Crowdfunding⁶³ has been an increasing financing source for MSMEs. In China, for example, peer-to-peer funding has increased and is complementing the traditional financial services providers in reaching MSMEs and low-income households.⁶⁴ In developing countries, crowdfunding investments may grow to US\$96 billion per year by 2025.⁶⁵
59. Digital financial technology is also contributing to reducing the cost of remittance and cross-border payments, which has an important effect on workers in developing and emerging countries. Workers around the world, relying on sending money to their home countries, are benefiting from the reduction in the cost of remittances and cross-border payments.⁶⁶
60. Through digitalization, cooperative and community banks are strengthening their coverage of underserved populations, while at the same time reaching out to clients of bigger financial institutions. This is the case of the Co-operative Bank of Kenya, which has fully automated credit risk management and account opening processes. The cooperative has also integrated biometric and AI functions to prevent fraud and money laundering.⁶⁷
61. Access to finance has also been essential to foster women’s empowerment. Data show that women’s account ownership has increased in different regions, and especially in developing or emerging regions (figure 6). Digital financial remittances have also helped in empowering women within the household.

⁶⁰ IMF, “Financial Access Survey, 2019 Trends and Developments”, 6.

⁶¹ European Commission, *SAFE – Annual Survey on the Access to Finance of Enterprises 2020: Main results*, 2020.

⁶² Magnuson, “Regulating Fintech”, 1180.

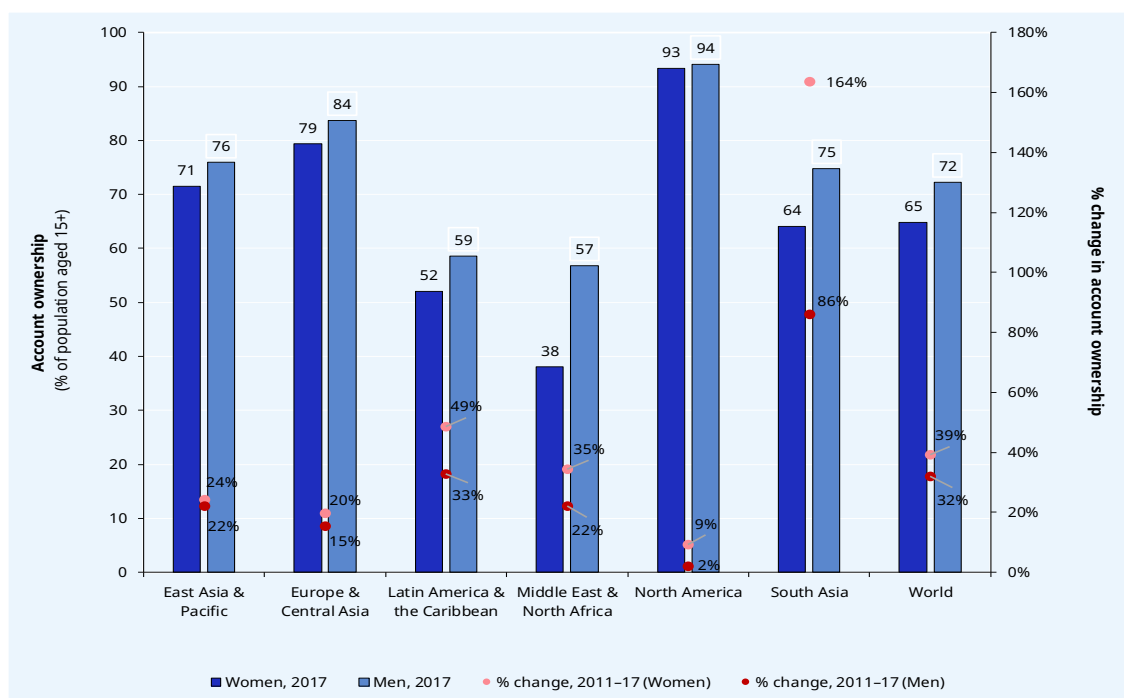
⁶³ Crowdfunding is the “phenomenon of early-stage companies raising money from large groups of people through the internet, often aided by social networks and viral media campaigns”. See Magnuson, “Regulating Fintech”, 1180.

⁶⁴ da Silva, “Financial inclusion in the age of fintech”.

⁶⁵ World Bank, *Crowdfunding’s Potential for the Developing World*, infoDev, Finance and Private Sector Development Department, 2013, 10.

⁶⁶ da Silva, “Financial inclusion in the age of fintech”, 2.

⁶⁷ ProcessMaker, “Case Study: Co-operative Bank of Kenya”, 2019.

► **Figure 6. Account ownership at a financial institution or with a mobile money service provider**

Source: World Bank, "World Development Indicators".

- 62.** Gaps still exist as women continue to lag behind men.⁶⁸ Globally, 72 per cent of men have an account, versus 65 per cent of women. In developing economies, the gender gap in account ownership is still at 9 per cent.⁶⁹
- 63.** The application of digital technologies to specific financial services, such as wage payments, can be particularly important in improving women's access to finance. A 2016 World Bank study was conducted in 21 garment factories that had opted for electronic wage payments, in a sector where women constitute 80 per cent of the workforce. The survey showed benefits in the use of mobile money in terms of time saving, security and greater ability to save, particularly for women.⁷⁰
- 64.** While digital technologies have expanded access to financial products, some exclusionary effects have also been noted, both for people and enterprises with no access to technology or lack of skills to use them.⁷¹ Other issues – such as consumer protection over pricing, biased customer selection, data use and privacy, as well as the risk of over-indebtedness⁷² – have also been raised. This is especially the case when weak financial literacy in a digital financial environment leads to high-risk-taking behaviours.

⁶⁸ ILO, *A Quantum Leap for Gender Equality: For a Better Future of Work For All*, 2019, 91–92.

⁶⁹ World Bank, *The Global Findex Database 2017*.

⁷⁰ Better than Cash Alliance, *Digitizing Wage Payments in Bangladesh's Garment Production Sector*, 2017, 10.

⁷¹ OECD, *Financial Markets, Insurance and Private Pensions*, 21.

⁷² Stephen Lerner et al., *Tipping the Balance: Collective Action by Finance Workers Creates "Regulation From Below"* (Friedrich-Ebert-Stiftung, 2018), 4.

65. The high-level principles for digital financial inclusion,⁷³ adopted by the G20 in 2016, try to address some of these challenges. They call for, among other things, the need to balance technology advances and risks, to provide an enabling regulatory environment, and to establish responsible digital financial practices to protect consumers and ensure data protection. Efforts to transition to responsible digital payments are also being made in the context of the Better Than Cash Alliance, which issued responsible digital payments guidelines aimed at providing a tool to support responsible practices in the transition to digital payments.⁷⁴

► 3. Challenges and opportunities for decent work in the context of digitalization in the financial sector

66. The ILO Centenary Declaration for the Future of Work (Centenary Declaration)⁷⁵ calls on the ILO to direct its efforts to harness “the fullest potential of technological progress and productivity growth” to meet the goal of decent work and ensure “a just sharing of the benefits for all”. The megatrends discussed above, particularly digitalization, are deeply transforming the financial sector labour market, its organization of work and sectoral employment patterns; in this respect, an analysis of challenges and opportunities for decent work will help to adapt policy responses to the changing reality.

3.1. Employment: Overview of job trends in the sector

67. Globally, over 52 million people were estimated to be employed in the financial services sector in 2019,⁷⁶ a 27 per cent increase since 2008. During this period, the overall employment in the sector increased mainly in developing or emerging economy regions, while in developed regions the increase was much more contained (figure 7). Furthermore, employment in financial and insurance services increased in the second and third quarters of 2020 (during the COVID-19 pandemic) by 3.4 per cent. This increase is associated with the increase in demand for high-skilled workers and digital services.⁷⁷

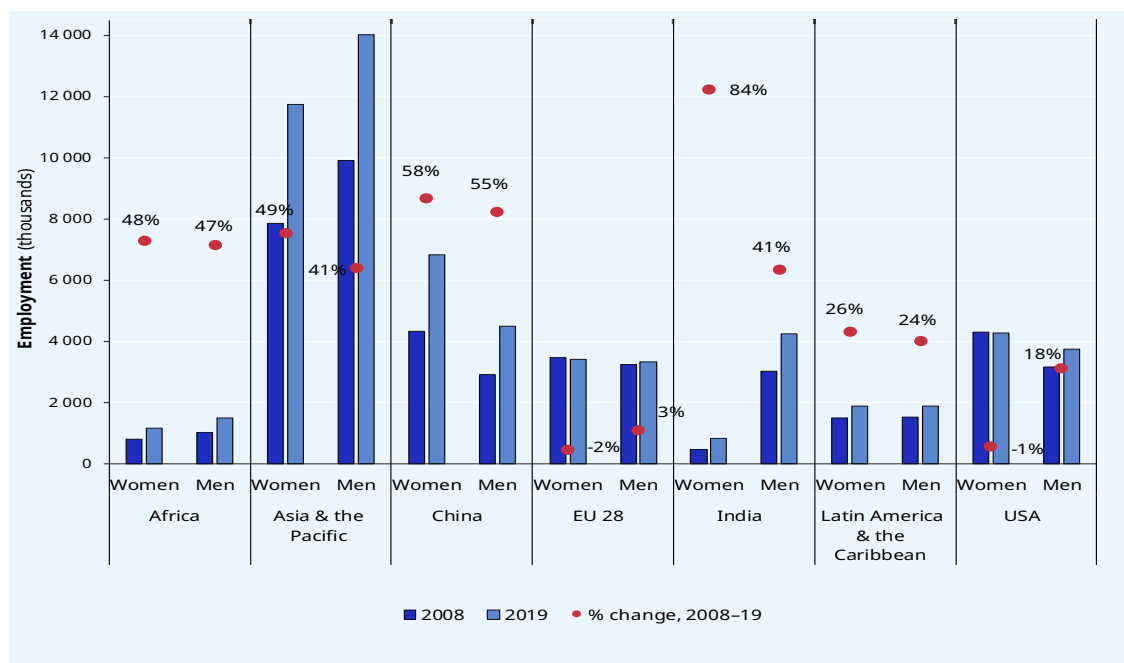
⁷³ Global Partnership for Financial Inclusion, *G20 High-Level Principles for Digital Financial Inclusion*, 2016.

⁷⁴ Better Than Cash Alliance, *Responsible Digital Payments Guidelines*, 2016.

⁷⁵ ILO, *ILO Centenary Declaration for the Future of Work*, International Labour Conference, 108th Session, 2019.

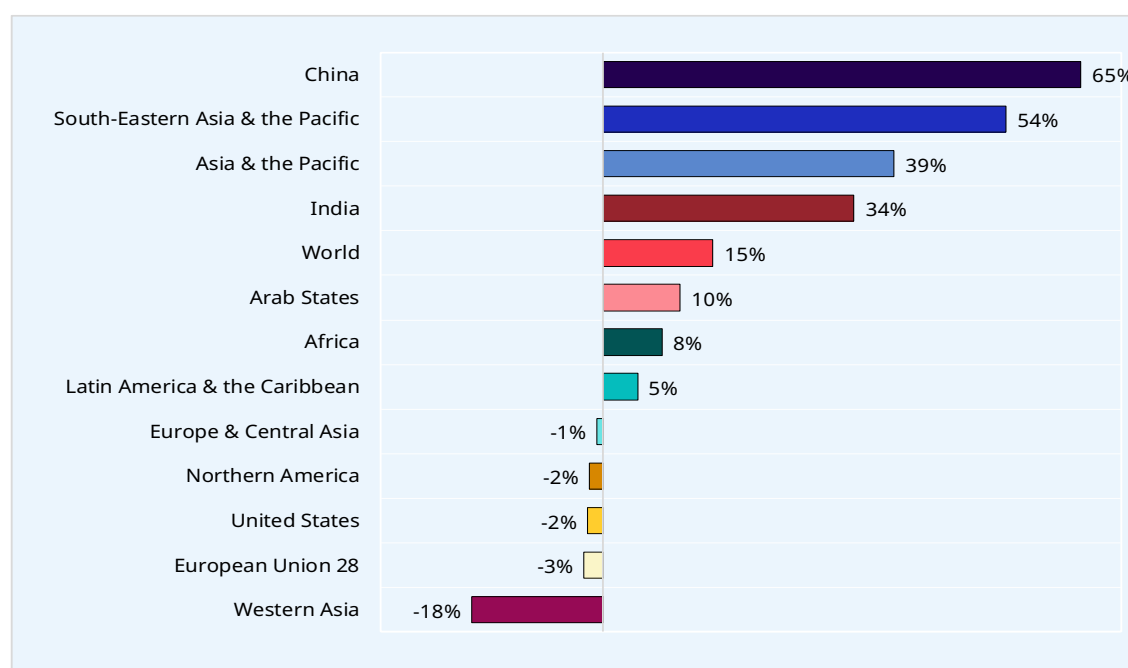
⁷⁶ Based on ILO modelled estimates.

