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Foreword

This Economic Survey was prepared by Margit Molnar under the supervision of Patrick Lenain. Damien Azzopardi provided research assistance. Karimatou Diallo, Stephanie Henry and Ilona Janus provided editorial support. The Survey benefitted from contributions by Janos Ferencz and Masashi Hamano. The thematic chapter builds to a large extent on the new OECD Product Market Regulation indicators, which were produced in the Policy Studies Branch of the OECD Economics Department by the team of Cristiana Vitale and this work was made possible by funding from the World Bank. The Survey benefitted from useful comments by Oliver Denk, Michele Cecchini, Bert Brys and Ruben Maximiano.

The Survey was discussed at a meeting of the Economic and Development Review Committee on 29-30 March 2021, with participation of representatives of the Chinese government. The cut-off date for data used in the Survey is 27 January 2022 and for analysis is end-February 2021. Due to the pandemic, the Survey was prepared without in-country physical missions. The previous Survey of China was issued in April 2019.

The Survey is published on the responsibility of the Secretary General of the OECD.

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Basic statistics of China, 2020[1]

Numbers in parentheses refer to the OECD average[2]

LAND, PEOPLE AND ELECTORAL CYCLE					
Population (million)	1 402.1		Population density per km²	148.8	(38.6)
Under 15 (%)	17.7	(17.8)	Life expectancy at birth (years, 2019)	76.9	(80.2)
Over 65 (%)	12.0	(17.4)	Men	74.8	(77.6)
International migrant stock (% of population, 2019)	0.1	(13.2)	Women	79.2	(82.9)
Latest 5-year average growth (%)	0.4	(0.6)			
ECONOMY					
Gross domestic product (GDP)			Value added shares (%)		
In current prices (billion USD)	14 726.4		Agriculture, forestry and fishing	7.7	(2.8)
In current prices (billion CNY)	101 598.6		Industry including construction	37.8	(26.3)
Latest 5-year average real growth (%)	5.7	(0.8)	Services	54.5	(71.0)
Per capita (thousands USD PPP)	17.3	(46.3)			
GENERAL GOVERNMENT Per cent of GDP					
Expenditure	36.7	(49.8)	Gross financial debt (2019)	57.1	(97.2)
Revenue	29.8	(38.9)			
EXTERNAL ACCOUNTS					
Exchange rate (CNY per USD)	6.90		Main exports (% of total merchandise exports)		
PPP exchange rate (USA = 1)	4.19		Machinery and transport equipment	48.6	
In per cent of GDP			Miscellaneous manufactured articles	22.4	
Exports of goods and services	18.5	(50.6)	Manufactured goods	16.9	
Imports of goods and services	16.0	(47.1)	Main imports (% of total merchandise imports)		
Current account balance	1.9	(0.0)	Machinery and transport equipment	40.3	
Net international investment position	14.6		Crude materials, inedible, except fuels	14.2	
			Mineral fuels, lubricants and related materials	12.9	
LABOUR MARKET, SKILLS AND INNOVATION					
Employment rate (aged 15 and over, %, 2019, OECD: 2020)	67.4	(55.1)	Unemployment rate, Labour Force Survey (aged 15 and over, %, 2020)	5.6	(7.1)
Men (2019, OECD: 2020)	72	(63.0)	Youth (aged 15-24, %, 2019, OECD: 2020)	11.0	(15.0)
Women (2019, OECD: 2020)	58	(47.7)			
Mean weekly hours worked (2016, OECD: 2020)	46.1	(36.9)	Gross domestic expenditure on R&D (% of GDP, 2018)	2.2	(2.6)
ENVIRONMENT					
Total primary energy supply per capita (toe, 2019, OECD: 2020)	2.4	(3.7)	CO2 emissions from fuel combustion per capita (tonnes, 2019)	7.0	(8.3)
Renewables (%, 2019, OECD: 2020)	9.7	(11.9)	Water abstractions per capita (1 000 m³, 2019)	0.4	
Exposure to air pollution (more than 10 µg/m³ of PM 2.5, % of population, 2019)	99.9	(61.7)			
SOCIETY					
Income inequality (Gini coefficient, 2019, OECD: latest available)	0.418	(0.318)	Education outcomes (PISA score in Beijing-Shanghai-Jiangsu-Guangdong, 2018)		
Public and private spending (% of GDP)			Reading	555	(485)
Health care (2018, OECD: 2019)	5.1	(8.8)	Mathematics	591	(487)
Education (% of GNI, 2019)	1.8	(4.4)	Science	590	(487)
Share of women in parliament (%)	24.9	(31.5)	Net official development assistance (% of GNI, 2019, OECD: 2017)	0.0	(0.4)

1. The year is indicated in parenthesis where data are not for 2020.
2. Where the OECD aggregate is not provided in the source database and data exist for at least 80% of member countries, a simple OECD average of latest available data is presented.

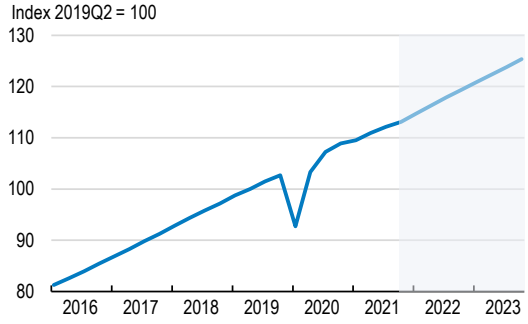
Executive summary

Putting growth onto a sustainable and inclusive path

Growth is back to its pre-crisis trend trajectory, thanks to strong investment and exports. The pandemic appears to be under control in most of the country, but sporadic emergence of clusters continues. Revamping of the social security and fiscal revenue systems will be needed to achieve inclusive and sustainable growth.

China's contribution to world growth temporarily increased as its recovery gained momentum, while other countries were slower in rebounding. As China catches up with the advanced countries and its working-age population continues to shrink, the pace of growth will also slow, though it will remain high by international standards in the medium term.

Figure 1. Real GDP saw the sharpest fall and rebound on record



Source: OECD Economic Outlook 110 database.

StatLink https://stat.link/proge2

Rebalancing toward a consumption-driven growth model has paused due to the investment- led rebound and the slow recovery of tourism-related industries likewise set back the rebalancing towards services. Even though finance and information technology were key drivers when many other industries shrank, they are not as important for employment creation as retail, or hotels and catering are. Losing their jobs, many migrant workers returned to their hometowns, thereby reversing urbanisation, another growth-enhancing process. Urban unemployment rates are falling after a moderate rise during the start of the pandemic.

Infrastructure investment, half of which goes to transportation and public facilities, has levelled off. Increasing industry capacity utilisation rates keep business investments strong. Real estate investment has stalled on the back of property company defaults and falling sales.

Exports reached historical highs, but imports lag somewhat behind. Pent-up global demand for COVID-19-related protection materials and for teleworking-related goods boosted exports. Imports keep slowing as producers are increasingly relying on domestic inputs and the import content of consumption remains low. Lagged recovery of consumption and worldwide travel restrictions weigh on tourism services imports. China's commitments under the Phase I trade deal with the United States have been delayed.

The recovery brought activity back to pre-crisis levels in the third quarter of 2020 and has maintained momentum. The growth rate in 2021 will be high (reflecting the low base), but will return to its gradually declining path thereafter. China needs to spend more on "soft" (education, health, social protection) as well as "hard" investment (environmental facilities, renewable energy, urban transit systems etc.), while excess capacity in real estate should be worked off.

