

IATF Technical Meeting on ‘*The impact of new technologies on labour markets and the jobs of the future*’, held on 3 October 2017

Summary

Overview

The technical meeting of the Task Force on ‘The impact of new technologies on labour markets and the jobs of the future’ was held in response to the call by Member States, in the outcome of the 2017 FfD Forum, for the Inter-agency Task Force ‘to further examine the transformative and disruptive potential of new technologies on our labour markets and on the jobs of the future’.

The meeting served to (i) share Task Force members’ perspectives and ongoing work on this issue, and (ii) to discuss potential focus areas, key issues, messages and recommendations that would add value to the discussion in the context of the Financing for Development process, and that could be included in the 2018 Task Force report.

15 member agencies of the Task Force participated in the meeting. Experts from the ILO, UNCTAD, the World Bank, OECD, and DESA Divisions for Sustainable Development and Policy Analysis and Development presented their agencies’ analytical work in this area. In the ensuing interactive exchanges, which were moderated by FfDO staff, they discussed implications with other Task Force members and an expert from the Centre for Global Development.

Issues addressed included the impact of new technologies on labour markets, the quality and quantity of jobs, and on development prospects and strategies for developing countries, which have in past often relied on low-skill labour intensive manufacturing exports as development engines. The meeting also discussed the interactions of technological change with other megatrends such as climate change, demographic changes and ageing societies, and globalization more broadly.

Several findings emerged from the meeting – the importance of interpreting technological change as only one among many other factors relevant for current developments in labour markets; the need to strongly consider the interplay between technological change and macroeconomic developments, which are ultimately driving aggregate demand and thus the potential to create new jobs and new industries; and the distributive impacts of technological change, which are already visible and which may be of greater concern than aggregate impacts on labour markets. In this regard, the issue of technology diffusion – both within countries and firms and between countries – was identified as a critical issue that links to the Financing for Development agenda and should be taken up by the Task Force.

Detailed Summary

Tour-de-table

The meeting started with a tour-de-table of Task Force members. Participants introduced their ongoing work on new technologies, labour markets and jobs, and reflected on how this work could add value in the context of the Financing for Development process. The ILO, UNCTAD, UN DESA Divisions for Sustainable Development and Policy Analysis and Development, UNIDO, OHRLLS, the World Bank, ITU and the OECD laid out current and upcoming analytical work, programmes and projects, and provided updates on relevant intergovernmental processes.

Major initiatives within Task Force member agencies included the ILO's [Future of Work Centenary Initiative](#) and the ILO and ITU [digital skills for decent jobs for youth](#) campaign, the [Commission for Science and Technology](#)'s inter-sessional panel in November on digital competencies, UNCTAD's 2017 Trade and Development report and its chapter 3 on [robots, industrialization and inclusive growth](#), the work of the [Intergovernmental Group of Experts on E-commerce and the digital economy](#), the [Technology Facilitation Mechanism](#) to support implementation of the SDGs, the [Global Manufacturing and Industrialization Summit](#) co-organized by UNIDO, the [Technology Bank](#) for the LDCs, a [DESA study](#) on the impact of the technological revolution on labour markets and income distribution, the World Bank's 2016 World Development report on [Digital Dividends](#), and the OECD's 2016 [Science and Technology Outlook](#).

In subsequent substantive sessions, the meeting discussed key technological developments, their potential impacts on labour markets and on development prospects in developing countries, and policy solutions and recommendations. Respective sessions were led by presentations from the OECD and DESA DPAD, the ILO and UNCTAD, the World Bank, DESA DSD and an expert from the Center for Global Development, and followed by interactive discussions. These discussions are summarized below by major themes.¹

Key technological developments

Participants identified a range of key recent technological developments and discussed their interaction with other megatrends to impact development prospects and labour markets. Several potentially disruptive technologies were discussed. In the realm of digital technologies, they included advances in robotics, which further increase robots' flexibility and autonomy and could have labour displacing potential for tasks that can be clearly defined and that follow pre-defined patterns; artificial intelligence and machine learning, which can further expand the scope of automation; the internet of things and big data, which can improve production processes and supply chain management; and blockchain, which allows developing smart contracts. These rapid developments in digital technology are paralleled by progress in the areas of advanced materials, biotechnologies, and environment and energy technologies.

¹ To avoid repetition, the summary does not strictly follow the order of presentations and interventions.

To understand and accurately assess the current and potential future impact of these technological developments, participants repeatedly emphasized that they needed to be situated within broader megatrends that influence development prospects. Technological developments were not independent of these trends, but instead interact with them to shape economies and societies. These trends include demographic change and population ageing, environmental degradation and climate change, and globalization and changing global investment and financing patterns. Ageing societies and the related rising costs in health care, higher dependency ratios and slower economic growth were highlighted by several participants as particularly relevant for labour market developments.

The impact of technologies on labour markets

The meeting identified different areas in which technological changes impact labour markets. First, a distinction was made between short-term impacts and long-run developments. In the long-run, technological progress would be expected to have a positive effect on both productivity growth and wages. However, this expectation needs to be reconciled with the current slowdown in productivity growth. One explanation discussed was the slow rate of diffusion of new technologies throughout the economy, with only a minority of firms currently making use of new digital technologies.