⁷⁷ ILO, *ILO Monitor: COVID-19 and the World of Work. Seventh Edition*, 25 January 2021, 2 and 13.

► **Figure 7. Employment in financial services by region and gender, 2008–19**

Source: ILO-modelled estimates.

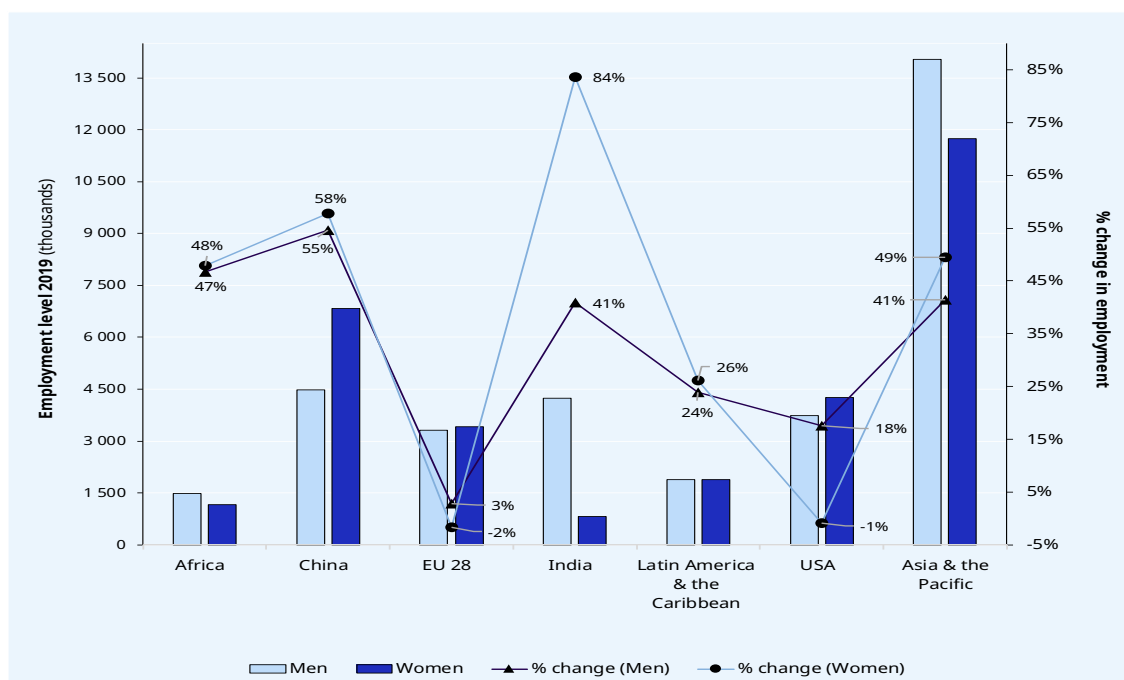
- 68.** Financial sector employment in emerging economies benefited not only in absolute terms, but also relative to the overall economy. The share of financial sector employment as a percentage of total regional or country employment increased in the developing and emerging countries and slightly declined in such developed countries or regions as the United States and the European Union. Between 2008 and 2018, this indicator increased 8 per cent in Africa, over 10 per cent in the Arab States, and 39 per cent in Asia and the Pacific, with China and India leading the way (figure 8).

► **Figure 8. Share of financial sector employment in total employment, 2008–19**

Source: ILO-modelled estimates.

69. In the same period, female employment in the financial sector increased in all the emerging economy or developing regions. In Asia and the Pacific, the number of women employed in the financial sector increased more than the number of men (49 per cent versus 41 per cent), while in Africa this change was 48 per cent of women versus 47 per cent of men. However, female employment in developed economies witnessed a negative variation with -2 per cent in the European Union and -1 per cent in the United States (figure 9).

► **Figure 9. Change in employment by gender, selected regions and countries, 2008–19**



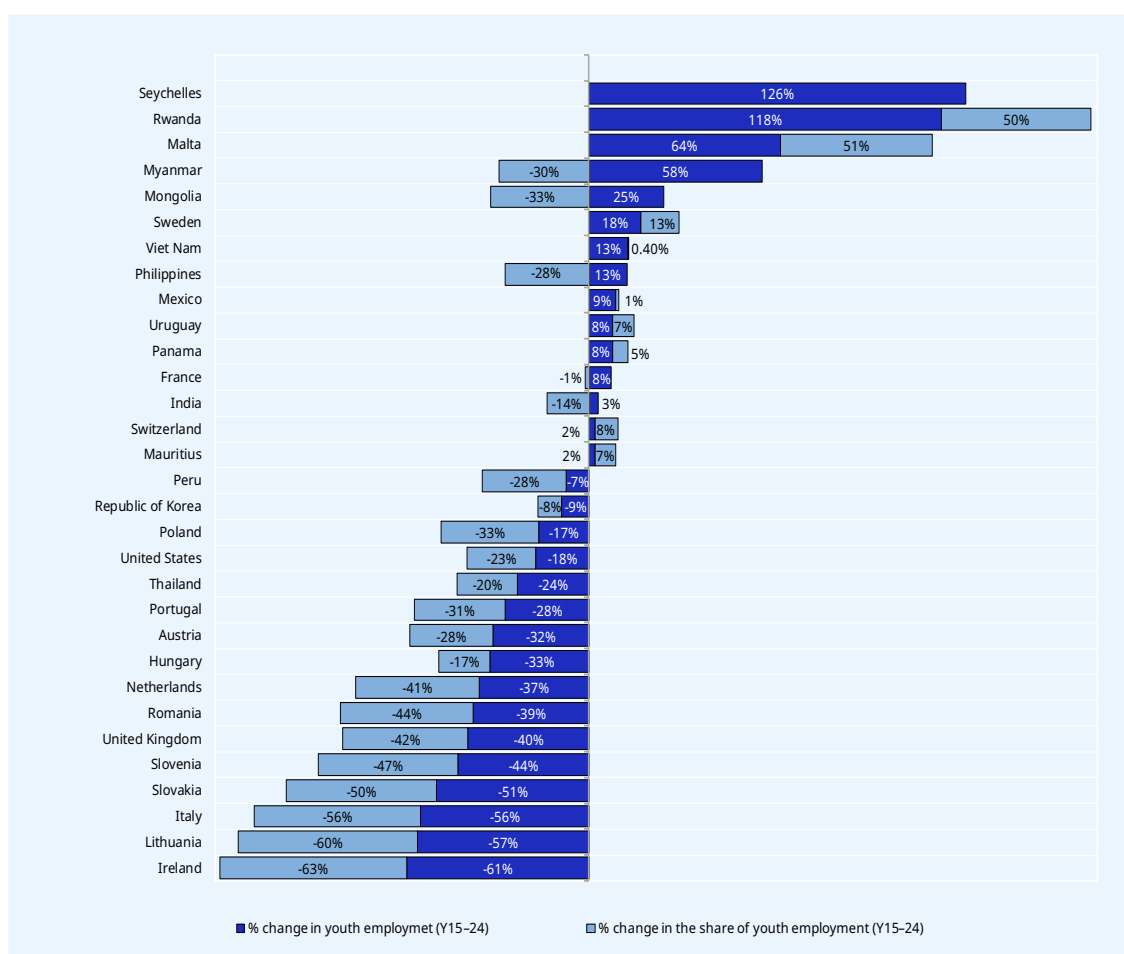
Source: ILO-modelled estimates.

Youth employment

70. According to the 2016 World Economic Forum survey,⁷⁸ young demographics and the middle class in emerging markets are among the top drivers of job growth in the financial services.

⁷⁸ World Economic Forum, *The Future of Jobs: Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution*, Global Challenge Insight Report, 2016, 8.

Figure 10. Change in youth employment (15–24 years of age) in the financial services sector, 2008–19



Note: Countries included in ILOSTAT with reliable data for the specific period. Data for Malta, Mexico, Myanmar, Panama, Seychelles, Slovenia, Thailand and Uruguay are from 2015–19; India, 2012–19; Rwanda, 2014–19.

Source: ILO, ILOSTAT database.

- 71.** Overall, 4.6 million young people (15–24 years old) were estimated to be employed in the financial sector in 2020, representing a 1.1 per cent share in global youth employment, and 54.7 per cent of them were young women.⁷⁹ Between 2008 and 2019, youth employment in the financial sector increased mainly in Asia and the Pacific and Latin America and the Caribbean, while it declined in Northern, Western and Southern Europe and Northern America (figure 10). The ILO reported that between 2005 and 2015, young people accounted for half of employment growth in this sector in China and Indonesia, with young workers in the financial sector more than tripling in China.⁸⁰

Labour composition

- 72.** Advances in technology in the financial services sector are shifting occupations into areas requiring higher skills, leaving repetitive and routine tasks to machines. Within a company's operations, back-office workers are particularly susceptible to automation: globally, the

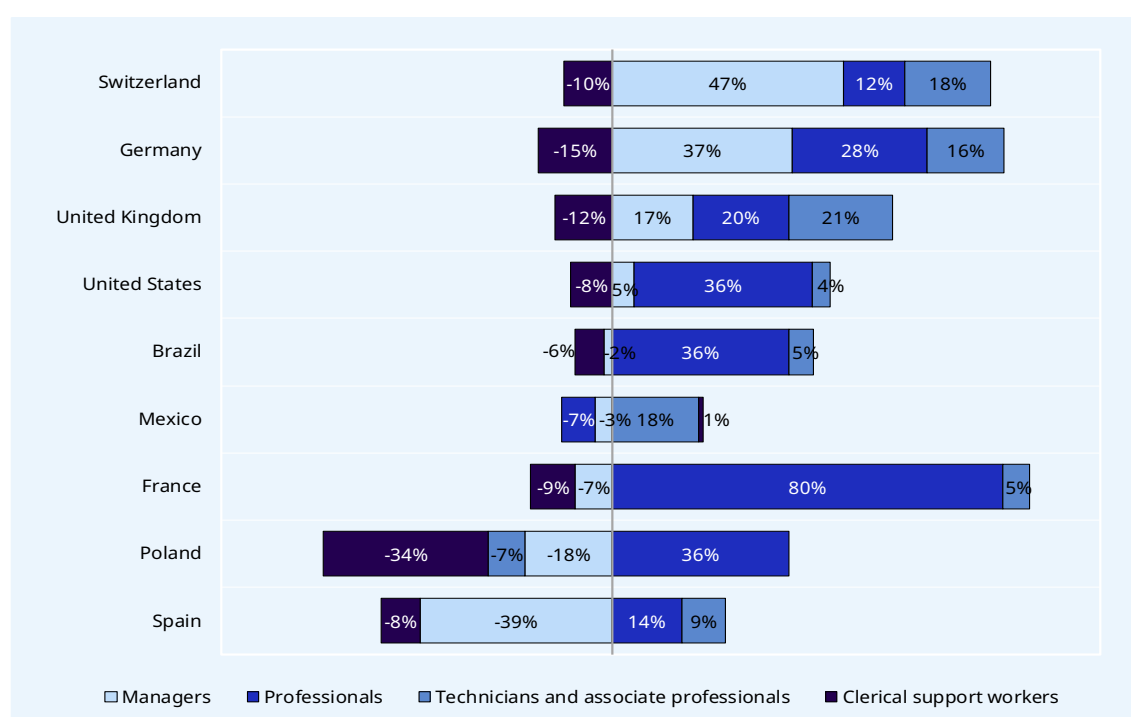
⁷⁹ ILO, *ILO Monitor: COVID-19 and the World of Work. Fourth Edition*, 27 May 2020, 8.

⁸⁰ ILO, *Global Employment Trends for Youth 2017: Paths to a Better Working Future*, 2017.

digitalization of such operations was a strategic priority for 28 per cent of financial institutions in 2019.⁸¹ The resulting automation of middle and back-end business processes (such as marketing, sales and customer support services) has implications for the potential new sets of skills required in the financial sector workforce, as well as for the quality of jobs and income distribution.