Table 1. Economic activity has recovered

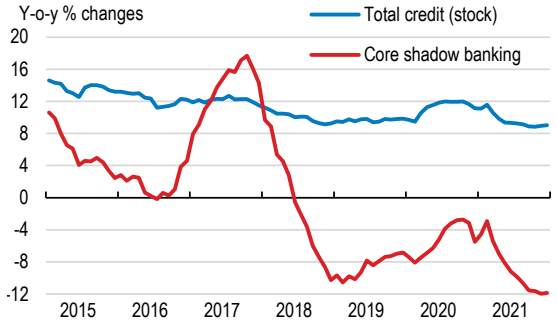
	2019	2020	2021	2022	2023
Real GDP (%)	6.0	2.3	8.1	5.1	5.1
Exports of goods and services (%)	1.5	1.6	16.7	2.4	5.5
Imports of goods and services (%)	0.4	-0.8	7.8	0.4	5.3
GDP deflator (%)	1.3	0.6			
Consumer price index (%)	2.9	2.5	0.8	1.7	2.4
Terms of trade (%)	0.6	7.3	-8.8	-3.8	-0.4
Fiscal balance (% of GDP)					
Overall	-3.7	-6.9	-6.4	-6.0	-6.1
Headline	-2.8	-3.7	-3.1	-3.0	-3.2
Current account balance (% of GDP)	0.7	1.9	1.7	1.5	1.5

Source: OECD Economic Outlook 110 database.

Monetary policy remains supportive, providing adequate liquidity, while shadow banking has been kept under control. The loan prime rate became the new benchmark. It will improve the transmission mechanism as it is linked to the rate charged in open market operations (mainly

referring to the rate of the medium-term lending facility), which better reflects funding conditions. Before, lending rates did not always drop following falling funding costs.

Figure 2. Shadow banking is reined in

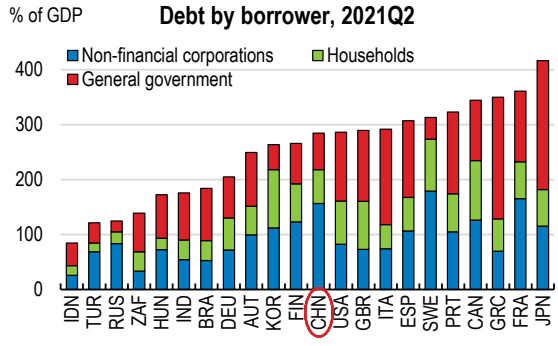


Source: CEIC database.

StatLink https://stat.link/dlo0rc

Financial risks have been exacerbated by the outbreak-induced downturn. Corporate debt has surged and so did defaults, in particular in the real estate sector. Non-bank financial institutions have been hard hit by the defaults of high-risk borrowers, their major clients. State-owned enterprises, the largest borrowers, have also become more indebted and more of them defaulted. Three small banks also defaulted and their only partial bailout will sharpen risk perception. The central bank's stress tests for the banks show that in a severe stress scenario banks may suffer inadequate capital. Implicit guarantees should be gradually phased out by allowing SOEs and other public entities to go bankrupt and losses to be incurred by creditors.

Figure 3. Corporate debt is high

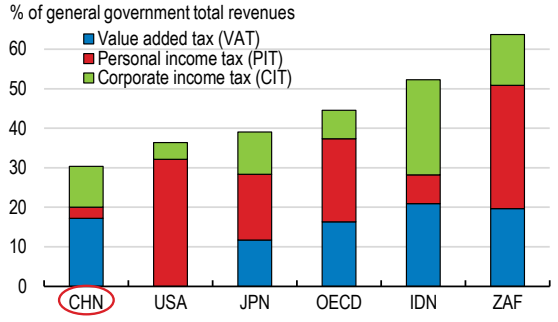


Source: Bank of International Settlements database.

StatLink https://stat.link/c3mn48

Social protection needs to increase, but government revenues are low, calling for revamping the pension, healthcare and public revenue systems. Chinese people have long life expectancy relative to the country's income level, but retire early. Various pension schemes offer different benefits, while contribution rates are a high burden for the low-income. Portability across regions is not always easy. State-owned enterprises, especially financial institutions, contribute little to the budget. China's tax revenues are low, as is the share of income taxes in total revenue. When the economy will have fully recovered, the income tax base should be broadened and deductions abolished. A recurrent tax on the ownership of real estate and an inheritance tax should be introduced to reduce wealth inequalities.

Figure 4. Income taxes make up a small share of revenues, 2019



Source: OECD Revenue Statistics and CEIC databases.

StatLink https://stat.link/c9i02y

COVID-19 revealed weaknesses in the public healthcare system. Healthcare out-of-pocket payments contributed to poverty. The reimbursement rate should be increased, while keeping it sustainable, and portability across the country ensured. Better funding and staffing of centres for disease control would help avoid another health crisis. The mechanism for the infectious disease reporting system should be better enforced.

Climate-related commitments are increasing. The rebound of activity brought back pollution and necessitated a temporary closure of factories in polluting industries in many cities. More ambitious carbon emission reduction targets and commitments to increase the share of renewables have been announced. Renewables are becoming increasingly more affordable and

current capacities should multiply to reach net zero emissions by 2060 or ideally earlier.

Reaping efficiency gains through product market reforms

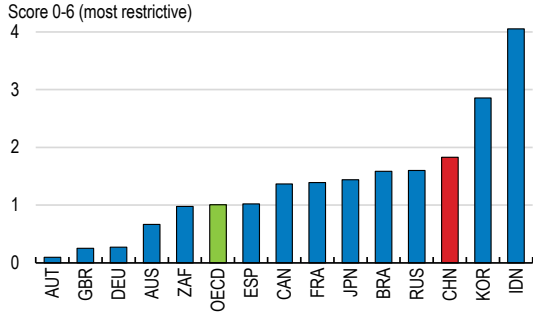
China has cut red tape in the past decade, and in recent years entry restrictions for foreign firms have been eased, but more needs to be done to level the playing field.

Barriers to entrepreneurship have declined, but unevenly across the country. Market regulations should be unified to create a single market. A one-stop shop for company start-up should be established across the country and more procedures should move online.

Fair competition is hindered by administrative monopolies (i.e. exclusive rights and other privileges granted by regulations). The Fair Competition Review Mechanism is applied to new regulations, but existing ones violating competition laws remain. Administrative monopolies should be dismantled and the power of administrative departments restricted.

State control remains strong. Large SOEs continue to dominate most segments of the natural gas and electricity market. In segments where competition developed, price controls should be lifted.

Figure 5. Prices remain controlled, 2018

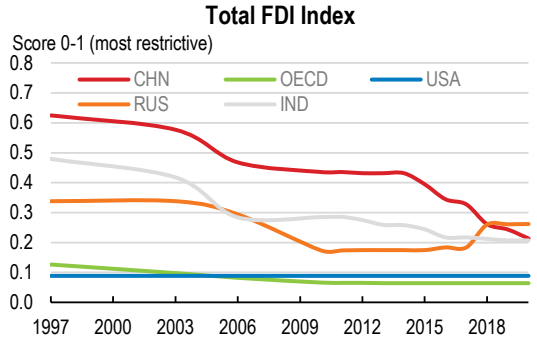


Source: OECD Product Market Regulatory database.
StatLink https://stat.link/ghtbkd

Subsidies helped some industries catch up or leapfrog, but often resulted in waste and distorted competition in both domestic and global markets. As an increasing number of Chinese firms become global players, it is of even greater interest for all to face fair competition worldwide. Equally, as China is becoming an increasingly important global inventor, strengthening intellectual property rights protection is even more relevant also for domestic firms.

Foreign firm entry and business conduct have become easier, but the playing field needs to be levelled further. More sectors should open up to foreign investment and the joint venture requirement abolished.

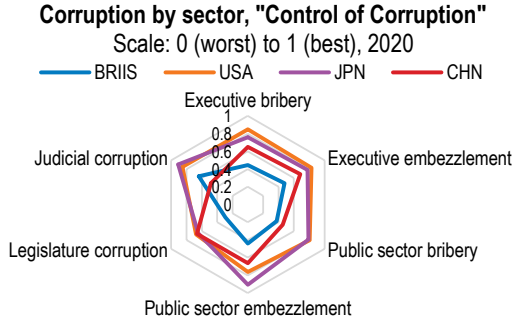
Figure 6. Market access of foreign firms has improved



Source: OECD FDI Regulatory Restrictiveness Index database.
StatLink https://stat.link/5w196e

Corruption is widespread, in particular public sector bribery. Greater transparency and accountability and lower concentration of power in managers' hands would help fight corruption and reduce the related costs.

