Inclusive Future of Work
The People’s Republic of China

Country brief prepared for the 1st EWG under the 2019 Brazilian presidency of the BRICS

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Abstract
Following the achievement of impressive socio-economic progress over the last 40 years of Reform and Opening-up, today China faces a number of challenges, which, beyond global economic uncertainty, include the uneven level of development across its provinces, high levels of wealth and income inequalities, environmental degradation and a rapidly ageing society. China is also at the forefront of technological innovation, which has become a key driver of growth and development. In that context, the promotion of inclusive and decent work, particularly in the booming service sector, is an important objective to support the continued upward trend in China’s socio-economic development. Finding the right policy mix to address these different challenges simultaneously is the priority of the Chinese government, which has already taken a number of significant measures. Given the size of the country and the importance of its economy, the future of work at the global level is likely to be influenced by the future of work in China.
Introduction

The Chinese growth trajectory in the last four decades is impressive across a broad array of metrics. In the last two decades between 1998 and 2018, for example, the annual GDP growth rate stood on average at around 9 per cent.¹ For a country of 1.4 billion people, accounting for just under one-fifth of the entire global population, ² the economic transformation and social investment have translated into better living standards for millions of people. In fact, between 1998 and 2018, the share of the working poor – employed persons living in extreme and moderate poverty – saw a sharp decrease from close to 70 to just around 6 per cent.³ Over the period, China has also achieved universal legal coverage of health insurance and old-age pensions.⁴

As the pace of China’s economic growth slows, ensuring the inclusiveness of growth becomes more difficult as it means tackling some of the more challenging world of work issues, among which are informal and non-standard employment and income inequality. Informal employment, despite affording a livelihood to millions, is often characterized by lower pay, poorer working conditions, and lack of social protection. According to ILO estimates, informal workers in China still make up more than half of total employment (ILO, 2018), while non-standard employment is estimated to account for at least a third of all formal sector employment (ILO, 2016) and there is the potential for these shares to increase as work on digital labour platforms continues to spread in the country.

According to the 2019 report of the Sharing Economy Research Centre of the State Information Centre, an estimated 75 million service providers were active in the sharing economy in 2018 and the number of employees hired by platforms reached 5.98 million, a 7.1% and 7.5% increase respectively over the previous year. Other estimates suggest that gig workers on digital labour platforms now account for as much as 15 per cent of the workforce.⁵

Rising inequality and a very uneven level of development across the different regions of the country are other areas of concern. According to the National Bureau of Statistics, in 2018, the per capita gross regional product of Beijing was 4.5 times that of Gansu Province, at 140,000 and 31,300 Chinese Yuan per year respectively.⁶ Inequality measured by the GINI index showed a sharp increase from 32.3 in 1990 to 43.7 in 2010.⁷ While the figure has seen improvement in recent years, sustained efforts will be required to ensure that the country’s continued efforts in economic transformations do not result in further polarization.

¹Author’s calculations based on GDP growth (annual %, constant prices), International Monetary Fund, World Economic Outlook Database, April 2019; available at: https://www.imf.org/external/pubs/ft/weo/2019/01/weodata/index.aspx [Accessed 31 May 2019].
³Source: Working poverty rate (percentage of employed living below US$1.90 PPP), ILOSTAT; available at: www.ilo.org/iostat [Accessed 28 May 2019]. Extreme poverty is defined as living with <US$1.90 (PPP) per day and moderate poverty is defined as living with >=US$1.90 and <US$3.20 (PPP) per day.
⁵V. Rothschild: “China’s gig economy is driving close to the edge”, in Foreign Policy, 7 September 2018.
⁷GINI index (World Bank estimate); available at: https://data.worldbank.org/indicator/SI.POV.GINI [Accessed 28 May 2019].
Main drivers of the future of work and expected developments

Like most countries, the economy and society of China is susceptible to the multiple forces driving changes in the future of work, namely technological, demographic, and climatic changes. Given the size of the population and the economy, a country like China (along with other BRICS) is likely to both influence and be influenced by these megatrends. Each of these drivers, with the exception of national politics, and the impact of recent measures taken in the context of China-US trade tension, will be addressed in more detail below.