- 73.** To different degrees, the number of clerical support workers decreased across the various countries between 2013 and 2019, while professionals and technicians employed in the financial sector increased in almost all the countries. Germany, Switzerland, the United Kingdom and the United States saw an increase in managerial positions, versus declining numbers in countries like Brazil, France, Mexico, Poland and Spain (figure 11).

► **Figure 11. Variation of workers in financial services sectors by occupation, 2013–19**



Source: ILO, ILOSTAT database.

- 74.** This may suggest that while some countries hired considerably more workers in the sector, they reduced low-skilled positions (such as clerical workers); in developed countries, the major changes concerned the workforce composition (in occupational terms) rather than its size, increasing managerial and professional positions.
- 75.** Digitalization has decentralized labour in the financial services.⁸² It was estimated that between 2013 and 2018 the sector increased its worldwide expenditure in business outsourcing by more than 20 per cent.⁸³

⁸¹ Statista, “Strategic priorities for financial services organizations worldwide in 2020”, 2020.

⁸² Charlotte Béziade and Serge Assayag, *L’impact du numérique sur les métiers de la banque*, Observatoire des métiers, des qualifications et de l’égalité professionnelle entre les femmes et les hommes dans la banque, Section 1.2, 2014.

⁸³ Statista, “Worldwide expenditure on finance and accounting business process outsourcing services by industry from 2013 to 2018”, 2019.

76. The skills profiles of the financial workforce are especially affected by digitalization. As discussed above, the sector draws ICT workers from other sectors of the economy and is the one utilizing most AI applications.⁸⁴ In Sweden, for instance, approximately 27 per cent of fintech workers in the city of Stockholm come from computer software and IT services.⁸⁵

3.1.1. Job creation in the financial sector

77. The debate around job creation versus job loss brought about by digitalization is still open. A global survey conducted among 333 financial enterprises that piloted AI capabilities concerning the AI impact on the workforce found that job creation and destruction forces may offset each other, that is to say, the net job effect of AI would tend to zero.⁸⁶
78. Digitalization may open a range of job opportunities across countries: it can create new positions and transform old ones, and it can increase the demand for workers in the financial sector. Digitalization is also changing the business models and the organization of work in the sector, with implications for the nature of the jobs and tasks of those who remain in the sector.
79. The uncertainty around the job loss–job creation dynamic will require governments and social partners to prepare for, and tackle, challenges associated with digitalization and AI application and their unwanted effects on jobs, labour protection and businesses, including through social dialogue. Governments, together with the social partners, can take advantage of these developments and unlock growth and job creation in the sector through action in three areas: promoting entrepreneurship and innovation, catalysing investment in infrastructure, and streamlining business while ensuring the protection of labour rights and equal access to benefits for all workers operating in the digital financial sector environment.

The contribution of digitalization to the transition to the formal economy and the development of MSMEs

80. The debate around new technologies and the transition to formality has different dimensions encompassing the emergence of new forms of work. It has issues about the capacity of the informal economy or MSMEs to integrate new technologies into their business, and about how technologies can be used to facilitate such transition and to foster enterprise development.⁸⁷
81. The application of technologies in the financial sector has incentivized informal economic units to transition to the formal economy, and has created opportunities for MSMEs to access credit and markets. In particular, some governments have encouraged registration and tracking of transactions through digital tools, and also wage payments, mitigating informality and increasing transparency and accountability.⁸⁸
82. Some countries have registered an increase in people employed in MSMEs operating in the financial services sector and in the overall number of these enterprises in the sector. In

⁸⁴ China Institute for Science and Technology Policy at Tsinghua University, *China AI Development Report 2018*, 2018, 88.

⁸⁵ Michal Gromek, *Stockholm Fintech Report 2018*, Stockholm School of Economics, 2018.

⁸⁶ McKinsey & Company, *Global AI Survey: AI proves its worth, but few scale impact*, 2019, 10.

⁸⁷ Juan Chacaltana et al., “New technologies and the transition to formality: The trend towards e-formality”, ILO Employment Working Paper No. 247, 2018.

⁸⁸ Chacaltana et al., “New technologies and the transition to formality”.

2020, in the United Kingdom there were 19,400 enterprises in the financial services sector (with the exception of insurance and pension enterprises), the majority employing less than 5 people, and only 135 enterprises employing 250 people or more.⁸⁹ In 2017 in Uruguay, microenterprises represented 85 per cent of financial sector enterprises, versus 19 per cent of small enterprises and 3 per cent of medium-sized enterprises in the sector.⁹⁰ Data from the Organisation for Economic Co-operation and Development (OECD) confirm an increasing employment trend in financial sector MSMEs in some emerging and developing countries (table 2).

► **Table 2. Change in number of employed persons by size of enterprise, selected countries and years**

Country	Size of enterprise				
	Micro	Small	Medium	Total MSMEs	Large
Brazil, 2008–14	53%	10%	27%	27%	-27%
Canada, 2008–16	-2%	-7%	9%	2%	12%
Israel, 2011–18	20%	30%	-0.1%	18%	6%
Japan, 2011–16	-9%	1%			
Republic of Korea, 2008–15	5%	-45%	-52%	-40%	34%
Mexico, 2009–13	46%	43%	-36%	30%	7%
Turkey, 2008–12			25%		11%
United States, 2008–15	-5%	-14%	-10%	-9%	-4%

Definitions: Micro = 1–9 employees; Small = 10–49 employees; Medium = 50–249 employees; SMEs = 1–249 employees; Large = 250+ employees.

Source: OECD data.

83. Globally, 33 per cent of insurtech enterprises (technology-based insurance enterprises) employed between 11 and 50 people in 2016.⁹¹ While the emergence of fintech and insurtech enterprises as SMEs can contribute to local economic development and a decentralization of financial services, challenges remain, especially in emerging and developing countries, to ensure MSMEs can fully benefit from the financial digitalization process.
84. In this context, governments, together with employers' and workers' organizations, can play an important role in creating an enabling environment for sustainable enterprises, including cooperatives, to operate in the digital financial sector. This can allow MSMEs to increase their productivity, contributing to value-added generation and the creation of decent jobs.⁹² The positive contribution of digitalization to enterprise development will also

⁸⁹ Statista, "Number of VAT/PAYE based enterprises in the financial service activities sector in the United Kingdom (UK) in 2020, by employment size band", 2020.

⁹⁰ Ministerio de Industria, Uruguay, *Encuesta Nacional de Mipymes industriales, comerciales y de servicios*, 2017.

⁹¹ Statista, "Distribution of Insurtech companies worldwide in 2016, by number of employees", 2016.

⁹² ILO, *Resolution concerning small and medium-sized enterprises and decent and productive employment creation*, International Labour Conference, 104th Session, 2015.

depend on putting integrated policies in place to favour the transition to the formal economy.⁹³

- 85.** In some countries, the number of own-account workers and contributing family members has increased in the sector (table 3). In some developing countries, financial and insurance services represent a significant portion of the informal sector, as is the case in Zambia (64.4 per cent).⁹⁴ In South Africa, non-VAT registered businesses in the sector grew from 5.8 to 7.9 per cent between 2001 and 2017.⁹⁵

► **Table 3. Change in level of employment by status, selected countries and years, 2008–20**

Country	Employees	Employers	Own-account workers	Contributing family workers
Austria, 2011–20	-6%	4%	-27%	
Belgium, 2008–20	-13%	-1%	-0.2%	
Brazil, 2012–20	-8%	89%	110%	226%
France, 2008–20	14%	74%	164%	
Germany, 2008–20	1%	-19%	-51%	
India, 2012–19	32%	4%	-28%	-82%
Italy, 2010–20	-5%	-12%	0.3%	-27%
Republic of Korea, 2015–20	-1%	-34%	-39%	56%
Mexico, 2008–20	46%	-55%	222%	-83%
Philippines, 2008–19	22%	-33%	-27%	-75%
Russian Federation, 2017–19	0.2%	81%	67%	-22%
Switzerland, 2009–19	-0.3%	24%	-28%	
Turkey, 2009–20	14%	10%	66%	-23%
United Kingdom, 2009–20	9%	-8%	45%	
United States, 2008–20	9%		-15%	29%

Source: ILO, ILOSTAT database.

3.1.2. Job transformation and job losses in the context of digitalization in the financial sector

- 86.** It is estimated that the financial services sector may be able to automate 43 per cent of tasks,⁹⁶ although with variations across occupations. Particular concerns have been raised

⁹³ ILO, *Transition from the Informal to the Formal Economy Recommendation, 2015 (No. 204)*, International Labour Conference, 104th Session, 2015.

⁹⁴ Ministry of Labour and Social Security, Zambia, *2019 Labour Force Survey Report*, 2020, 54.

⁹⁵ Statistics South Africa, *Survey of Employers and the Self-employed 2017*, 22.

⁹⁶ ILO, *A Quantum Leap for Gender Equality*, figure 1.28, 50.

about digitalization displacing jobs in the financial sector, with consequences on income security, working conditions and livelihoods of the affected workforce, especially low-skilled workers.

- 87.** A fair distribution of the digitalization gains among the different segments of the labour market – from improved productivity to accessing better-paying occupations – will require a mix of actions to support the changes in occupational demand, while preserving a competitive environment to encourage innovation and boost aggregate demand. This includes targeted policies around education and skills development strategies, while promoting the tax incentives and social protection systems needed to reduce unwanted effects on workers and possible income inequalities.⁹⁷

Occupational shifts and wage trends

- 88.** Over the past decades, research has pointed to job shifts in the context of automation,⁹⁸ mainly benefiting higher-skilled workers. Existing studies have assessed the “potential” of job replacement brought about by automation in some financial sector occupations (table 4).⁹⁹

► **Table 4. Automation probability in the financial sector (from 0 to 1)**

Occupation	Probability
Insurance claims clerks	0.98
Credit analysts	0.98
Insurance sales agents	0.92
Financial advisers	0.58
Financial specialists	0.33
Financial analysts	0.23

Source: Adapted from Carl Benedikt Frey and Michael A. Osborne, “[The future of employment: How susceptible are jobs to computerisation?](#)”, *Technological forecasting and social change* 114, Issue C (2017).

- 89.** Overall, financial institutions pay their employees significantly above the levels that workers earn in other sectors. A sample of countries shows increases in earnings, which are particularly significant among managers (table 5). This sectoral pattern is compounded by a general trend of increasing wages in the ICT occupations, as part of a strategy to recruit high-skilled workers¹⁰⁰ while automating low-skilled positions in the sector.

⁹⁷ Ekkehard Ernst et al., *The economics of artificial intelligence: Implications for the future of work*, ILO Future of Work Research Paper No. 5, 2018.

⁹⁸ Peter Dizikes, “[How many jobs do robots really replace?](#)”, Massachusetts Institute of Technology (MIT) News Office, 4 May 2020.

⁹⁹ Frey and Osborne, “The future of employment”, 269.

¹⁰⁰ Thomas Philippon, “[The FinTech Opportunity](#)”, BIS Working Paper No. 655, 2017, 7.

► **Table 5. Percentage change in mean nominal hourly earnings by occupation, 2009–19**

Country	Managers	Professionals	Technicians and associate professionals	Clerical support workers	Service and sales workers
Switzerland, 2009–19	24%	-0.02%	26%	26%	37%
Brazil, 2012–19	37%	5%	1%	4%	23%
United Kingdom, 2009–18	69%	30%	41%	25%	53%
Greece, 2015–18	41%	11%	15%	14%	15%

Source: ILO, ILO microdata, <https://ilostat.ilo.org/topics/wages>.

- 90.** While concerns have been raised about a negative impact on middle- and low-skilled positions (skill-biased technological change),¹⁰¹ recent studies point to a more nuanced view whereby “job profiles might change by adding new tasks or modifying existing ones instead of suppressing a job entirely”.¹⁰² The outcome of these transformations will depend on country policies and frameworks regarding education and training infrastructure, tax incentives and social benefit systems, as well as proactive employment policies.¹⁰³
- 91.** Beyond the automation of tasks, digitalization has also driven the “self-service” disintermediation,¹⁰⁴ whereby the consumer carries out financial service labour; some examples include money withdrawal or balance checking. This trend can reduce jobs without triggering real productivity increases.¹⁰⁵

Job transformation in the financial sector

- 92.** The financial advice market is particularly prone to job transformation. In some instances, digital tools have been extremely useful – for example, to market advisers through data backed information – in others, workers have already been replaced by the introduction of these new tools and, more recently, robo-advisers are emerging as a lower-cost option, facilitated by the emergence of digital platforms offering such services.¹⁰⁶
- 93.** This trend is uneven across countries: from 2012 to 2017, the market share of the global robo-advisory market corresponded to 57 per cent in the United States, 9 per cent in Germany, 8 per cent in the United Kingdom and 6 per cent in China.¹⁰⁷ In general, United States platforms offer higher levels of automation, while continental European ones maintain high levels of human interaction with their clients.¹⁰⁸

¹⁰¹ World Economic Forum, “[This was the year automation started taking over the workforce](#)”, 26 May 2020.