Figure 7. Corruption is widespread



Note: BRIIS is the average of Brazil, Russia, India, Indonesia and South Africa.
Source: Varieties of Democracy Institute; University of Gothenburg; and University of Notre Dame.
StatLink https://stat.link/mtgsez

MAIN FINDINGS	KEY RECOMMENDATIONS
Macroeconomic policy support and financial stability	
Economic recovery is gaining momentum and policy support is being withdrawn. Private and small firms are hard hit by COVID-19.	Keep monetary policy accommodative by providing sufficient liquidity and not raising policy rates as long as inflation pressure is low and growth is moderate. Raise disclosure standards for private and small firms so that they will be able to finance their viable projects even after policies tighten.
Economic recovery is firming but spending needs towards inclusiveness and sustainability are large.	Emergency stimulus measures should be withdrawn only when recovery is fully on track, with spending increased on social security, health and education as well as on infrastructure investment (such as renewables, urban transit systems and environmental infrastructure). Then a consolidation plan should be announced.
Stress tests indicate that in a severe stress scenario many banks would have inadequate capital.	Abolish reduced loan loss provisioning ratios and disincentivise excessive risk taking by banks.
Generous tax exemptions and reductions continue to curb public revenues. At the same time, most SOE profits are recycled to the sector.	Increase SOE-related fiscal revenues in accordance with OECD SOE corporate governance guidelines, in particular for financial institutions, to better meet longer-term spending needs.
Enhancing economic efficiency	
Administrative simplification is ongoing but there is still no one-stop shop everywhere, moreover, requirements vary across the country.	Unify market regulations across the country to create a single market. Implement a one-stop-shop for setting up a business all over the country and move procedures online.
State-owned enterprises and other public entities enjoy implicit guarantees and other preferential treatment. They accumulated large amounts of debt.	Gradually phase out implicit guarantees to SOEs and other public entities by not bailing them out upon their default.
Natural disasters and emergency situations oblige SOEs to provide support without adequate remuneration.	Implement accounting separation and pay fair compensation for SOEs for their services in emergency situations and make them face a level playing field. Adopt the OECD guidelines on SOE governance.
Administrative monopolies inhibit fair competition across sectors and across regions protecting local incumbents.	Strengthen the rule of law and restrict the power of administrative departments to prevent the creation of administrative monopolies. Dismantle existing administrative monopolies and apply the Fair Competition Review Mechanism rigorously.
Corruption mainly manifests in the form of embezzling of public funds.	Enhance transparency and accountability and reduce the concentration of power in managers' hands. Sign up to the OECD Anti-Bribery Convention.
Market access for foreign companies improved, though joint-venture requirements still exist in some sectors.	Open up further sectors for foreign investment and abolish the requirement of joint ventures.
Many firms do nothing when their intellectual property rights are violated in a lack of recourse.	Strengthen intellectual property rights protection.
Industrial policy priorities make local governments blindly compete in directing public funds to favoured industries, often leading to low-quality, repetitious investment, overcapacity or project failure.	Apply the competitive neutrality principle in the allocation of subsidies and subject the use of public funds to rigorous cost-benefit analysis and third-party evaluation. Make subsidies more transparent.
There is no comprehensive and internationally comparable data in many areas, making it difficult to conduct evidence-based analysis.	Increase data disclosure in all areas of economic activity and report statistical data on an internationally comparable basis.
Strengthening inclusiveness	
Income inequalities are large. Few people are subject to income taxes.	Once the recovery is fully established, revamp the fiscal revenue system by widening the base of the personal income tax and abolishing deductions.
Wealth inequalities are large.	Introduce a recurrent tax on the holding of real estate and an inheritance tax.
China has very high life expectancy and low retirement age.	Ensure sustainability of the pension system by linking the retirement age to life expectancy.
Pension contribution rates vary across the country and there are multiple schemes. Contributions are a high burden for the low-income.	Unify the pension system across regions and schemes and make it more redistributive by abolishing the floor and raising the ceiling for contributions.
Absolute poverty by the official definition has been eradicated aided by fiscal support.	Conduct and disclose comprehensive assessment of poverty-related spending and its outcomes to ensure that poverty eradication is sustainable.

Building a robust health system	
COVID-19 highlighted the downsides of low reimbursement rates of healthcare expenses, pushing many people to the brink of poverty.	Reform healthcare by increasing the reimbursement rate of healthcare and medicine to avoid falling into poverty.
Centres for disease control are underfunded and are losing staff. A direct reporting system of infectious diseases to the central government has been established, but it can be blocked at the local level.	Ensure that local centres for disease control are well-funded and staffed so that they can help avoid future health crises. Clarify the mechanism for the infectious disease reporting system and information sharing and guarantee its smooth functioning.
Currently there does not exist a transparent and effective mechanism for global data sharing.	Increase transparency and data sharing with global health experts and organisations and undertake meaningful reforms to strengthen public health and disease surveillance systems.
Greening growth	
As recovery gains momentum, pollution is back. Temporary halting of industrial production in polluting industries is not a sustainable solution.	Accelerate the energy transition including by significantly reducing the construction of coal-fired power plants in line with China's climate commitments.
Pollution is taking a heavy toll on human lives.	Raise environmental taxes on fossil fuels to reduce pollution and strengthen climate mitigation action.
The electricity market reform pilot to sell energy by producers directly to users does include renewables producers.	Allow renewables producers to sell the electricity they produce through the grid.

1 Key Policy Insights

COVID-19 has hit the economy hard but the recovery is well underway

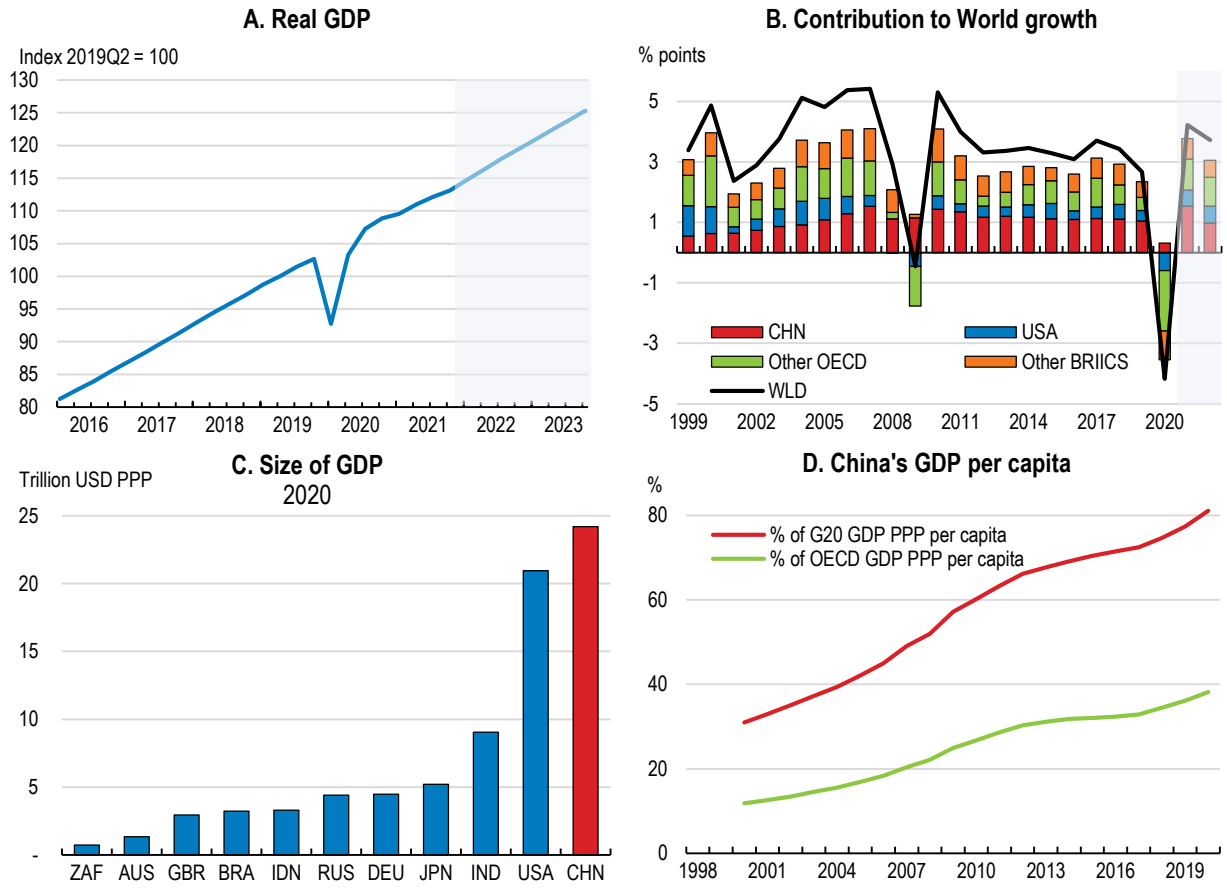
While the Chinese economy was hit hard by the outbreak of COVID-19 in the first quarter of 2020, rigorous testing, tracing and isolation and strict non-sanitary measures helped stabilise the state of the pandemic. Owing to the prompt measures to control the outbreak and effective macroeconomic stimuli, activity sharply rebounded in the second quarter of 2020 and returned to its pre-COVID-19 trajectory (Figure 1.1). While growth is slowing gradually in the medium term, it will likely remain strong and as recoveries of other countries are lagging, China's contribution to world growth is large.