Technological changes

Within a generation, China has transformed from a largely rural, agrarian economy to an economy that pushes the frontiers of technological development. The country has leveraged its position as a global manufacturing hub to move up the value chain in Information and Communications Technology (ICT). For instance, the export of ICT services as a share of total service exports rose from around 2 per cent in 2000 to 13 per cent in 2017. Another indicator of China’s assent in the advanced technology value chain is the share of medium- and high-tech industries in total manufacturing value added, which rests at over 40 per cent. While national expenditure on research and development as a share of GDP in China—at 2.1 per cent—is lower than countries like Japan (3.1 per cent) and the Republic of Korea (4.2 per cent), this marks a twofold increase since 2002 and puts China as the top spender on R&D among the BRICS nations.

China has been transforming its manufacturing sector rapidly towards automation, as indicated by the sharp rise in robot density over the years. From 2013 to 2016 alone, robot density in China more than doubled from 25 to 68 units per 10,000 employees in the manufacturing industry. According to the International Federation of Robotics (IFR), the Government of China aims to continue this dynamic growth in order to achieve its place among the top ten most intensively automated countries by 2020. China also seeks to rapidly expand domestic production of industrial robots, with a target to sell 100,000 annually by 2020. In a recent World Economic Forum global assessment of readiness for the future of production, China was ranked among the “leading” countries, along with countries like Japan, Republic of Korea and Singapore.

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10 Source: Medium and high-tech Industry (including construction) (% manufacturing value added); available at: https://data.worldbank.org/indicator/NV.MNF.TECH.ZS.UN?locations=CN [Accessed 28 May 2019].
13 The WEF ranking is based on national capacity to use innovative technology in production (as both a driver of production and in the structure of production). See WEF, 2018.
Likewise, China has established its position as a major player in the digital economy. McKinsey Global Institute (2017) reports that China held 42 per cent of global e-commerce transaction value in 2016 while the value of mobile payments related to individual consumption was 11 times that of the United States. The report predicts that digital shifts in China will have significant impacts on revenues in sectors like consumer and retail, automotive and mobility, healthcare and freight and logistics.

**Demographic changes**
China has the largest population in the world with around 1.4 billion people, and it is ageing quickly. The median age of the labour force has risen from just over 35 years in 2000 to 41.5 years in 2019 and is projected to rise to 43.5 years by the year 2030.\(^{14}\) It is projected that it will take China only 24 years to transition from an aged society to a 'hyper-aged' society by 2025\(^ {15}\), compared to countries like Australia or New Zealand in the Asia-Pacific region, which both took more than 60 years to make the same transition (ILO, 2019).

From the decade of 2030 onwards, the population is projected to decline for several decades.\(^ {16}\) The impacts of the one-child policy active during 1979-2016 are also likely to manifest in the form of greater elderly care responsibilities for single children born in this period. The dependency ratio is projected to rise from around 10 per cent in 2000 to 17 per cent in 2020 and to 43.6 per cent in 2050.\(^ {17}\)

**Climate change and environmental issues**
The global consequences of climate change are already being observed and are likely to lead to weather and climate extremes, which could pose risks to livelihoods, food security, water supply, health and economic growth (IPCC, 2018).

The China Meteorological Administration in the *China Blue Book on Climate Change* highlights some key indicators such as atmospheric and ocean temperature, glacial retreat, precipitation, and greenhouse gas emissions, raising alarms over climatic conditions both in China and globally.\(^ {18}\) For example, the annual average temperature in China is reported to have increased by 0.24 degrees Celsius every decade since 1951, marking a heating rate that was notably higher than the global average. Similarly, the frequency of some extreme weather and climate events are also reported to have risen over the years with China’s climate risk index surging by 54 per cent in the 1991-2018 period from the average for 1961-1990.