¹⁰² Ernst et al., *The economics of artificial intelligence*, 9.

¹⁰³ Ernst et al., *The economics of artificial intelligence*.

¹⁰⁴ Béziade and Assayag, *L’impact du numérique sur les métiers de la banque*, 24.

¹⁰⁵ World Economic Forum, “[This was the year automation started taking over the workforce](#)”.

¹⁰⁶ OECD, *Financial Markets, Insurance and Private Pensions*, 82.

¹⁰⁷ CBInsights, “[A Wealth Tech World: Mapping Robo-Advisors Around The Globe](#)”, Research Briefs, 21 April 2017.

¹⁰⁸ OECD, *Financial Markets, Insurance and Private Pensions*, 85.

94. Fintech enterprises have facilitated the push towards robo-advisers and chat boxes and they are leading in this market, with established financial institutions trying to catch up in the race to digitalization. In particular, pension funds have increasingly adopted robo-advisers for asset management services, especially targeting mass affluent clients.¹⁰⁹ While these replace some jobs, they also create new ones (such as workers servicing chat boxes and more programmers).
95. Technological developments have also facilitated the use of platform workers in the financial sector. In 2019, 7 per cent of employees in financial institutions worldwide were platform workers. PricewaterhouseCoopers (PwC) estimates that within a few years this number will be between 15 and 20 per cent.¹¹⁰

3.2. Skills and lifelong learning

96. Lifelong learning and skills development systems are key to investing in the capabilities of current and future workforces, to strengthening decent work and to a just transition to a future of work in which the financial sector fully capitalizes on the benefits of digitalization while addressing the needs of those workers whose jobs are likely to be displaced.

3.2.1. Skills needs and future demand for skills in the financial sector

97. While the previous wave of automation replaced “physical” tasks, AI, as well as distributed ledger technology, robotic process automation and data analytics are replacing “mental” tasks, resulting in a combination of task substitution, task complementarity and task expansion. Employment policies and relevant skills development will be shaped by these three dynamics, and there may be a need for broader “technology and innovation policies in place to orient the technological progress in socially desired ways”.¹¹¹

Skills development in the digital financial sector

98. Digitalization in the financial services, whether through fintech enterprises or technology adoption by traditional financial institutions, is changing the skills profile of the sector. However, the sector is facing challenges in preparing its workforce to meet the digitalization process because of a lack of high-skilled workers, or skills mismatches in the existing workforce,¹¹² which may call for more long-term investment in education systems, as well as in targeted training for workers.
99. COVID-19 has created more demand for digitized financial services, changing customer behaviours, which may have long-lasting effects on the way financial services are provided. The pandemic has accentuated talent shortages and capability gaps, but has also accelerated the digitalization of work processes, the use of remote work, task automation, and the relevant digitalization of upskilling and reskilling methods.¹¹³

¹⁰⁹ OECD, *Financial Markets, Insurance and Private Pensions*, 87.

¹¹⁰ PwC, *The productivity agenda: moving beyond cost reduction in financial services*, 2019, 14.

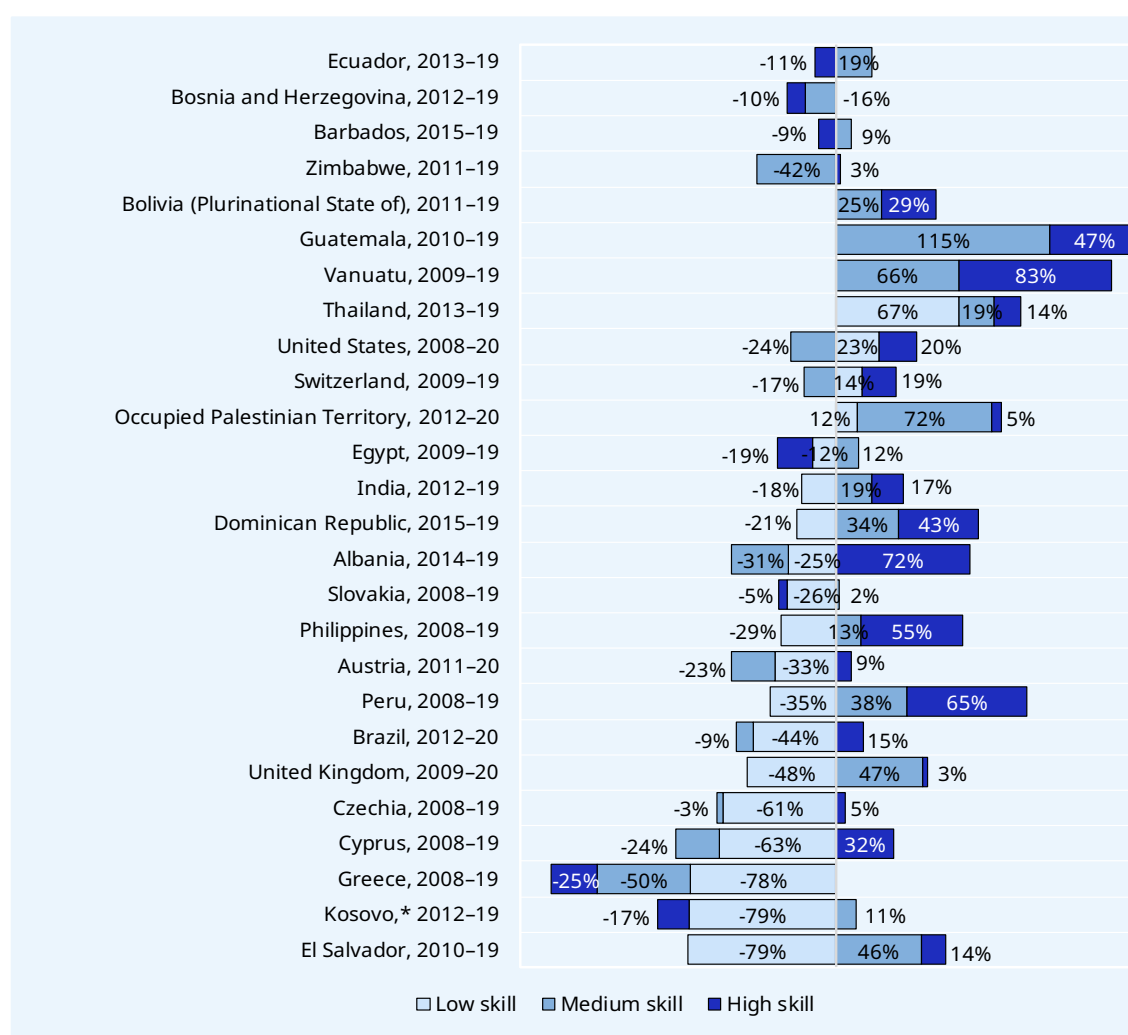
¹¹¹ Ernst et al., *The economics of artificial intelligence*, 15.

¹¹² World Economic Forum, *The Future of Jobs Report 2018*, 2018.

¹¹³ World Economic Forum, *The Future of Jobs Report 2020*, 2020, 134.

- 100.** While more tech-savvy young people are entering the financial sector workforce, in some countries the pace of technological change and transformation in the financial sector is such that young people are not entering the labour market fast enough to meet the high demand for digital and data skills.¹¹⁴
- 101.** As the need for skills associated with AI and machine learning, fintech engineering and cybersecurity is rising in the financial sector,¹¹⁵ other tasks and skills, corresponding to lower skills levels, are becoming less relevant in the sector (figure 12 and table 6).

► **Figure 12. Change in skills level in the financial services sector, selected countries and territories and selected years**



* As defined in UN Security Council resolution 1244 of 1999.

Note: Skills level classification is internationally standardized. Accordingly, one occupation, regardless of where and by whom it is performed, is always assigned to the same skill level.

Source: ILO microdata.

¹¹⁴ Accenture, *Workforce 2025: The Financial Services Skills and Roles of the Future*, 2019.

¹¹⁵ World Economic Forum, *The Future of Jobs Report 2020*.

► **Table 6. Emerging and declining occupations in the financial services**

Emerging occupations	Declining occupations
Data analysts and scientists	Data entry clerks
Big data specialists	Administrative and executive secretaries
Digital marketing and strategy specialists	Accounting, bookkeeping and payroll clerks
AI and machine learning specialists	Accountants and auditors
User experience and human-machine interaction designers	Client information and customer service workers
Digital transformation specialists	Bank tellers and related clerks
Information security analysts	Statistical, finance and insurance clerks
Database and network professionals	Financial analysts
Business development professionals	Insurance underwriters
Fintech engineers	General and operations managers
Cybersecurity specialists	

Source: World Economic Forum, *The Future of Jobs Report 2020*, 2020.

Skills transformation

102. The skills changes resulting from digitalization in the financial sector will encompass both automation and technological augmentation.¹¹⁶ In the United States, a 2019 study estimated what the proportion of these two phenomena would be by 2025 (table 7).

► **Table 7. Automation/augmentation in banking and insurance sectors**

Banking tasks			Insurance tasks		
Roles	Automation	Augmentation	Roles	Automation	Augmentation
Loan officer	8%	46%	Sales agent	8%	46%
First-line supervisor, office and administration	8%	44%	Claims adjuster, examiner and investigator	8%	46%
Loan interviewer and clerk	8%	44%	Underwriter	8%	46%
Teller	7%	44%	Claims and policy processing clerk	8%	44%
Customer service representative	6%	31%	Actuary	3%	46%

Source: Accenture, *Workforce 2025: The Financial Services Skills and Roles of the Future*, 2019.

¹¹⁶ Accenture, *Workforce 2025*, 5.

- 103.** In this context, the development of skills for a more digitalized financial sector must consider both reskilling processes – building new knowledge and skills to prepare the workforce to adopt new technologies – and upskilling processes – expanding current workers' skills to enable them to move to new roles inside or outside the company (table 8).¹¹⁷

► **Table 8. Upskilling and reskilling in the financial sector**

Process	Examples
Upskilling	Bank tellers moving to marketing roles
	IT developers moving to cybersecurity
	Compliance professionals moving to algorithm quality review
Reskilling	Financial advisers working alongside robo-advisers to assess asset allocation models
	Risk professionals using advanced analytics to build new risk models
	Customer service representatives working alongside chat-bot channels

Source: PwC, *Fit to compete: Accelerating digital workforce transformation in financial services*, 2019, 8.

3.2.2. Framing the skills development and lifelong learning discussion in the financial sector

- 104.** Enhancing access and realizing opportunities for skills development for those workers more susceptible to automation or technological changes may require effective social dialogue and updating competency standards and training programmes to help them to effectively manage the transition and equip the financial sector's workforce with the skills required to keep up with a changing world.
- 105.** Relevant international labour standards – the ILO Human Resources Development Convention, 1975 (No. 142), and the Human Resources Development Recommendation, 2004 (No. 195)¹¹⁸ – as well as the Centenary Declaration, can help to frame the discussion around skills development and lifelong learning in the sector.
- 106.** The two above-mentioned international labour standards provide the definitions and the actions to put in place or review national human resources development, education, training and lifelong learning policies, based on the principle of social dialogue, and can help in designing appropriate sectoral actions in the financial services. Convention No. 142 calls for cooperation with employers' and workers' organizations in setting policies and programmes of vocational guidance and vocational training. In line with Recommendation No. 195, the development of quality training programmes in the financial sector may require governments to strengthen social dialogue and collective bargaining at the sectoral and enterprise levels (Paragraph 5(f)), and to use social dialogue to formulate and apply lifelong learning, training and education policies (Paragraph 1).

¹¹⁷ PwC, *Fit to compete*, 8.

¹¹⁸ ILO, *Human Resources Development Convention, 1975 (No. 142)*, and *Human Resources Development Recommendation, 2004 (No. 195)*.