Notwithstanding this economic performance, imbalances have built up. Growth has been led by capital accumulation, supported by high savings. That growth model has led to misallocation of capital and falling investment efficiency. Moreover, the investment-led recovery from the COVID-19 crisis foreshadows the building up of further imbalances down the road. High investment was financed by debt, fuelled by interest subsidies and implicit guarantees for state-owned enterprises (SOEs) and other public entities. Effectively addressing sources of financial risk, such as high corporate leverage, real estate bubbles, excessive risk taking by small banks and non-bank financial institutions and steadily rising and concentrated household debt will help keep growth on a sustainable path.

The 14th Five Year Plan emphasises the importance of the quality of growth. High-quality growth implies greater efficiency and inclusiveness and is not necessarily low growth. Even though some growth may need to be foregone in the short run to ensure efficiency gains for the long run with a wider spread of benefits of growth across society and less stress on a highly polluted environment. Against that backdrop, the main messages of this Economic Survey are:

- Economic growth will remain high for the coming years, but it is slowing as the population ages and the labour force keeps falling. A new round of structural reforms is needed to boost efficiency-enhancing competition in product markets and hence improve the quality and resilience of growth.
- Financial risks are mounting on the back of high and rising corporate debt, increasing defaults, in particular of property companies, failing banks and rising and concentrated household debt. The non-bank financial sector is a further source of risk as it serves low-rated borrowers. A sharper fall in housing prices would hurt real estate companies and through interlinkages could spread to other sectors.
- Absolute poverty has been eradicated, but to make it sustainable, more employment opportunities and rising incomes are needed. Income inequalities remain high and so are inequalities in access to high-quality public services. Health insurance coverage is high, but the reimbursement rate is relatively low and even lower outside of the place of registration. The various pension schemes provide high replacement rates to some and inadequate source of living for others. Unemployment insurance only covers urban employees.

Figure 1.1. China's convergence has been restored after a disruption caused by COVID-19



Source: OECD Economic Outlook database.

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Drastic measures appear to have put a break to the spread of SARS-COVID-2

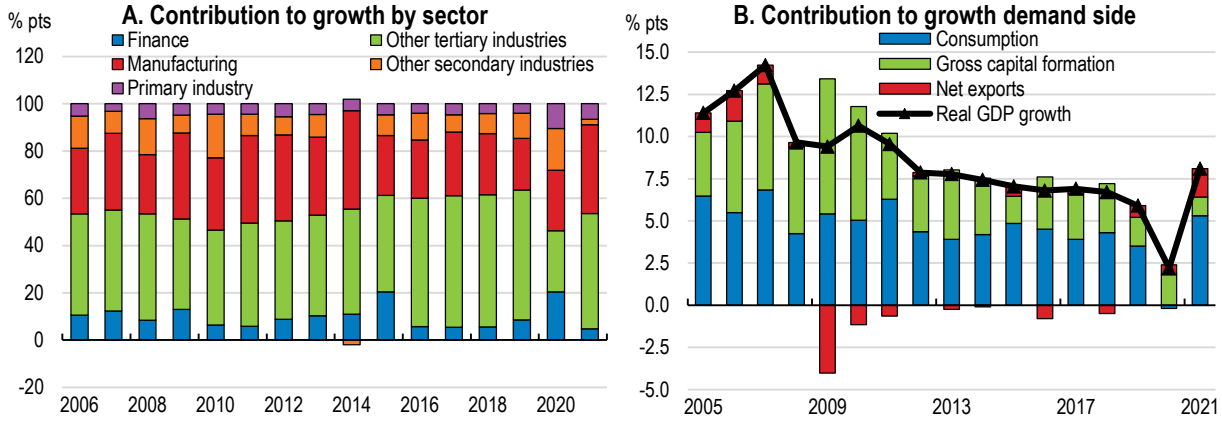
The sharp dive the Chinese economy experienced as a result of the COVID-19 outbreak in the first quarter of 2020 at -6.8% (year-on-year) was followed by a strong V-shaped rebound in the second quarter, and average annual growth for the full year wound up positive, at 2.3%. Growth then stabilised in 2021 and returned to its pre-pandemic gradually slowing path. Notwithstanding the extent of disruption and the fact that it occurred when the economy was already weakening, the economy has quickly returned to its pre-crisis level. Moreover, the rebound did not necessitate large stimulus packages like during the Great Financial Crisis.

The first reports of COVID-19 came out of China. Drastic measures, such as lockdowns and curfews were necessary, as the spread of SARS-COVID-2 was too fast to be halted by just using the otherwise effective conventional method of testing, tracing and isolation. Restrictions imposed on the movement of people when the virus started to spread were the main source of economic disruption. The lockdown of Wuhan on 23 January 2020 and soon after virtually the entire province of Hubei implied severe costs in economic terms but without it, it would have been hard to control the spread of the virus. Depending on the extent of the spread of the virus, the degree of control measures differed across the country. The disruption caused by the lockdown of Hubei was particularly severe as it is not only one of the largest sources of migrant workers in China, but also a large destination for migrants from other provinces. Moreover, Wuhan is a major industrial hub.

The stringent border controls, lockdown, tracking, tracing testing and isolation, were successful: by late March 2020, mobility restrictions in Hubei were lifted and on 8 April also in Wuhan. Even though the outbreak in the epicentre was controlled, sporadic emergence of clusters across the country have continued until today. As a consequence, border controls remain stringent, while contact tracing and testing continue. While in 2020 tens of millions of people have been vaccinated with an emergency approval, the first vaccine was approved for commercial use on the last day of 2020. In January 2021, further tens of millions of people have been vaccinated, all belonging to priority groups such as healthcare workers, people working or studying abroad and people who need to interact with many others in their work. As of November 2021, the vaccination rate was approaching 80% and exceeded 80% in early 2022. Notwithstanding plans to roll out the vaccine gradually to all eligible on a voluntary basis, the emphasis on wearing masks and physical distancing remains as vaccines do not provide full protection against contracting the virus. Moreover, the most recent omicron strain represents an even greater risk as it is confirmed to spread faster than earlier strains, although not much is known about its impact.

The COVID-19 crisis has mostly affected service sectors such as accommodation, entertainment, catering and trade. Hence, the transition from manufacturing to services has paused (Figure 1.2, Panel A). Transportation services that make up 4% of GDP nosedived when lockdown measures were introduced, though by early autumn 2020, domestic passenger flight services had recovered to pre-COVID-19 level. Accommodation and catering, jointly making up 2% of GDP, have been hard hit, though conversions into temporary quarantine centres and a surge in delivery services have mitigated the impact. Finance and IT continued to boom throughout 2020, even in the midst of the outbreak, providing support to growth. The digitalisation drive with the aim to provide goods and services without physical contact, including also in the government sector, boosted demand for financial and IT services. Mobile payments reached record highs and new applications mushroomed. Growth excessively relying on the financial sector, however, is unlikely to be sustainable. The rebalancing process from investment to consumption has also paused (Figure 1.2, Panel B).