Second, technological change will lead to both job destruction and job creation, and will thus create winners and losers in labour markets. In this context, it is important to not only focus on process innovation, which is often associated with labor-saving technologies, but also on product innovation, which opens new industries and new employment opportunities. However, creation of new jobs depends on favorable macroeconomic conditions and sufficient demand, which may be undermined by increasing inequality. Even under favorable circumstances, new jobs may not be available immediately and may require different skills, leading to skills mismatches, involuntary part-time employment or overqualified workers.

Third, while the aggregate impact on employment levels is open to debate, there is clear evidence for job polarization in labour markets of many developed countries in recent years. Routine tasks in manufacturing and in offices – typically in the middle of the wage scale – have been automated, while demand has increased for non-routine tasks at both the high end and low end of the skills spectrum. As a result, highly skilled workers have benefitted and wage inequality has increased. This trend is mirrored also in regional differences, with a growing urban-rural divide.

Fourth, the previously noted relatively slow rate of diffusion may have protected some workers from the impacts of technological change so far, partly by providing sufficient time for economies to adjust, and for individuals to acquire relevant skills. If technological change and its diffusion were to rapidly accelerate going forward – predicted by some analysts but doubted by others – the need for workers to upgrade their skills would become more urgent. It could also lead to a further acceleration of changes in the functional income distribution, with an ever-larger share of GDP accruing to the owners of machines, algorithms and technologies. However, such scenarios remain largely speculative at this point.

Impacts on developing countries

The interplay of technological changes and other megatrends plays out differently in developing countries. So far, the development and diffusion of the technological advances discussed above has largely been concentrated in developed countries and some large emerging economies. At the same time, there are concerns that these developments could make industrialization as a development strategy less feasible.

Developing countries are exposed to several adverse trends – high vulnerability to climate change, the end of the demographic dividend and fast population ageing without sufficient social protection, and a return to more protectionist policies in response to discontents with globalization in some developed countries. These trends interact with the rise of new technologies and their impact on production processes and the relative efficiencies of countries in producing manufacturing goods, and thus their comparative advantage and globalization patterns.

Manufacturing has unique characteristics that have historically made it critical for development. In many developing countries, the manufacturing sector absorbed large numbers of unskilled workers into higher productivity activities, and into activities that could over time reach the global productivity frontier. The production of tradable goods allowed for exporting these goods into a growing world economy, facilitating economies of scale and technology diffusion.

The above-mentioned trends, particularly a less dynamic global economy, have made this development strategy more challenging. Automation and the fast-growing deployment of industrial robots could further exacerbate this situation by reducing the importance of low labour costs. Meeting participants agreed however that so far, most developing countries do not seem to be overly threatened by automation, due to the very uneven spread of such technologies across countries and across industries.

A pertinent example are industrial robots. Their use remains very concentrated in a few countries – the United States, Japan and Germany, China and the Republic of Korea – and in few sectors, such as automotive, computer and electronic equipment and electrical equipment, appliances and components. Notably absent are the low-skill labour intensive sectors that traditionally formed the initial stage of industrialization, such as textiles. In these sectors, automation may be technically feasible, but is not economically profitable.

At the same time, moving up the value chain and upgrading toward more skill-intensive industries may become harder, if robot-based innovation leads to further concentration of such activities in a small number of countries that are technology leaders. New technologies could also introduce a trade-off between two of the desirable characteristics of manufacturing – the potential for productivity gains and employment creation. If developing countries adopt labour-saving technologies, they may forego job creation, but if they maintain traditional and more labour-intensive production patterns, they may not be able to converge with the global technological frontier.

Policy implications and recommendations

The meeting discussed policy implications and recommendations to address concerns over both labour markets and employment prospects generally and the prospects of developing countries.

Regarding the former, participants emphasized the importance of improving the quality of education, supported by increased public investments in the sector. Education systems would need to adjust, putting greater emphasis on life-long learning. Relatedly, incentives would need to be set for both employers and employees to invest in new skills, including digital skills. At the same time, it was recognized that skills development of the labour force would be only one element in a much broader policy response, which would need to include social protection, innovation and investment policies, and macroeconomic policies.

In light of job polarization, increases in part-time and self-employment, and rising inequality, there was a need to adjust and/or extend social protection systems and safety nets. This includes changes to their financing structures in those countries where such systems are funded from payroll taxes, and a shift toward taxing the owners of capital, carbon taxes and others. More generally, redistributive policies need to be considered to address rising wage inequality and the rising share of capital income.

There was a suggestion to strengthen national innovation systems and to reorient them towards innovation that was socially relevant. Accelerating the diffusion of technologies – e.g. by facilitating technology transfer, and by addressing the firm-level and country-level financing constraints that currently prevent effective diffusion – was also highlighted, and would be relevant to address in the context of the broader Financing for Development discussions.

Financing and investment are closely related to the broader macroeconomic context, and policies are needed to render the macro-environment more favorable to investments in the productive sector. The current subdued environment holds back investments in new technologies and sectors that could absorb displaced workers and bring about the benefits that have characterized earlier technological breakthroughs

Recognizing that manufacturing will remain a key part of development strategies, albeit with fewer possibilities for productivity growth and employment creation, and that some sectors remain feasible entry points for low-wage and low-skill employment creation, participants nonetheless recommended that developing countries embrace the digital revolution and prepare for digitization, including through investments in relevant soft and hard infrastructure. This policy response would be driven by ‘urgency rather than alarmism’, and would also position countries to take advantage of new opportunities in high-productivity manufacturing and services sectors.