- 107.** An example is the Singapore Skills Framework for Financial Services developed as a component of the Financial Services Industry Transformation Plan.¹¹⁹ It is a multi-stakeholder plan, developed together with the Government, the industry associations and the unions, as well as other key national stakeholders.¹²⁰
- 108.** The Centenary Declaration calls for the ILO to further develop its human-centred approach to the future of work, directing its efforts to promoting skills development for workers throughout their working lives as a joint effort by governments and social partners, and to ensuring that education and training systems are responsive to the transformations taking place in the world of work.
- 109.** In this framework, governments, academia, vocational education institutions and employers' and workers' organizations operating in the financial sector may need to come together to devise large-scale skills development programmes, using different financing schemes (for instance, public-private partnerships or co-financing between governments, workers and enterprises), to upskill or reskill the sector's labour force in accordance with market needs and dynamics. This was the case for the 2016 Skills Investment Plan for Scotland's financial services sector, which sought to strengthen the relationship among the industry, donors and educational institutions, while providing a basis for private and public actors to invest in skills development.¹²¹

3.2.3. Towards policies and investments in skills development and lifelong learning in the context of a digitalized financial sector

- 110.** Policies for skills development and lifelong learning in the sector would require a focus not only on highly skilled workers in the sector, but also on those in process-oriented occupations that are more likely to be automated.¹²² Such policies have become more relevant with the COVID-19 pandemic, which has increased the speed and scale for skills development of the sectoral workforce. Studies found that companies' strategies have accelerated the implementation of upskilling and reskilling programmes by 30 per cent, as a result of the pandemic.¹²³
- 111.** While digital upskilling is important for the financial sector institutions to meet their goals, this can only be achieved through inclusive actions benefiting the well-being of the entire workforce, encompassing those working indirectly or part-time¹²⁴ and emerging types of working arrangements. The promotion of skills acquisition, competencies and qualifications for all workers throughout their working lives will be essential to address existing and future skills gaps, while responding to labour market needs.
- 112.** To target upcoming transformations and employers' adaptations to new realities and/or positions and occupations, countries will need to provide basic, digital and specialist skills

¹¹⁹ SkillsFuture Singapore, "Skills Framework for Financial Services".

¹²⁰ The framework offers guidance on careers options, occupations and jobs, emerging skills and training programmes for skills upgrading. The programme serves both workers and prospective workers, employers and training providers, and identifies skills and competencies for each job role mapped out by the programme.

¹²¹ Skills Development Scotland, *Skills Investment Plan for Scotland's financial services sector*, second edition, 2016.

¹²² Accenture, *Workforce 2025*, 15.

¹²³ World Economic Forum, *The Future of Jobs Report 2020*, 134.

¹²⁴ PwC, *Fit to compete*, 5.

for workforce entrants, and upskilling and reskilling for current workers, preparing education systems to respond to labour market needs.

- 113.** Policies and investments in skills development for the financial sector will need to consider patterns of demographic changes in the labour market, with an ageing workforce in developed countries and a growing youth workforce in developing countries.¹²⁵ In the first instance, there is the need to devise skills development strategies to ensure older workers upgrade their digital skills and remain in the labour market longer.
- 114.** Digital literacy efforts will need to be combined with broader government measures to ensure equal access for women and men to quality education and appropriate training. At the same time, education systems will need to shift their focus to competencies and a combination of manual, social and cognitive skills to facilitate the occupational and geographic mobility of workers,¹²⁶ particularly relevant in the financial sector.
- 115.** Skills gaps may be particularly evident across MSMEs operating in the financial sector, which may be more in need of skills development opportunities but less likely to be able to afford their own skilling provision. Partnerships between small enterprises and digital service providers, facilitated by innovation hubs, have proved useful in ensuring technology transfer.¹²⁷

3.3. Social protection and conditions of work

- 116.** The unprecedented changes driven by digitalization, globalization and demographic changes may have implications for existing inequalities or create new ones. Social protection systems and labour protection will need to be adapted to the pace and scope of these transformations.
- 117.** The ILO has developed a body of international labour standards that protect and seek to improve conditions of work. Moreover, the Centenary Declaration calls for Member States to ensure that people benefit from the transformations affecting the world of work, ensuring “universal access to comprehensive and sustainable social protection”, and strengthening labour protection institutions, including ensuring an adequate minimum wage, maximum limits on working time, and safety and health at work.

3.3.1. Social protection

- 118.** The changes in the organization of work in the financial services sector are partly driven by the emergence of fintech enterprises and online-based financial services. An ILO study highlighted how digital innovations in Asia are driving the changes in financial sector business models and attracting ICT specialists towards specific sectors, particularly financial services (for example, Indonesia).¹²⁸ These changes may create more flexibility for both workers and enterprises, however they may have important implications for the adequacy of social protection systems and for the benefits applicable to financial sector workers,

¹²⁵ ILO, *Skills policies and systems for a future workforce*, Global Commission on the Future of Work, Issue Brief No. 8, 2018.

¹²⁶ Ernst et al., *The economics of artificial intelligence*, 19.

¹²⁷ Antonio Crupi et al., “The digital transformation of SMEs – a new knowledge broker called the digital innovation hub”, *Journal of Knowledge Management* 24, No. 6 (2020): 1263–1288.

¹²⁸ ILO, *Skills shortages and labour migration*, 2019.

especially where social protection systems have been traditionally based on job status and years of contribution.¹²⁹

- 119.** The 2008 financial crisis – resulting in thousands of job losses in the financial sector¹³⁰ – highlighted the need for stronger synergies between unemployment protection and active labour market policies, consisting of a mix of measures to match jobseekers to jobs, upgrade their skills and adapt them to the more digitalized labour market, as well as for employment and wage subsidies. These measures would need to be adapted to the digital transformation of the sector, with a stronger link between social protection systems, skills development and employment creation strategies.

3.3.2. Changes in the organization of work

- 120.** Technological applications in the financial services sector contribute to, and accelerate, the changes in the way work is organized (for instance in the case of telework) and, in some instances, in the forms of employment arising from digitalization (such as increased use of on-demand work or of outsourced ICT workers). In both cases, there are interconnected effects on both conditions of work – working time, rest periods, benefits – and on occupational safety and health, including issues around work-life balance and data protection.

Teleworking and working-time arrangements

- 121.** Working-time arrangements have a direct impact on the day-to-day lives of workers as well as on the performance, productivity and competitiveness of enterprises. Transformations taking place in the world of work, facilitated by technological applications, are changing the way traditional time and space dimensions at work are understood.¹³¹ The proliferation of telework and ICT-based mobile work can help to reduce commuting time and associated stress, and – to a certain extent – improve work-life balance, but also result in an increase in work intensity,¹³² with longer and more arbitrary working hours and reduced rest periods.
- 122.** Such work arrangements have proved to be particularly useful during the COVID-19 pandemic, ensuring the continued provision of essential financial services (box 1). A 2020 pre-COVID-19 European study already identified financial services among the sectors with a high proportion of workers in teleworking arrangements (43 per cent), after information and communication (57 per cent), and professional and scientific activities (53 per cent).¹³³ Technicians and professionals in the sector represent the highest share of workers in these specific arrangements. A European survey conducted in 2020, during the pandemic, confirms that working from home is most prevalent in services sectors such as the financial services.¹³⁴

¹²⁹ European Commission and Fondazione G. Brodolini, *Access to social protection for all forms of employment: Assessing the options for a possible EU initiative*, 2018.

¹³⁰ ILO, *Impact of the Financial Crisis on Finance Sector Workers*, GDFFCW/2009/1, 2009, 14 ff.

¹³¹ ILO, *Ensuring decent working time for the future*, International Labour Conference, ILC.107/III(B), 2018.

¹³² Eurofound and the International Labour Office, *Working anytime, anywhere: The effects on the world of work*, 2017.

¹³³ Eurofound, *Telework and ICT-based mobile work: Flexible working in the digital age*, New forms of employment series, 2020, 9.

¹³⁴ Eurofound, *COVID-19: Implications for employment and working life*, COVID-19 series, 2021, 12.

- 123.** While during normal times teleworking could be associated with greater worker productivity and improved work–life balance, the COVID-19 pandemic has exposed existing gaps in conditions of work and issues around working time and the right to disconnect. New and ongoing forms of surveillance and monitoring of workers can add additional stress and anxiety to these special circumstances.¹³⁵
- 124.** The pandemic has led to an increased number of workers permanently working from home, or at least doing so on a regular basis.¹³⁶ In this context, equality of treatment and protection as established by the Home Work Convention, 1996 (No. 177), can be relevant. This includes protection against discrimination, access to social security and occupational safety and health measures.¹³⁷

► **Box 1. COVID-19 and working arrangements in the financial sector**

During the COVID-19 pandemic, the financial sector found itself between the need to manage the resulting economic crisis – through the digital payment of workers, providing loans, providing financial support to specific sectors, and relieving businesses,¹ especially SMEs, from payment obligations – and the need to manage its operations and workforce.

The crisis also accelerated the use of digital technologies in the financial sector, making a stronger case for easing the regulatory framework in order to manage the COVID-19 response, both in the services provided and in relation to labour conditions. To take an example, in many countries the lockdown facilitated digital payments to purchase entertainment, groceries or other products on online platforms.

As many workers in the financial services were considered essential, the measures taken by enterprises were aimed at ensuring the continuation of key financial operations by scaling up work-from-home arrangements, which required increased workforce flexibility. Many multinational banks are adopting long-lasting strategies to promote work from home, with some announcing policies, in consultation with trade unions, to increase flexibility for staff after the COVID 19 pandemic.

However, many of these frontline workers were not able to work from home, as not all tasks could be undertaken remotely and/or digitally. In some instances, the pandemic, which has put a heavy financial burden on banks, has strained country-level labour relations in the financial sector, accelerating workforce changes partly facilitated by the digitalization effect.

COVID-19 responses in the financial sector workplace reiterated the need for a more effective dialogue involving the social partners, to negotiate the changing organization of work while building skills and competences in the light of the increasing application of advanced technologies.

In this context, collective bargaining has proved essential in negotiating COVID-19 responses in the financial sector (for example, in Argentina, Italy and Pakistan²). Joint agreements at sectoral level have allowed the parties to set rules around employers' responsibilities towards workers, apply safety and health standards for workers and customers, and regulate relations between employees and management.

¹ Nadir França, "COVID-19: Financial technologies supporting the economic resilience of countries during the crisis", *Foraus Blog* (blog), 27 July 2020.

² UNI Global Union, "Covid-19: Pakistan Bank Insurance & Financial Employees Federation (PBIFE) secures better terms & protection for workers", 2020.

¹³⁵ Eurofound, *Employee monitoring and surveillance: The challenges of digitalisation*, 2020, 4, 26, 29 and 36.

¹³⁶ ILO, *Working from Home: Estimating the worldwide potential*, Policy Brief, 2020.

¹³⁷ ILO, *Promoting employment and decent work in a changing landscape*, International Labour Conference, ILC.109/III(B), 2020, para. 622.

- 125.** The increasingly digitalized financial sector has witnessed, in some cases, the use to outsourcing, subcontracting, on-call contracts and project-based jobs. As these forms of employment are more exposed to protection gaps in law or in practice,¹³⁸ it is important to strengthen the labour market institutions and ensure these new forms “leverage opportunities for social and economic progress, provide for decent work and are conducive to full, productive and freely chosen employment”.¹³⁹

3.3.3. Occupational safety and health

- 126.** The Occupational Safety and Health Convention, 1981 (No. 155), applies to all branches of economic activity and to all workers in these branches.¹⁴⁰ This standard is particularly relevant in the event of online activities or work in isolation, which is more and more common in the financial sector.
- 127.** Digitalization brings with it a range of occupational safety and health challenges and opportunities, which need to be considered when assessing health risks and regulating work arrangements in the increasingly digitalized financial services sector (box 2).

► Box 2. Occupational safety and health opportunities and challenges associated with digitalization

Opportunities	Challenges
<ul style="list-style-type: none"> • Reduction in psychosocial risks (improved work–life balance). • Removing people from hazardous environments (workers more able to leave repetitive and stressful tasks that can lead to physical disorders or mental health risks). • Health promotion and improved prevention measures (improved collection and sharing of accurate occupational safety and health data and real-time monitoring of risky behaviours to inform health promotion strategies). 	<ul style="list-style-type: none"> • Increase in some psychosocial risks (including job insecurity, cyberbullying, technostress). • Increased risks to security and privacy (collection and recording of personal information). • Increased risks linked to compliance (working in a location different to a specific workplace makes it more difficult for employers to comply with their occupational safety and health obligations; for the enforcement authority, namely labour inspection services, challenges in monitoring actual conditions of workplaces, because of: (a) due respect to inviolability of the home; and (b) increased number of scattered workplaces).