Figure 1.2. Rebalancing has paused



Note: GDP growth is in year-on-year terms. Panel A: for other secondary industries, the secondary industry deflator was used and for tertiary industries, the tertiary industry deflator. For the manufacturing industry, the Manufacturing Producers' Price Index (PPI) is used for the years before 2015.
Source: OECD calculations using the CEIC database.

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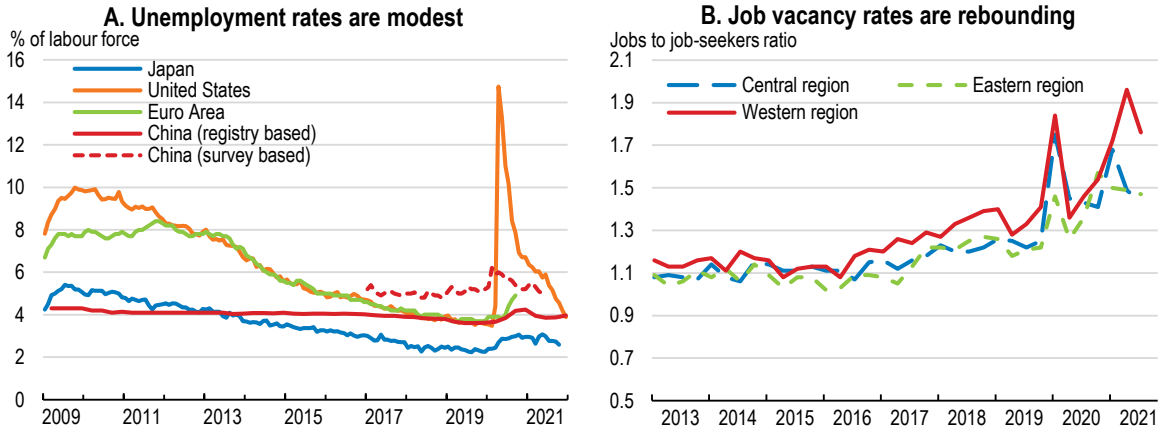
As migrant workers (mostly rural residents taking up jobs in cities) were most susceptible to be laid off following lockdown and sanitary measures, the transition towards a more urbanised society has also paused. The pandemic highlighted some bottlenecks of the social security and employment protection systems. Migrant workers, most affected by both the plunge in services production due to physical distancing rules and closure of export-oriented factories due to slackened foreign demand at early stages

of the pandemic often found themselves out of work in a matter of days. Even if their employer paid unemployment insurance for them, they are only eligible to a one-off assistance if the insurance was paid for at least a year. As a relief measure, between May and December 2020, people with an unemployment coverage of below one year counting from 1 January 2019 were entitled to temporary support equivalent to the local *dibao* (minimum subsistence subsidy) for maximum three months. China's labour market is more flexible than in OECD countries, but during crises, it makes the laid-off more vulnerable, in particular in the absence of a well-developed social security and social assistance system. Migrant workers can hardly afford urban life without a job due to limited social protection, therefore many returned to the countryside when they lost their jobs. To provide some relief for workers stuck at home in less wealthier regions, the National Development and Reform Commission (NDRC) implemented a programme of bringing construction to the workers, where projects in those areas and nearby settlements got priority in reopening. This scheme provided work for over 300 000 people during the lockdown. The growth rate of migrant workers (i.e. the number of rural residents taking up a job in cities) was already low before COVID-19, and it turned negative for the entire year of 2020 (-2.7%).

Unemployment is only measured in urban areas in China, by the registry-based and survey-based indicators, neither of which appears to show a spike as a result of the outbreak and job losses (Figure 1.3). The registry-based unemployment rate has come down to 3.9% in the third quarter of 2021 from the 10-year high 4.2% in the fourth quarter of 2020 (which was only 60 basis points higher than the lowest rate during the last decade). As most people who are not eligible for unemployment benefits have no incentives to register, the survey-based unemployment rate is more reliable. It fell to 4% in December 2021 from a peak of 6.2% in February 2020 in the midst of the COVID-19 countrywide lockdowns. A useful indicator to assess labour market pressure in urban areas is the job vacancy rate, which is the ratio of job vacancies to jobseekers. Job vacancy rates had halved as a result of the collapse of demand following the outbreak, but have remained well above one and have levelled off. To get a clear picture about the actual size of job losses, labour force surveys should include questions regarding willingness to work longer hours to capture surplus labour in rural areas and an indicator capturing underemployment (i.e. working but fewer hours than one wishes) should be constructed.

Figure 1.3. COVID-19 does not appear to have much affected unemployment indicators



Note: Panel A: both the registry-based and the survey-based unemployment rates refer to urban areas. Panel B: a ratio above one means more jobs on offer than the number of job seekers in the respective region.
Source: China City Labour Force Survey, Ministry of Human Resources and Social Welfare.

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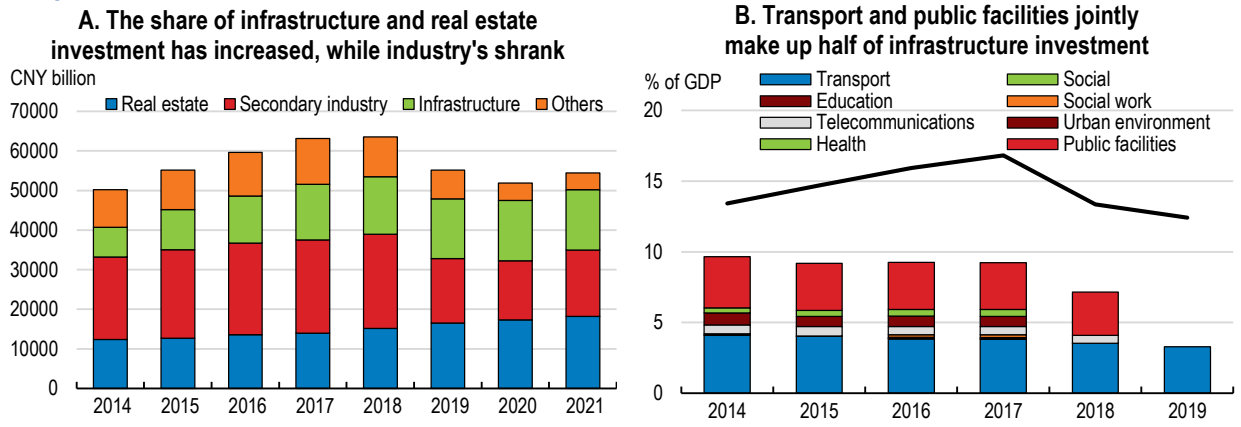
Employment creation has become the key focus of the government. With private enterprises, in particular the smaller ones, cutting back on expansion plans and new hiring, the public sector, both enterprises and the public administration have committed to hire more people than originally planned to act as a buffer. The public sector alone, however, is unlikely to be able to absorb all new entrants to the labour market. Temporarily, also graduate school places have been expanded, but more importantly, entrepreneurship is strongly encouraged. A greater role for the private sector, including by removing entry restrictions and levelling the playing field, would help job creation.

Investment became the key engine of recovery from the outbreak (Figure 1.2, Panel B above), pausing the rebalancing process toward consumption. Investment has three major components: industry, infrastructure and real estate development. The share of investment in the secondary industry (which includes manufacturing and mining as well as utilities) shrank over the past years and by 2020 became the smallest among the three (Figure 1.4). For many years, excess capacity in a number of industries weighed on investment, and stringent administrative measures have led to the phase out of obsolete capacity in coal and steel a year before the targeted deadline, as early as in 2019. In other industries, such as flat glass or cement, instead of administrative capacity reduction targets, the emphasis has been on meeting environmental goals and market-based capacity reduction. The COVID-19 outbreak led to a sharp fall in investment in industry, recovering to a slightly positive growth rate (0.1%) over the whole year of 2020. Investment in utilities and high-tech industries grew at double digits and the latter contributed most to stabilisation of overall investment. Infrastructure's and real estate's shares, in contrast to industry's, increased over the past years, to 33% and 28% of total investment, respectively in 2021. Half of infrastructure investment goes to transport and public facilities. The share of private investment, which is less likely to flow to infrastructure owing to various barriers, shrank ca. 3 percentage points over the past five years.