Alongside climate change, another important impact on public health, and by extension the national economy, are the severe levels of atmospheric pollution in China. This has


\(^{15}\) A society is defined as “aged”, when the share of population aged 65+ lies between 7 and 14 per cent, and it is defined as “hyper-aged”, when this share is above 14 per cent. See ILO, 2019.


\(^{17}\) Old-age dependency here is defined as the ratio of population aged 65+ per 100 in the population group aged 15-64. Source: UNDESA, World Population Prospects: The 2019 Revision, online data; available at: [https://population.un.org/wpp/DataQuery/](https://population.un.org/wpp/DataQuery/) [Accessed 15 August 2019].

\(^{18}\) The report is available in Chinese on webpage: [https://mp.weixin.qq.com/s/rgeTpcafVdn8gckJi_gQ](https://mp.weixin.qq.com/s/rgeTpcafVdn8gckJi_gQ). Climate Signals: “China Blue Book on Climate Change”, 2 April 2019.
become a significant negative externality of years of strong manufacturing-led growth. One group of researchers has put the economic costs of air pollution at around 0.7 per cent of the national GDP.\textsuperscript{19} While the Chinese state is proactive in its efforts to counter the high levels of pollution, and progress toward greening the economy is being made (see section on policy responses), the concentration of pollutants in specific areas continues to pose both monetary and health costs.\textsuperscript{20}

**Opportunities and challenges for workers, enterprises and labour institutions**

Technological, demographic, and climatic changes are set to have profound impacts on labour markets and are already shaping the future of work. Since identification of the potential impacts is an important first step in designing policies that shape a future of work that promotes the objectives of social justice and inclusive growth, this section concentrates on opportunities and challenges that the megatrends identified above bring to workers, enterprises and labour institutions in China.

**Technological changes**

As is often the case, technological advancements come with many promises but also a host of challenges. On the one hand, wider adoption of technology and increasing technological depth in production and distribution processes could usher in large productivity gains across industries. For instance, artificial intelligence (AI) alone is projected by some to boost the Chinese GDP by 26 per cent from 2016-2030 (PricewaterhouseCoopers, 2017). On the other hand, technological advancements have exposed economies to certain risks of technological unemployment in the short- and medium-term even if the net impact in a longer time horizon is expected to be positive. According to one estimate, in China there could be 204 million job displacements compared to 297 million jobs created by 2037.\textsuperscript{21}

Workers and enterprises displaced as a result of the government’s aim to transform production-oriented manufacturing into service-oriented manufacturing will have to find opportunities elsewhere. In order to generate a sufficiently skilled workforce to fill new positions in areas of science and advanced technologies, the Chinese government is increasing investment and improving curricula in education and training as well as extending re-training or up-skilling options for existing workers. This is considered necessary to ensure the employability of the workforce, and to adapt to and thrive in the new technology-intensive future of work.

Beyond the volume of available jobs, technology can also impact how people work and the degree to which work and home life become intertwined. Some technology-centred enterprises and start-ups encourage long working hours, which can have consequences

\textsuperscript{19} E. Kao: “Air pollution is killing 1 million people and costing Chinese economy 267 billion Yuan a year, research from CUHK shows”, in *South China Morning Post*, 2 October 2018.

\textsuperscript{20} The mean annual exposure to PM2.5 has declined from a peak of 70.5 to 52.7 micrograms per cubic meter between 2011 and 2017 for China as a whole. Source: PM2.5 air pollution, mean annual exposure (micrograms per cubic meter), World Bank; available at: https://data.worldbank.org/indicator/EN.ATM.PM25.MC.M3?locations=CN [Accessed 30 May 2019].