¹³⁸ ILO, *Conclusions of the Meeting of Experts on Non-Standard Forms of Employment*, GB.323/POL/3, 2015, 50, para. 2.

¹³⁹ ILO, *ILO Centenary Declaration*.

¹⁴⁰ ILO, *Occupational Safety and Health Convention, 1981 (No. 155)*. See also: *Protocol of 2002 to the Occupational Safety and Health Convention, 1981*; *Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187)*.

Opportunities	Challenges
	<ul style="list-style-type: none"> • Increased ergonomic risk (increased use of mobile devices and new forms of human-machine interaction). • Occupational safety and health management challenges (related to a more diverse and dispersed workforce, job replacement and job transformation).
Source: Adapted from ILO, <i>Safety and Health at the Heart of the Future of Work: Building on 100 years of experience</i> , 2019, 32.	

- 128.** Digital innovations represent an opportunity for greater safety at the workplace and for greater flexibility in the time and place of work (flexible working patterns, virtual workplaces, crowd working, co-working spaces). Real-time monitoring of risky behaviour can improve prevention and inform health promotion, and the use of technologies can also reduce exposure to hazardous environments and improve work-life balance.
- 129.** Fluidity in working time and space can also create a new range of health and safety risks (such as psychosocial risks, musculoskeletal problems and stress-related conditions). Some studies at the global level identified stress-related problems in the banking sector, often linked to adverse working conditions, changes in the work environment and job insecurity (as a result of restructuring for example), ¹⁴¹ as well as to restructuring processes. ¹⁴²
- 130.** In some instances, surveillance to monitor and appraise workers' performance can potentially lead to unrealistic targets, ¹⁴³ resulting in consequences for workers' physical and mental health and an increase in absenteeism, as discussed in a study conducted in Ireland in the financial sector. ¹⁴⁴

3.3.4. Violence and harassment at work

- 131.** The financial services sector is not immune from violence and harassment at work, including a number of situations involving physical and psychological violence, as well as third-party violence, ¹⁴⁵ as addressed in the Violence and Harassment Convention, 2019 (No. 190). ¹⁴⁶
- 132.** In Australia, a national survey conducted by the Australian Human Rights Commission reported a high prevalence of workplace sexual harassment in the financial and insurance sector (39 per cent), higher than the national rate (33 per cent). ¹⁴⁷ Young women working

¹⁴¹ Gabriele Giorgi et al., "Work-Related Stress in the Banking Sector: A Review of Incidence, Correlated Factors, and Major Consequences", *Frontiers in Psychology* 8, article 2166 (2017).

¹⁴² Eurofound, *ERM report 2018: Impact of restructuring on working conditions*, 2018, 22–25.

¹⁴³ Wolfgang Haider et al., "Shaping industrial relations in a digitalising services industry: regional report for Continental Europe", *ZSI – Centre for Social Innovation*, 2018.

¹⁴⁴ Michelle O'Sullivan et al., *Technology, Work & Skills: The Impact of Technology on Employees, Report 1, 2019* (Kemmy Business School, University of Limerick, 2019).

¹⁴⁵ ILO, *Violence and stress at work in financial services*, ILO Sectoral Activities Department Working Paper No. 210, 2003.

¹⁴⁶ ILO, *Violence and Harassment Convention, 2019 (No. 190)*.

¹⁴⁷ Australian Human Rights Commission, *Respect@Work: Sexual Harassment National Inquiry Report (2020)*, 2020.

in the finance sector have reported being discriminated against or harassed because of their gender.¹⁴⁸

- 133.** In general, technology can be used to monitor and detect abuses and violent behaviours in all sectors. Technology can support data collection on and analysis of workplace violence, and social media and mobile phones can be used to identify stereotypes and harassment.
- 134.** However, digital applications can also increase workers' vulnerability to violence at work.¹⁴⁹ Increased restructuring and competition as result of digitalization, the emergence of new and complex digital products and ways of delivering services, and technology-based surveillance may expose workers in the financial sector to psychological strain due to work related stress.¹⁵⁰

3.4. Fundamental principles and rights at work

- 135.** All workers in the financial sector are covered by international labour standards and fundamental principles and rights at work, which both enable and protect them.

3.4.1. Workers' and employers' representation and collective bargaining in the financial services sector

- 136.** Both workers and employers in the financial sector enjoy the rights enshrined in the Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87), and the Right to Organise and Collective Bargaining Convention, 1949 (No. 98).
- 137.** Data collected between 2003 and 2017 show that union density in the financial sector has steadily fallen across countries: a decrease of 49 per cent was reported in the United Kingdom, 68 per cent in Australia and 6 per cent in the United States (where it was already very low – 2.40 per cent in 2017).¹⁵¹
- 138.** While the financial services sector appears generally organized, the changes taking place in the sector, including the scope and pace of digitalization, may affect the capacity of its workers to unionize, as well as to bargain collectively. Furthermore, platform models, with workers less attached to a physical workplace, and more detached from union membership, make traditional organizing and collective bargaining more challenging.¹⁵²
- 139.** Recent studies identify unions' strategies to give a voice to workers in the digital economy¹⁵³ and to address the effect of digitalization on skills, internal mobility and redundancies. This is the case for the 2018 multi-employer agreement signed by the banking trade union Federația Sindicatelor din Asigurări și Bănci (FSAB) and the Employers' Association in the

¹⁴⁸ Laura Noonan, "Millennial women in finance still face harassment", *Financial Times*, 8 March 2018.

¹⁴⁹ Phoebe V. Moore, *The Threat of Physical and Psychosocial Violence and Harassment in Digitalized Work*, ILO, 2018.

¹⁵⁰ ILO, *Violence and stress at work in financial services*.

¹⁵¹ Jelle Visser, *ICTWSS Database*, version 6.0, June 2019, accessed 25 October 2020.

¹⁵² European Commission, *Employment and Social Developments in Europe: Annual Review 2018*, 165.

¹⁵³ Hannah Johnston and Chris Land-Kazlauskas, *Organizing on-demand: Representation, voice, and collective bargaining in the gig economy*, Conditions of Work and Employment Series No. 94, 2019.

Financial Service Sector (FinBan) in Romania, and for strategies designed to review social security funding systems to account for declining employment in the sector in Uruguay.¹⁵⁴

- 140. Some trade unions started to provide services to platform workers, collaborating with other organizations close to these workers, integrating these workers into their membership or helping them to organize.¹⁵⁵ For example, the Singapore FinTech Association is now affiliated to the National Trades Union Congress.¹⁵⁶
- 141. For some employers, digitalization makes the distinction between sectors less clear, including between the online and offline economy.¹⁵⁷ In the financial services sector, this may mean that enterprises cover a more diverse spectrum of activities, encompassing different sectors (from finance and ICT to retail), potentially creating a challenge in terms of the effective representation of specific industry interests.

3.4.2. Forced labour and the role of the financial sector

- 142. Over 40 million people are exploited through forced labour or through other forms of slavery. Forced labour and human trafficking account for around US\$150 billion of profits per year.¹⁵⁸ Furthermore, lack of access to safe and legitimate financial services – including credit – may further contribute to modern slavery and human trafficking.¹⁵⁹
- 143. Digital technologies, including digital payments, may help to reduce the cost of collecting money and receiving credit, and also facilitate due diligence monitoring of financial transactions.¹⁶⁰ Furthermore, the transition to the digital payment of wages could contribute to reducing the risk of wage withholding by employers (an indicator of forced labour).

3.4.3. Gender equality and non-discrimination in the financial services sector

- 144. In general, technologies and AI applications have the potential to reduce biases in race, nationality or gender in the provision of financial services, and also in the sector's job selection or promotion processes. However, regulations may be needed to ensure that managers and employees know when they are being used and how they really work, preventing algorithmic bias through unfair or corrupt data inputs. While employment related discrimination encompasses a number of grounds,¹⁶¹ this section focuses on gender-based discrimination.

¹⁵⁴ Ștefan Guga and Marcel Spatari, *Back to Bargaining in Banking: How digitalisation plays Romanian trade unions an upper hand*, Friedrich-Ebert-Stiftung, September 2020; and Lucia Pittaluga et al., *Banking on Training and Pensions: How a Uruguayan union negotiates automation in the financial sector*, Friedrich-Ebert-Stiftung, September 2020.

¹⁵⁵ European Commission, *Employment and Social Developments in Europe*, 166–167.

¹⁵⁶ Seow Bei Yi, "More PMEs from fintech, banking and financial services get union representation", *The Straits Times*, 11 January 2019.

¹⁵⁷ European Commission, *Employment and Social Developments in Europe*, 167–168.

¹⁵⁸ ILO, *Profits and Poverty: The Economics of Forced Labour*, 2014, 13.

¹⁵⁹ United Nations University Centre for Policy Research, *Unlocking Potential: A Blueprint for Mobilizing Finance Against Slavery and Trafficking*, 2019, 2.

¹⁶⁰ United Nations University Centre for Policy Research, *Unlocking Potential*.

¹⁶¹ ILO, *Discrimination (Employment and Occupation) Convention, 1958 (No. 111)*.

- 145.** Digitalization can support women's access to financial sector positions, by facilitating flexible work and a better work-life balance. However, it may not be enough in the presence of systemic gender-based discrimination in the labour market. For example, in North America, women are under-represented in the financial sector's upper-level occupations, where they account for only 19 per cent of the positions, with an even lower percentage of women of colour.¹⁶² According to a recent ILO survey of 726 enterprises in financial and insurance services: on average, women represented 30 per cent of senior positions and 29 per cent of executive management positions; only around 18 per cent of enterprises had a female chief executive officer; and women represented 22 per cent of board members.¹⁶³
- 146.** Digitalization affects gender equality and workers' access to equal opportunities in different ways. In general, women risk not benefiting from digitalization opportunities in jobs benefiting from digitalization – such as in management, computer, STEM-based (science, technology, engineering and mathematics) occupations and entrepreneurship – where women are still under-represented.¹⁶⁴
- 147.** Even when women in ICT occupations are involved in lifelong learning, they may be left behind because of conflicts between training needs and family responsibilities.¹⁶⁵ In the absence of investment in people's capabilities, enabling them to acquire skills, reskill and upskill, and if female employment in technology is not promoted, the gender gaps in leadership and upper-level positions may persist.
- 148.** Overcoming these barriers would require governments to put in place measures to combine the above-mentioned promotion of women in technology and STEM-based skills with policies to promote equal opportunities, equal participation, equal treatment, a better distribution of family responsibilities and better work-life balance. This may also include investing in social infrastructure (such as day-care facilities) so that women can return to the labour market.

3.5. Social dialogue

- 149.** As in other sectors, social dialogue in the financial sector can be a problem-solving mechanism and a means to protect labour rights, facilitate wage determination and improve working conditions, in a context of profound changes due to economic downturns and digitalization.
- 150.** Social dialogue and industrial relations regulating the working conditions, employment terms and consequences of digital transformation for the enterprises and workers in the financial services sector vary between countries and across regions. They can take place at the enterprise, country and cross-border levels.

¹⁶² McKinsey & Company, *Closing the gap: Leadership perspectives on promoting women in financial services*, 2018.

¹⁶³ ILO, *Women in business and management: The business case for change – Sectorial snapshots*, second edition, 2020, 13.

¹⁶⁴ Alina Sorgner et al., *The Effects of Digitalization on the Gender Equality in the G20 economies*, Women20 Study, 2017.

¹⁶⁵ European Institute for Gender Equality (EIGE), *Women and men in ICT: a chance for better work-life balance – Research note*, 2018, 29.