Figure 1.4. Infrastructure investment exceeded a quarter of the total and goes mainly to transport and public facilities



Note: Panel A: the other category includes investment in agriculture and non-infrastructure tertiary investment. Secondary industry includes manufacturing, mining and utilities.

Source: CEIC database, Environmental Statistics, Tertiary Industry Statistics, Education Expenditure Statistics yearbooks and annual reports.

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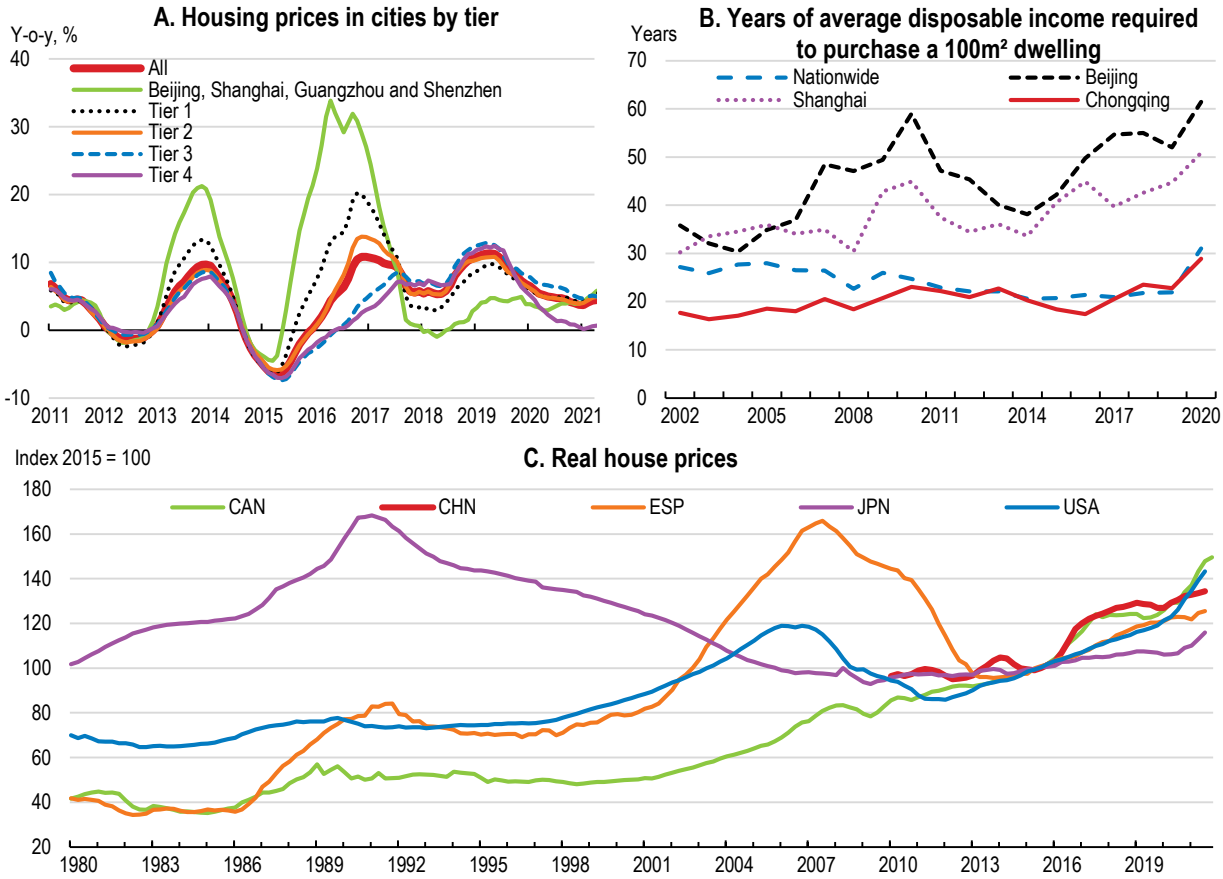
Real estate investment growth has stalled as some large developers defaulted on their bond payments triggering falling sales. House prices fell in several smaller cities, but remained relatively stable in the largest ones (Figure 1.5). Average house prices in China increased sharply in the past five years, though at a similar pace as in Canada and at a much slower pace than during the forming of bubbles in Japan in the 1980s or Spain in the 2000s. The average, however, masks significant differences across regions. Housing in the large cities, such as Beijing, remains out of reach for average earners as it takes 50-60 years of average disposable income to purchase a 100 square metre apartment. Even in Chongqing, which is close to the national average, it is equivalent to 20-30 years' of disposable income.

Figure 1.5. House prices have flattened in mega cities but are still not affordable for average earners



Note: Panel A: Tier 1 comprises 17 cities, Tier 2 22, Tier 3 21 and Tier 4 10. Panel B: for the nationwide series, the urban disposable income is used as only urban residential housing has an open market. Panel C: real house prices are obtained by using the CPI as a deflator. All prices refer to newly built housing as no comparable data are available for second-hand residential buildings.

Source: Panel A: OECD calculations based on the CEIC database. Panel B: National Bureau of Statistics. Panel C: OECD Analytical Database.

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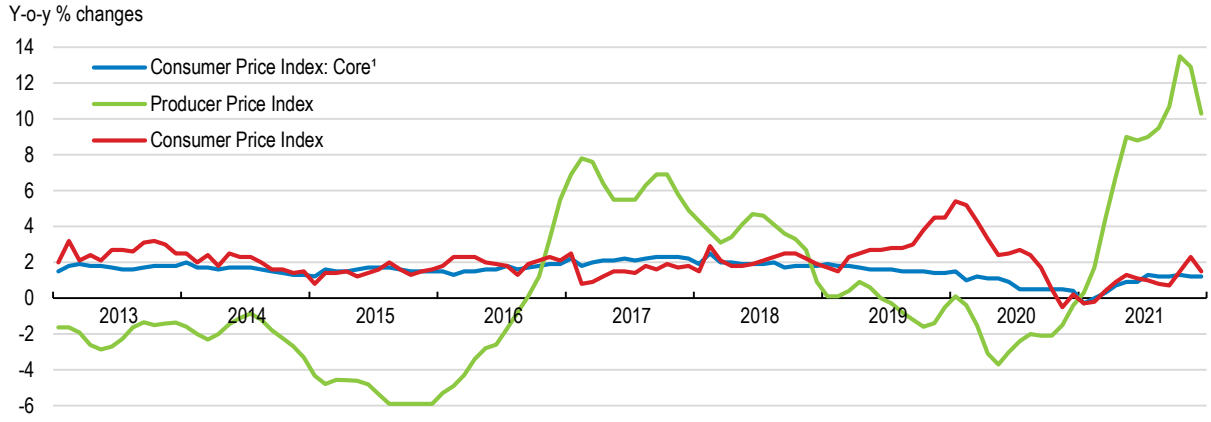
Producer price inflation had surged after three years of trending down, but appears to be levelling off (Figure 1.6). The surge may reflect increase in capacity utilisation and in import prices of raw materials such as iron ore. Consumer price inflation has remained benign following a surge during 2019 that peaked out after the COVID-19 outbreak.