\textsuperscript{21} PricewaterhouseCoopers: “AI and related technologies to boost employment in China”, undated; https://www.pwc.com/ai-china.
for the health and well-being of workers. However, technology can also be a tool for improving working conditions and for relieving workers from manual tasks that can be better taken up by automation, which can be welcome in situations of labour shortages. In addition, there are already examples emerging of technology-aided or enabled policies driving the transition to formality—including in China.

New forms of enterprises and business models have emerged as a result of technological innovations including digital labour platforms that have opened up new avenues of sustaining livelihoods for millions of people in China. Yet the nascent nature of these sectors means that regulatory frameworks have yet to catch up. While the government is considering a new policy on flexible employment and new forms of work, labour courts are increasingly grappling with questions concerning the nature of the employment relationship between platform workers – those using apps to connect to “gigs” – and the app providers that facilitate the transaction. Chinese labour legislation is dual in the sense that it protects workers in an employment relationship, but does not cover independent workers’ contracts. In a context of dual legislative frameworks and lack of clarity on the criteria used to define the existence of an employment relationship, judicial interpretations of the law are inconsistent (Wang and Cooke, 2019).

**Demographic changes**

By 2025, China is projected to become a ‘hyper-aged’ society and the old-age dependency ratio is expected to rise sharply in the coming decades, as observed in the previous section. As a result, having reached a peak of close to 804 million in 2015, the Chinese labour force is already declining slightly with the trend expected to continue to 2030. As the elderly live longer, the urgency increases to expand their working lives in order to maintain aggregate productivity growth in the Chinese economy. But where social services such as long-term care are lacking and the benefits of social pension are modest, the elderly, especially those with no earning-related pensions, have little choice but to continue working, a circumstance that is especially prevalent among poorer households in rural China (Henry, Fraga and Yu, 2018).

Increasing the quality and quantity of health services and particularly of geriatric care services is likely to remain a policy focus as the population continues to age. With ageing comes a continual increase in demand for care, and in particular long-term care work. It is a priority for the government to train and retain care workers. A specific focus on improving their working conditions will facilitate the recruitment and retention of workers in this sector, as well as attract more men and younger workers. At the same time, China is hoping to leverage technology for elderly care services, using robotics for mobility assistance and provision of telemedicine, for example. This would free up time for care workers to provide better quality services to their patients.

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22 S. Wang and D. Shane: “Jack Ma endorses China’s controversial 12 hours a day, 6 days a week work culture ,” CNN Business, 16 April 2019.
26 The basic old age pension for urban and rural non-waged residents is mostly tax-financed, though individuals also pay a very small contribution.
From a gender perspective, the difference in retirement ages for women (50 years for workers and 55 for cadres and technicians) and men (60 years for all occupations) has generated barriers to women's career development and promotion and created gender disparity in income and pensions.

Further, the 2015-2016 Survey on the adjustment and improvement of maternity policies and female employment issued by the National Working Committee on Children and Women of the State Council and the Women’s Studies Institute of China indicates that nearly half (49.1%) of the employers take into account the gender and marital status of their job applicants, while 53.8% and 45.4% of women were found to have been discriminated against due to marriage and maternity respectively. Additionally 67.7% of the women surveyed believed that giving birth reduced their training or promotion opportunities. Interestingly, the Survey focused on the two-child policy implemented since 2016 and found that 17.1% of women felt discriminated against by having a second child. In the same vein, a 2017 survey by the All-China Federation of Trade Unions showed that although workers generally welcomed the universal two-child policy, up to 70% of women workers were worried about the negative impact of bearing a second child on their career development.

**Climate change and environmental issues**

Already one of the top most disaster-prone countries in the world, China could increasingly face major challenges in the form of climate change induced events. As discussed in the previous section, extreme climatic conditions have already become more prevalent in the last few decades.