3.5.1. Social dialogue in the context of digitalization in the financial services sector

- 151.** Social dialogue has been used in the past to respond, among other things, to broader changes in the financial services sector (such as mergers, post-crisis restructuring and outsourcing). However, digitalization is putting into question the organization, the location and the definition of work,¹⁶⁶ with possible challenges for the effective application of social dialogue in all its forms. This may also apply to the financial services sector, which is undergoing a fast-paced digitalization of its business models and of its workforce (such as financial services provided through digital platforms or fintech or insurtech companies not attached to physical banks).
- 152.** The extension of social dialogue mechanisms to workers in emerging forms of employment will depend on policy decisions of countries or regions to adapt regulations in order to extend the relevant rights to those workers.¹⁶⁷

The involvement of social partners in dialogue concerning digitalization

- 153.** At country level, initiatives include balancing work well-being, the right to disconnect, productivity and competitiveness in the sector, and discussing changes through various forms of social dialogue.¹⁶⁸ This is the case for the binding agreement signed in October 2020 in Spain between the employers' organization (AEB) and the banking sector's trade union federations (CCOO, FINE and UGT), introducing the right to disconnect as well as the right not to reply to telephone calls, emails and messages during permitted rest times or holiday periods. The agreement defines a broad framework for recording working time and digital disconnection, but also makes provision for workers to receive – under certain conditions – IT and ergonomic equipment.¹⁶⁹
- 154.** Similar developments are taking place in Italy, with the agreement signed in December 2019 between the Associazione Bancaria Italiana (ABI) (Italian Banking Association) and the Autonomous Federation of Italian Bankers (FABI), FIRST-CISL, FISAC-CGIL, UILCA and UNISIN FALCRI-SILCEA-SINFUB trade unions, as well as a protocol agreed in 2020.¹⁷⁰ Furthermore, the sector is in the process of setting up a bilateral and joint national committee to manage the digital transformation, with the aim of analysing the impact of new forms of technology and digitalization on the future of the banking sector and of defining new skills profiles.¹⁷¹ In the insurance sector, following the increased use of remote working during the COVID-19 pandemic, a new protocol was signed between the unions and the employers' organization representing insurance companies, setting out guidelines on work-life balance, the right to disconnect, compensation for costs related to remote work, health and safety measures, and access to training.¹⁷²

¹⁶⁶ World Economic Forum, *The Future of Jobs Report 2018*.

¹⁶⁷ OECD, *Negotiating Our Way Up: Collective Bargaining in a Changing World of Work*, 2019.

¹⁶⁸ Eckhard Voss and Hannah Riede, *Digitalisation and workers participation: What trade unions, company level workers and online platform workers in Europe think*, European Trade Union Confederation, 2018.

¹⁶⁹ UNI Global Union, "Spanish unions win major gains for finance workers on teleworking and right to disconnect", 2020.

¹⁷⁰ FISAC-CIGL, "Protocollo condiviso del 28 aprile 2020, e successive integrazioni, recante 'Misure di prevenzione, contrasto e contenimento della diffusione del virus Covid-19 per garantire l'erogazione dei servizi del settore bancario'", 2020.

¹⁷¹ FIRST-CISL, "Accordo di rinnovo del CCNL 31 Marzo 2015 per i quadri direttivi e per il personale delle aree professionali dipendenti dalle imprese creditizie, finanziarie e strumentali", 2019.

¹⁷² UNI Global Union, "Italy's insurance sector unions sign landmark agreement on remote work", 2021.

- 155.** In Finland, a joint initiative by the social partners has been put in place in the financial sector, whereby cooperation between workers' and employers' organizations aims at adapting the work environment to the challenges brought about by digitalization.¹⁷³
- 156.** At the regional and international levels, global framework agreements have been used to regulate or address different employment terms and working conditions in the sector.¹⁷⁴ As digitalization has affected the content of country-level social dialogue,¹⁷⁵ some of these agreements have covered issues of digital transformation (box 3) and their impact on labour rights across the different branches and workforces.

► **Box 3. Global framework agreement between UNI Global Union and Crédit Agricole S.A. to deal with the effects of digitalization**

A global framework agreement signed between UNI Global Union and Crédit Agricole in July 2019 includes not only basic commitments around parenting and working conditions, but also a groundbreaking section on digitalization, focusing on training efforts and the importance of employability. In particular, the agreement specifies: "With regard to its employees, the Crédit Agricole S.A. group is committed to using the possibilities offered by new technologies to improve working conditions, in particular by eliminating repetitive tasks and/or those with low added value and by striving to strike a better balance between work and personal life." It is also "committed to mitigating the potential negative impacts of these new technologies, in particular through dialogue with trade union and/or employee representatives". The agreement also addresses the risks linked to the protection of workers' personal data, underlining the principles of: (1) lawfulness, fairness and transparency of processing; (2) limitation of purposes; (3) data minimization; (4) accuracy; (5) limitation of the data storage period; and (6) security. Crédit Agricole also committed to ensure the protection of the following rights: right to access workers' own data, rectification, erasing data, restriction of processing, objection, portability and the right to define instructions in the event of death. According to the agreement, geolocation devices can only be introduced to "achieve a legitimate goal" and if they do not result "in constant monitoring of employees".

Source: UNI Global Union, "Crédit Agricole committed to trade union rights and freedoms in new international agreement signed today with UNI Global", 31 July 2019.

- 157.** Furthermore, at the European level, digitalization and ICT-related matters have been the object of non-binding regional joint declarations and statements through the European social dialogue committees for the banking sector and the insurance sector (table 9).

¹⁷³ Finance Finland, "Cultivating productivity and well-being", Work in the Financial Sector.

¹⁷⁴ European Commission, [Database on transnational company agreements](#), Employment, Social Affairs & Inclusion, accessed 24 February 2020.

¹⁷⁵ Gregor Gall, *Employment Relations in Financial Services: An Exploration of the Employee Experience After the Financial Crash* (London: Palgrave Macmillan, 2017).

► **Table 9. European joint declarations and statements concerning digitalization and use of technologies in the banking and the insurance sectors**

Banking		Insurance	
Title	Date	Title	Date
Joint declaration on remote work between UniCredit and the European Works Council	2020	Joint declaration on Artificial Intelligence (AI), committing to a responsible and ethical roll-out of AI across the insurance sector	2021
Joint declaration on the impact of digitalization on employment by the European social partners in the banking sector	2018	Follow-up to the joint declaration on the social effects of digitalization by the European social partners in the insurance sector	2019
Joint declaration on telework by the European social partners in the banking sector	2017	Joint declaration on the social effects of digitalization by the European social partners in the insurance sector	2016
IT employability in the European banking sector	2001	Joint declaration on telework by the European social partners in the insurance sector	2015

Source: Adapted from Eurofound, *Representativeness of the European social partner organisations: Banking sector*, 2019, and Eurofound, *Representativeness of the European social partner organisations: Insurance sector*, 2019.

- 158.** More broadly, in June 2020, a framework agreement was signed by the European cross sectoral social partners on digitalization, addressing: digital skills and securing employment, regulation around connecting and disconnecting, guaranteeing the human in control principle with respect to AI, and respect for human dignity and surveillance.¹⁷⁶

3.5.2. Social dialogue to better manage the impacts of technology-related changes on businesses and workers: Key topics

- 159.** Digital changes in the financial services sector may hinder or promote, as the case may be, better working conditions for workers, the protection of both workers and employers from data security risks, and responsible and sustainable quality financial offerings.
- 160.** Cooperation and negotiation through social dialogue at all levels, according to context and circumstances, can help to establish an enabling environment for a responsible use of technologies in the financial services sector. In particular, social dialogue in all its forms can help to identify strategies to tackle the impact of technologies on jobs, skills mismatches and skills needs,¹⁷⁷ to address work-life balance through appropriate working arrangements, and to support public policies to facilitate the transition towards a more digitalized work environment,¹⁷⁸ and more generally to promote better working conditions.
- 161.** A range of topics can shape social dialogue around digitalization in specific sectors (table 10). While these topics are not new, the extent and scope of the changes brought about by digital transformation may require a renewed effort in the negotiation and

¹⁷⁶ BusinessEurope, SMEUnited, CEEP and the ETUC, *European Social Partners Autonomous Framework Agreement on Digitalisation*, 2020.

¹⁷⁷ European Commission, *Employment and Social Developments in Europe*.

¹⁷⁸ OECD, *Negotiating Our Way Up*.

consultation process, looking at specific needs in the digitalized financial service landscape as well as assessing the different opportunities and risks brought about by this transformation.

► **Table 10. Key topics that could be considered in renewed social dialogue processes**

Changes in business strategy as a result of technologies
<ul style="list-style-type: none"> • introduction of new digital technologies, such as the use of online banking, fully digitalized financial services, growing automation of tasks, AI applications in finance, digital devices; • change in the business model/strategy of the financial services sector due to digitalization; • building an enabling environment for sustainable enterprise development in a digital financial services sector; • outsourcing and offshoring of work/tasks to online platforms.
Changes in work organization and work processes linked to the application of technologies
<ul style="list-style-type: none"> • increased flexibility of work: opportunities (including promotion of gender equality) and challenges; • work-life balance or working time, issues related to digitalization – balancing increasing client expectations in the financial sector with better work-life balance; • impact of telework and ICT mobile work on hours of work and increasing grey areas between working time and leisure time; • right to disconnect; • anticipation of skills needs; • change in occupational profiles and qualifications; • further training and acquisition of new skills through digitalization of production or service.
Data protection
<ul style="list-style-type: none"> • introduction of technologies to monitor performance of financial sector workers and managers; • protection of personal data, such as that gathered in the context of ICT work and automation processes; • emerging health and safety issues: increased stress, psychosocial risks, for example, related to ICT-based mobile work, digital devices and tools.
Representation of new types of work arrangements in the digital economy
<ul style="list-style-type: none"> • competences of relevant workers' organizations to address and represent the interests of "peripheral" workers, for example, freelancers, dependent self-employed and subcontracted workers; • extension of collective bargaining to these categories of workers; • remuneration and wages in the new digital economy.

Source: Adapted from Eckhard Voss and Hannah Riede, *Digitalisation and workers participation: What trade unions, company level workers and online platform workers in Europe think*, European Trade Union Confederation, 2018.

► 4. Regulatory issues of the digitalized financial services sector

- 162.** The application of technologies to the financial sector has created a complex landscape of new and emerging actors using digital tools to provide financial services. Regulatory frameworks have tried, and are still trying, to regulate both the changes in the technology-led traditional financial system as well as in the new fintech arena.
- 163.** While the current debate on the policy frameworks regulating the financial sector tends to focus on measures to ensure financial stability or reduce cybersecurity risks, the new digitalized financial business models ¹⁷⁹ may also require consideration for issues around privacy and personal data protection, as well as adequate protection for all workers. In this context, international labour standards can serve as a reference for the framework to address such issues raised by the new digital landscape, including fair terms of agreement, fair termination, workers' data and privacy.

4.1. Existing regulatory frameworks addressing digitalization in the financial sector

- 164.** After the 2008 financial crisis, countries agreed on a set of rules, the Basel III framework, and at the European level, the European Market Infrastructure Regulation, among others, to address gaps in the pre-crisis regulatory framework and to build a more resilient banking system to support the real economy. ¹⁸⁰
- 165.** The financial reforms were based on a specific view of the financial sector, modelled on a structure and on a service provision that may not fully apply to the more digitalized model. The regulations focus on minimizing systemic risks of the traditional “too big to fail” financial institutions, while overlooking the specific vulnerabilities inherent in the decentralized nature of fintech enterprises, their new ways of working and of raising capital, and the new forms of currency they can create (table 11). ¹⁸¹ Furthermore, as bigtech enterprises penetrate the financial markets, issues of their inclusion in the current financial regulations, ¹⁸² as well as compliance with labour standards, have been raised.

¹⁷⁹ ILO, *World Employment and Social Outlook 2021*.

¹⁸⁰ BIS, *High-level summary of Basel III reforms*, Basel Committee on Banking Supervision, 2017.

¹⁸¹ Magnuson, “Regulating Fintech”, 1168–1226.

¹⁸² Dirk A. Zetzsche et al., “From FinTech to TechFin: The Regulatory Challenges of Data-Driven Finance”, European Banking Institute Working Paper Series 2017 – No. 6.

► Table 11. Fintech regulatory gaps

Systemic risk	Current regulatory framework applicable to big financial institutions	Fintech risks	Challenges posed by fintech for the regulators
<ul style="list-style-type: none"> • vulnerability to external shocks; • size of the market; • existence of path of propagation of shock from one institution to another (because of interconnectedness); • asymmetry of information in the financial market. 	<ul style="list-style-type: none"> • prohibiting concentration of assets through mergers and consolidation above a certain threshold; • heightened regulation imposing behavioural and disclosure-based obligations; • prohibiting bailouts; • whistleblower protection for disclosure of wrongdoing. 	<ul style="list-style-type: none"> • proliferation of small and disaggregated actors susceptible to shocks and hacking; • automated decision-making based on algorithms, potentially leading to instability of the market; • more opaque financial operations, difficult to regulate and monitor; • more prone to take risks because less exposed to, or concerned with, reputational constraints. 	<ul style="list-style-type: none"> • difficulty with identifying who to regulate (for example, the data miners, the creators, the users); • difficulties with monitoring actors' behaviours because of different country jurisdictions not being subject to same disclosure regimes, and difficulties with understanding how algorithms work; • fragmentation of the financial landscape obscuring risks and responsibilities.