Figure 1.6. Producer prices have shot up, while consumer price inflation remains moderate



1. Core CPI excludes food and energy.
Source: CEIC database.

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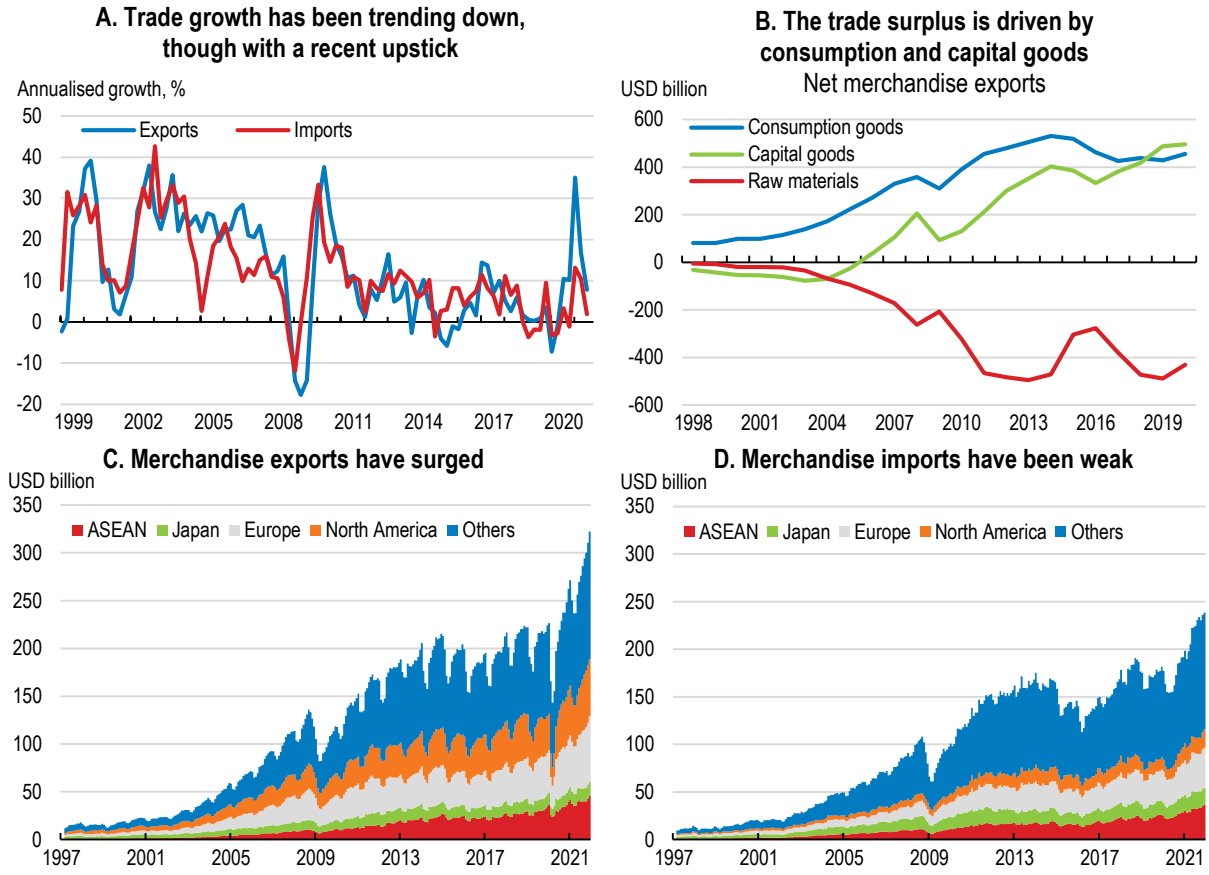
Trade trends and policies amid the recovery

The COVID-19 outbreak had temporarily hit China's international trade hard, first through domestic supply-side disruptions, followed by demand shocks in major markets. The automobile supply chain had been hard hit as Wuhan, the epicentre of the outbreak, is a major automobile hub and the chain was hit in a staggered way: first China then other countries along the chain. The semiconductor value chain was hit to a lesser extent as semiconductor makers in Wuhan remained in operation and kept hiring even in the midst of the lockdown. As China went into lockdown, some competitors, mainly in South and Southeast Asia, stepped in quickly and raised their market shares. Those producers that already had relationships with importers in those markets where China suddenly was unable to supply to could boost their exports swiftly. However, competitors had not been fully able to replace Chinese suppliers (Heise, 2020[1]). Moreover, owing to China's swift control of the outbreak and V-shaped recovery, it was able to lift its exports to historical highs (Figure 1.7).

Figure 1.7. Trade growth has rebounded



Note: Panels C and D are three-month moving averages.
Source: CEIC database.

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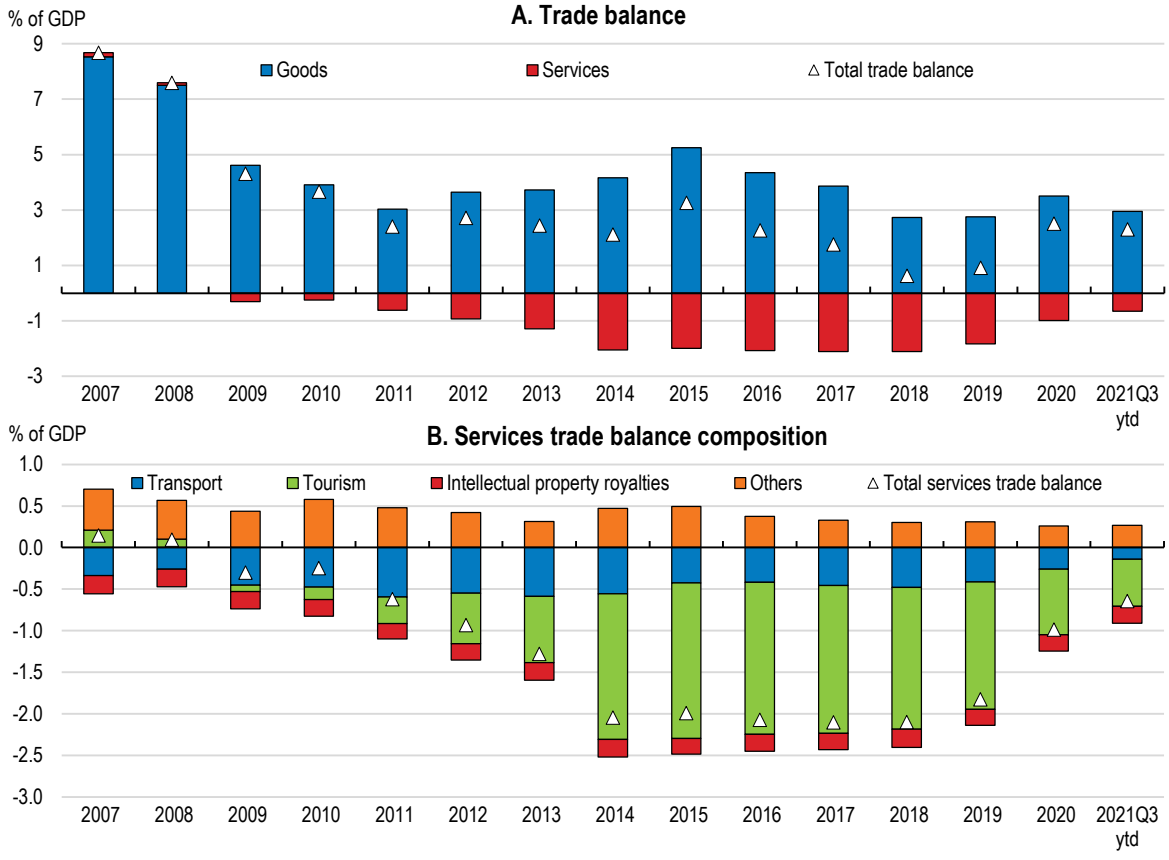
COVID-19 boosted China's trade surplus through multiple channels: (i) the strong exports of COVID-related protection materials as well as the teleworking-related electronics goods and parts, (ii) picking up other countries' export orders, (iii) relatively low raw material prices at early stages of the pandemic, (iv) lagging recovery of domestic consumption, thus weak demand for imports, though the import content of consumption is low in China and (v) wiping out tourism services imports, which had grown to similar magnitudes as the goods trade surplus by recent years (Figure 1.8). With trade being its largest component, the surging trade surplus is also lifting the current account surplus.

Figure 1.8. COVID-19 boosted the trade balance by lifting surplus on the goods and suppressing the deficit on the services account



Source: CEIC database.