Despite the rapid structural transformation leading to a sharp fall in agricultural employment in the last couple of decades, the sector nevertheless still accounts for more than a quarter of total employment.27 Given the dependence on agriculture of such a large section of the population, climate-related disaster events such as droughts, floods, hurricanes, and other extreme weather events, could at micro-levels destroy the livelihoods of a large section of the population and have considerable adverse impacts on the overall national economy.

While climate change brings clear risks, it also brings opportunities for growth in the process of adapting to green production. Climate-responsive investments such as those in renewable sources of energy, making existing energy consumption more efficient, and building climate-resilient infrastructure have the potential not only to accelerate the transition towards a greener economy and the achievement of sustainable development goals, but, as an externality, also to generate a large number of “green jobs”. China is already leading the way when it comes to renewable energy development. For instance, the country accounts for almost 43 per cent of all renewable jobs in the world, with notably high shares in solar heating and cooling (83 per cent), solar photovoltaic (66 per cent), and wind energy (44 per cent) (IRENA, 2018). With renewable electricity

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generation continuing its upward trend in China, employment in this sector is likely to grow further.\textsuperscript{28}

At the same time, the Government’s push to transition to a low-carbon economy has created turmoil in the high-polluting, heavy industrial sector. Factory closures and disruptions have resulted in sizable layoffs in the sector. For the time being, many of those who have lost their jobs in heavy industry have also benefited from the growth of new job opportunities in renewable energy sectors and the services sector, but there are questions regarding the continued absorption capacity of new sectors as industrial disruption continues.\textsuperscript{29}

**Policy responses**

Each of the three drivers of the future of work have prompted policy responses in China. Policy responses concerning demographics and climate change were initiated before the more recent ones focusing on technological innovation. The following sub-sections briefly outline some of the key existing policy responses for each of the drivers and highlight gaps therein.

**Technological changes**

The Government of China aims to advance technological development as a key driver of future economic growth, as is evident by its preparations for the so-called Fourth Industrial Revolution. The *Made in China 2025* industrial plan, launched in 2015, can be viewed in this regard as the larger overall strategy encompassing multiple thematic objectives in the realm of technology-driven growth. Targeting ten strategic sectors, including AI and robotics, the plan aims to make China a global industrial powerhouse.\textsuperscript{30}

Further to *Made in China*, there are also a host of other planning documents pertaining to the promotion of technological development. For instance, the Plan for Development of Robotics Industry 2016-2020, the Guideline for the Special Programme for Developing a Service-Oriented Manufacturing, the Development Plan for Innovation Capacity in Industrial Technology, the Smart Manufacturing Development Plan 2016-2020, the Internet Plus strategy and the Action Plan for Promoting Development of a New Generation of Artificial Intelligence Industry 2018-2020, among others.\textsuperscript{31}

There also exist a number of policy documents, which are specifically aimed at generating and nurturing skilled human resources to support the achievement of objectives on technological development. Among these are the National High Skilled Talents Revitalization Plan, the AI Innovation Action Plan for Colleges and Universities, Five-year


\textsuperscript{29} R. Woo and L. Zhang: “China factory activity shrinks for first time in over two years, 2019 looks tougher”, Reuters, December 31, 2018.

\textsuperscript{30} The ten targeted sectors as follows: next-generation information technology, numerical control tools and robotics, aerospace equipment, ocean engineering equipment and high-tech ships, railway equipment, energy saving and new energy vehicles, new materials, biomedicine and medical devices, agricultural machinery and power equipment. See ILO, 2019.

\textsuperscript{31} For further details on policies in response to the future of work, see ILO, 2019.

Digital labour platforms, interestingly, have been seen as a potentially important buffer against unemployment arising out of economic restructuring, which has in turn aided the popularity of freelance work (ILO, 2019). State support for the development of this sector has also been reflected in public policy. For example, the Internet Plus strategy identifies the platform economy as an important driver of economic development. However, the implications in terms of the welfare of workers in this domain, enforcement of labour standards, access to social protection, and other key labour-related rights and benefits are unclear. Policy responses in these areas are still in the making. Nevertheless, given the sector’s potential to become an important driver of economic transformation for China, it will be essential for the Chinese authorities to ensure positive regulatory developments that can lead to a win-win situation for workers and platform businesses alike.