Source: Adapted from William Magnuson, "Regulating Fintech", *Vanderbilt Law Review* 71, No. 4, 2018.

166. The Centenary Declaration calls for the promotion of:

sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all through:

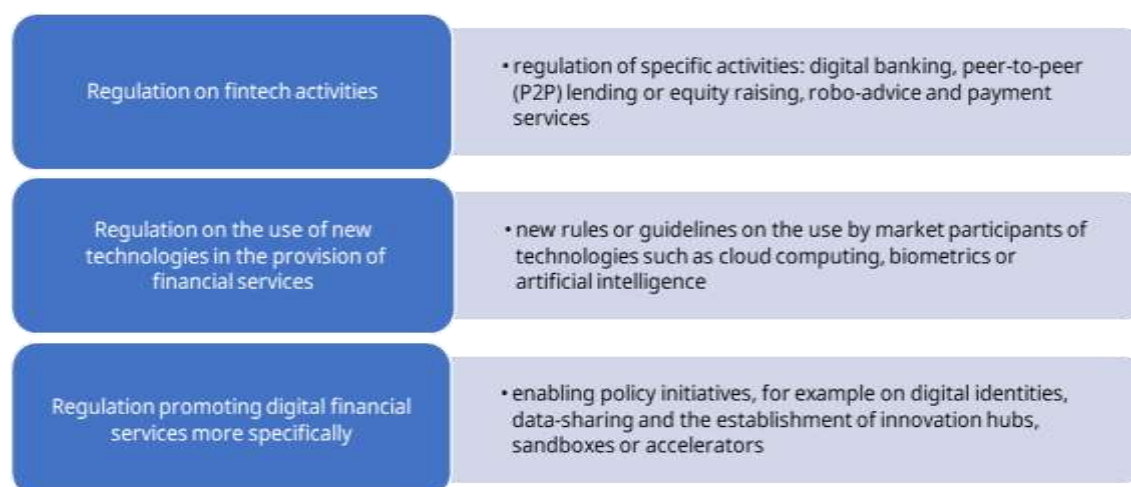
...

(iv) policies and incentives that promote sustainable and inclusive economic growth ... and

(v) policies and measures that ensure appropriate privacy and personal data protection, and respond to challenges and opportunities in the world of work relating to the digital transformation of work, including platform work.

The debate is ongoing on the need to develop tailored regulation that is proportionate and balances issues of stability of the system and of enabling innovation. The content of such regulation encompasses specific activities by fintech or insurtech enterprises, the use of technologies by all financial service providers, and the promotion of digital services (such as data sharing) (figure 13).¹⁸³ Countries have applied a number of policy provisions in one or all of these areas.

¹⁸³ Fernando Restoy, "Regulating fintech: What is going on, and where are the challenges?" (BIS, 2019).

► **Figure 13. Regulatory areas in the digital financial sector**

Source: Fernando Restoy, "Regulating fintech: What is going on, and where are the challenges?" (BIS, 2019).

4.2. Data protection and surveillance developments and issues in a digitalized financial sector

- 167.** The debate around data protection and privacy is relevant for the clients of financial institutions (both traditional institutions integrating digital tools and fintech), and for the workers and employers of the new digital financial ecosystem.
- 168.** Digitalization has made transactions easier, but the use and processing of data increasingly exposes the financial system to hacking or cybersecurity risks, as well as other risks, which may jeopardize both customer and employee data. This could be further exacerbated by new business models (such as fintech and insurtech) resorting to IT platforms.

Regulatory environment on data protection

- 169.** Globally, there are a variety of standards regulating data protection and privacy. Consolidation of regulation by governments and other stakeholders is particularly important. However, this may be challenging, considering the various national systems and ways in which different national jurisdictions are trying to regulate protection and responsibility through a range of laws and regulations.
- 170.** Some regions and countries have started developing regulatory frameworks on data protection to ensure both customer and worker protection. For example, the European Union General Data Protection Regulation entered into force in May 2018 and provides a framework to adapt data protection to the digital age. It concerns enterprises operating in the European Union market (including non-European Union bigtech enterprises) and covers data processing in connection with a professional or commercial activity, as well as financial activities.¹⁸⁴

¹⁸⁴ European Commission, [Regulation \(EU\) 2016/679](#) of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), entered into application 25 May 2018.

- 171.** The scope of these regulations includes not only customer data, but also employee data, and is applicable to the financial sector.¹⁸⁵ Given that they highlight a number of duties and responsibilities for managers as well as for the employees, data privacy training and awareness-raising programmes are important measures to ensure compliance.¹⁸⁶
- 172.** Furthermore, emerging countries that are moving faster towards fintech business models may have less-prepared regulatory systems and therefore may need to develop an appropriate regulatory environment that protects data but does not hinder private investment, entrepreneurship, innovation and business development.

Technology-enhanced monitoring of workers and its regulation

- 173.** Digitalization and the application of AI to monitor workers may be based on genuine business needs, including helping businesses to comply with the law, mitigating health and safety risks, including stress, and assisting in employee selection processes.¹⁸⁷ The monitoring of workers, as well as managers, can help in the recording of their activities to demonstrate respect for due diligence. It can also prevent misconduct or online harassment. Furthermore, data-driven decisions can help remove human subjectivity by using more objective metrics.¹⁸⁸
- 174.** While the use of technologies to monitor working activities is not necessarily negative, appropriate regulation may be needed to make sure that the rights of individuals (managers and workers), their privacy and non-discrimination are embedded in the algorithm design to ensure the appropriate use of surveillance tools.
- 175.** The increasing use of AI and the pervasive use of IT have pushed surveillance to another level, owing to the amount of data collected through work. The increasing use of the algorithm to manage people encompasses both traditional financial institutions, which are scaling up the use of new technologies, and start-up financial enterprises providing services through technology-enabled mobile and online platforms (fintech). New ways of collecting and processing data entail some new risks for workers, calling for the need to develop data protection provisions that specifically address the use of workers' personal data.¹⁸⁹
- 176.** Electronic performance monitoring is also becoming common in white-collar occupations and used in forms of employment usually associated with greater worker flexibility such as teleworking and smart work arrangements.¹⁹⁰ Moreover, with more people working from home, technologies could be used to monitor teleworking, which would have an impact on privacy and work-life balance.
- 177.** An ILO code of practice drawn up on the protection of workers' personal data (1997) is relevant to this issue, and sets out measures to address new risks arising from changes in technologies and the need for employers to review personal data processing measures and

¹⁸⁵ PwC, *The EU General Data Protection Regulation (GDPR) in the banking industry*, 2017.

¹⁸⁶ PwC, *The EU GDPR in the banking industry*.

¹⁸⁷ ILO, *Protection of workers' personal data*, An ILO code of practice, 1997.

¹⁸⁸ Matthew T. Bodie et al., "The Law and Policy of People Analytics", *University of Colorado Law Review*, Saint Louis University, Legal Studies Research Paper No. 2016-6.

¹⁸⁹ ILO, *Protection of workers' personal data*.

¹⁹⁰ ILO, *Protection of workers' personal data*, 12.

to consult workers' representatives when introducing new automation systems for monitoring workers.¹⁹¹

178. In the context of the current technological transformation, global initiatives have tried to fill the gap on workers' rights vis-à-vis data protection and to ensure a more responsible use of AI. The OECD Principles on AI are an example of such efforts.¹⁹²
179. UNI Global Union has also established a set of principles for workers' data protection,¹⁹³ emphasizing the right of workers to know the type of data used to inform management decisions, how the data is stored and their use. These principles call for the implementation of workers' data rights and protection through company and/or sector collective agreements. Similar principles have been developed to apply such precautions and protective measures to the use of AI in the work environment.¹⁹⁴
180. At the European level, the European Union has adopted guidelines on data protection for financial services regulation,¹⁹⁵ which aim to clarify specific data protection rights. Some of these encompass surveillance, recordkeeping and reporting, as well as the processing of personal information. Specific guidelines are provided on the surveillance of employees and the use of employee information. Beyond non-binding guidelines, labour legislation, based on international labour standards, can further regulate on the control and discipline of workers, their physical and mental health, issues of discrimination, working time and worker privacy.¹⁹⁶
181. The above-mentioned European Union General Data Protection Regulation can provide a framework to update current labour regulations. In fact, they provide that countries should adopt "specific rules to ensure the protection of the rights and freedoms in respect of the processing of employees' personal data in the employment context" through laws or collective agreements.¹⁹⁷ The right to collective bargaining is particularly important in this context, as it would ensure that key provisions on workers' data protection are collectively negotiated.¹⁹⁸
182. In the context of privacy and data protection, redress measures and the reporting of data breaches and wrongdoing are particularly important. Technologies and the use of AI can help the sector in identifying and addressing such breaches. The financial sector has already been at the forefront of policy and legal reforms to address these issues.
183. However, the protection of employees or managers reporting such breaches may be particularly challenging in a digital work environment where it is not clear who is really accountable and reporting mechanisms are limited to persons in employment-based relationships. This may be the case in fintech enterprises operating through digital platforms and through highly decentralized business models.¹⁹⁹

¹⁹¹ ILO, *Protection of workers' personal data*.

¹⁹² OECD, "[Principles on AI](#)", 2019.

¹⁹³ UNI Global Union, [Top 10 Principles for workers' data privacy and protection](#).

¹⁹⁴ UNI Global Union, [Top 10 Principles for ethical artificial intelligence](#).

¹⁹⁵ , European Data Protection Supervisor, [Guidelines on data protection in EU financial services regulation](#), 2014.

¹⁹⁶ Valero De Stefano, "[Negotiating the Algorithm: Automation, Artificial Intelligence and Labour Protection](#)", *Comparative Labor Law & Policy Journal* 41, No. 1 (2019).

¹⁹⁷ European Commission, Regulation (EU) 2016/679, Article 88.

¹⁹⁸ De Stefano, "[Negotiating the Algorithm](#)".

¹⁹⁹ Magnuson, "[Regulating FinTech](#)", 1199.

4.3. The role of technologies in fostering responsible business conduct in the financial sector

- 184.** Notwithstanding the emergence of lean and decentralized business models within the financial sector, through fintech enterprises, big financial institutions continue to hold a large share of the market. The ILO *Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy* (revised 2017) sets out principles on inclusive, responsible and sustainable workplace practices.²⁰⁰
- 185.** Furthermore, specific OECD due diligence guidelines have been adopted for the financial sector to prevent and address negative impacts of investments²⁰¹ or of financial activities linked to corporate lending and underwriting transactions.²⁰²
- 186.** Technologies have added a new dimension to the complexity of monitoring responsible business conduct for all sectors, and for the financial sector in particular. The application of technologies can support financial institutions in acting responsibly (for instance, through blockchain technology or through AI to monitor risks). However, robo-advisers and other applications cannot be seen as the only solution to unsafe sales. The risk is to overly rely on algorithms to track irresponsible practices; these actions may need to be balanced with individual responsibility.
- 187.** Some progress has been made in adapting responsible business conduct to the emergence of digitalization.²⁰³ However, at the moment there is no tailored guidance applicable to the financial sector and, specifically, to the fintech enterprises or non-financial actors entering the perimeter of financial services.
- 188.** Ultimately, the digital transformation of the financial sector poses challenges for the applicability of existing regulations to the new digital financial environment. The engagement of employers' and workers' organizations in designing and implementing such regulations may be a first step in better addressing emerging issues around labour and data protection.

²⁰⁰ ILO, *Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy*, fifth edition, 2017.

²⁰¹ OECD, *Responsible business conduct for institutional investors: Key considerations for due diligence under the OECD Guidelines for Multinational Enterprises*, 2017.

²⁰² OECD, *Due Diligence for Responsible Corporate Lending and Securities Underwriting: Key considerations for banks implementing the OECD Guidelines for Multinational Enterprises*, 2019.

²⁰³ OECD, *Artificial Intelligence and responsible business conduct*, 2019.