**Demographic changes**

China has taken a proactive policy approach in managing the challenges of an ageing population. The State Council released a Five-year Plan on Elderly Care 2016-2020 that places particular stress on improving pensions and the healthcare sector. Its targets, achieving 80 per cent basic pension insurance coverage for urban and rural residents and 95 per cent basic health insurance coverage, have now been achieved. The goal set in the 13th Five-year Plan of the Ministry of Social Security and Human Resources is 90% pension coverage and more than 95% health insurance coverage.

The Elderly Care Plan encourages the extension of working lives and indicates the State’s willingness to support enterprise/entrepreneurship development and other job-skills programmes for the elderly.

In fact, elderly care is also viewed as an industry with high growth potential and the Plan foresees to open up the market for elderly care by lowering the entry threshold and simplifying registry procedures for elderly care institutions and to build a market pricing mechanism. The Plan also highlights the need to accelerate the generation and training of care professionals to meet the rising demand while also calling for better remuneration in the care sector. (ILO, 2019).

In 2017, the Chinese government tested a long-term care insurance scheme in 15 cities to relieve the financial burden for targeted families with elderly who are unable to live independently. By subscribing to the scheme, families can have the cost of care services at home or in specialised institutions partially covered. The pilot schemes are currently being expanded to more cities in China.

Besides, the Government places importance on lifelong learning opportunities, including for the elderly. In the Plan for Elderly Education 2016-2020, a target was set to have at least one university for the elderly in each city and equip 30 per cent of administrative villages with learning centres dedicated to the elderly (ILO, 2019).

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33 China Daily “Country to open market for elderly care” December 24, 2016
Finally to address a possible labour shortage and improve the living conditions of the internal migrant population, in 2019, the National Development and Reform Commission issued the Urbanization Plan requiring cities with populations of 1 to 3 million to eliminate household registration restrictions and cities of 3 to 5 million to relax restrictions on new migrants. Such relaxed Hukou registration will help cities attract and keep migrant workers, and facilitate the access of the migrant population to public services.

**Climate change and environmental issues**

There are a number of policy and planning documents that are linked to climate change-related issues and the promotion of the transition towards a low-carbon green economy. In 2013, the State Council issued a White Paper on Policies and Actions for Addressing Climate Change. In 2018, it issued the Three-Year Action Plan for Winning the Blue Sky Defence War 2018-2020 with a focus on improving air quality. The action plan also promotes scaling-up green investments and green transportation systems.

In December 2016, the National Energy Administration adopted the 13th Renewable Energy Development Five-year Plan 2016-2020. Some key targets, both quantitative and qualitative, have been identified under the plan such as raising the share of non-fossil fuel in total primary energy consumption by 15 per cent by the end of the plan and by 20 per cent by 2030; increasing installed renewable energy power capacity to 680 gigawatts by 2020 and installed wind capacity to 210 gigawatts; promote offshore wind and power development; lead innovation in renewable energy technology; among others. At a broader level, the country’s Made in China 2025 industrial plan also places importance on green investments. For instance, it promotes investments into green industrial parks, greening of existing enterprises, and advancing research in energy-efficient green technologies (ILO, 2019).

As discussed in the previous section, China is already leading the path in terms of investments in renewable resource development, creating a large number of jobs in the process. Green transition towards a low-carbon economy also aligns with the state policy of economic restructuring moving away from wasteful production. As the world’s second largest economy and a major industrial and manufacturing powerhouse, the positive externalities from China’s transition towards a more environmentally sustainable industrial ecosystem is likely to ripple much farther beyond its own borders.

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