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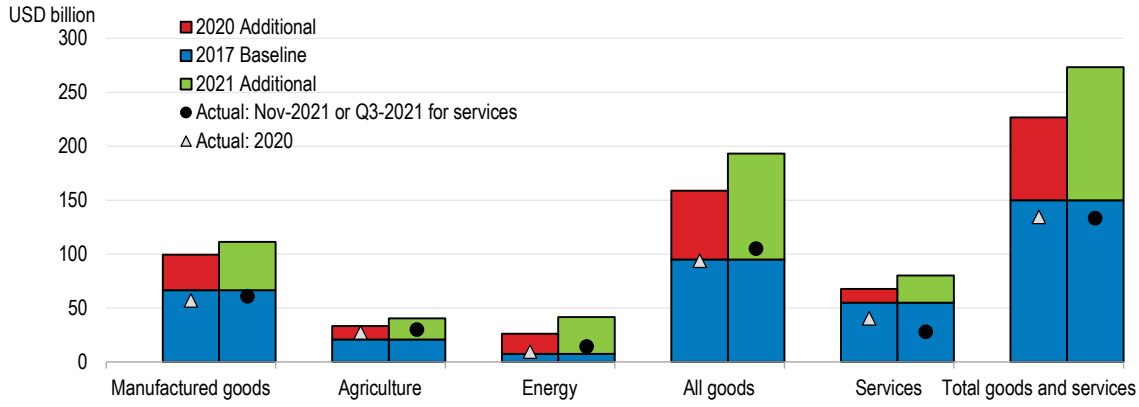
The outbreak of COVID-19 adversely affected trade flows, including imports that should have taken place in 2020 as part of the commitments agreed with the United States (Figure 1.9). Trade tensions continue but the first step towards resolution has been made as an initial trade deal was signed between China and the United States. The agreement helped avoid the last announced round of tariff hikes by the US, which would have taken effect in December 2019. More importantly, it prevented a further escalation of the conflict and improved confidence. However, most of the already implemented tariff hikes will continue to bite. The commitment by China to buy those amounts of additional US goods and services could lead to trade diversion from other suppliers as weak consumer demand bites. China is importing large amounts of agricultural products as national reserves of corn (as well as soybeans and cotton) are being replenished (He, Hayes and Zhang, 2020[2]). Agricultural imports have exceeded the 2017 baseline, though remained still somewhat short of the commitments.

Figure 1.9. Commitments under the Phase I trade deal have been delayed due to COVID-19

China's commitments to import in excess of the baselines



Note: The baselines, and thus also the commitment targets can be calculated in terms of US exports or Chinese imports. Here US exports are used, as the bilateral services trade is only available on the US export's side and not on China's import's.
Source: Bown (2020) US-China Phase-One Tracker: China's Purchases of US goods, available at www.piie.com/research/piie-Charts/us-china-phase-one-tracker-chinas-purchases for goods and OECD calculations for services based on the US Bureau of Economic Analysis services exports statistics.

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The trade conflict between the United States and China triggered a round of restrictions on both sides and heightened uncertainties in global trade and investment. It may also have a longer-term implication on offshoring considerations and global value chains. Moreover, several countries have acted based on the reported use of forced labour in China by initiating trade and other measures in sectors linked to global supply chains. The Chinese government disputes these reports. The perception of foreign investment and trade risks has consequently increased, along with the risk of possible interruptions in some supply chain sectors. Transparency and evaluation of labour conditions are important to assess China's compliance with international labour standards. The sources of conflict go far beyond trade and investment: fair competition and government support are gaining renewed attention worldwide in the context of the pandemic. Market-distorting government support in steel, aluminium and shipbuilding have been in the centre of global disputes for some years now. While emergency support in the context of COVID-19 is considered to be justified, long-term structural government support can lead to distortions in global markets (OECD, 2021[3]). To level the playing field in global markets, subsidies should be transparent.

Global trade is also being adversely affected by ensuing further conflicts. Trade dispute settlement proceedings at WTO were initiated by Australia in response to the imposition of prohibitive tariffs on barley and wine imports from Australia seen as dumping by China. Then COVID-19-related restrictions on meat establishments and health-certificate issues with timber, alongside disruptions to other commodities such as coal, cotton and lobster, curbed Australia's exports to its largest market. The results of dispute settlement are still to be seen, but such events will likely have an adverse confidence impact and potentially even trade diversion. It is important to engage with trading partners on outstanding trade issues in a timely, transparent and evidence-based manner consistent with WTO and bilateral agreement obligations. The adherence to international labour standards as stipulated codified in the ILO Fundamental Conventions should also be ensured also to minimise foreign investment risks and possible interruptions in some supply chains. This includes the need for all countries "to respect, to promote and to realize…the principles concerning the fundamental rights which are the subject of [ILO] Conventions," including "the elimination of all forms of forced or compulsory labour." (ILO, 1930). The EU-China Comprehensive Agreement on Investment, which has not entered into force, also has such provisions.

At the same time, China has lowered its average tariffs on imports from other countries in four rounds already since the beginning of the trade conflicts with the United States, cumulatively reducing the average tariff level by 2.3 percentage points to 7.5% as of end-2020 (Figure 1.10). China has recently stepped up its economic integration efforts. In November 2020, it joined the Regional Comprehensive Economic Partnership (RCEP) with ASEAN and four non-ASEAN countries. While for China, the only major other signatory is Japan, the importance of the Partnership goes beyond just reducing tariffs and other liberalisation measures among members. Through RCEP, China can also gain tariff-free access to major third markets, such as the European Union or the United States through the members that have such agreements with those countries. At the end of 2020, the European Union and China announced that they will sign an investment agreement, which since has been put on hold (Box 1.1).

Box 1.1. The EU-China Comprehensive Agreement on Investment (CAI)

At the eve of 2021, China and the European Union reached an agreement in principle on a long-negotiated Comprehensive Agreement on Investment. The Agreement seeks to redress some long-standing concerns by European companies in the Chinese market by rebalancing the market access asymmetries and levelling the playing field.

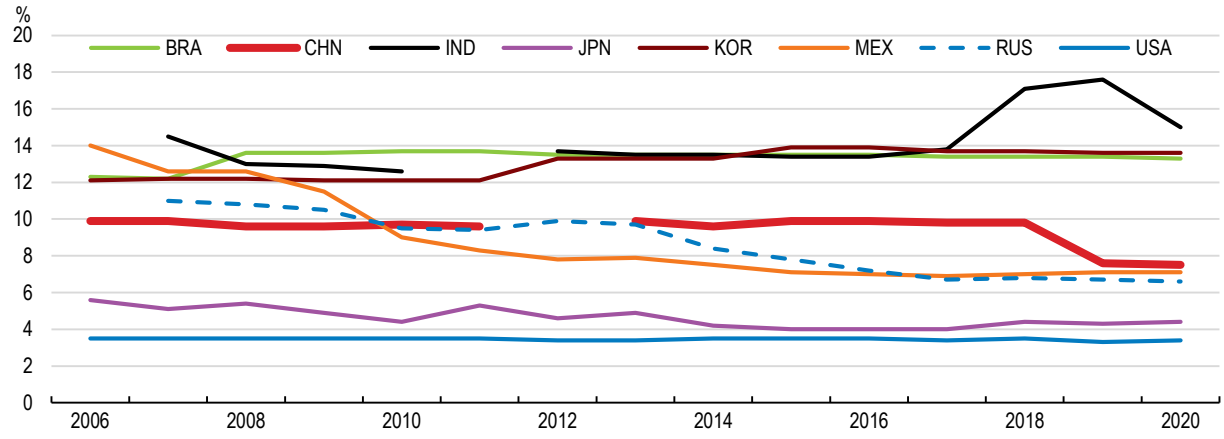
CAI further lifts market access restrictions in selected areas. Rules on state-owned enterprises, enhanced transparency of subsidies and the prohibition of forced transfer of technology aim at further levelling the playing field. CAI also encompasses a robust implementation and dispute settlement mechanism with a possibility to retaliate. Unlike any other agreement with China, it contains rules on sustainable development, including commitments by China to implement effectively the Paris Agreement on climate change, and to ratify ILO Fundamental Conventions on forced labour.

CAI includes steps towards more reciprocity, which is also important for China, as it will be seen as a responsible investor and hence be more welcome in EU markets. China is increasingly becoming a major global investor, as the 2019 Economic Survey discussed.

The ratification of the Agreement, however, has been put on hold by the European Parliament on the back of escalating geopolitical tensions between the two parties.

Source: Various news agencies.

Figure 1.10. China lowered its import tariffs since onset of the trade war



Source: WTO.

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China's economy was hard hit by COVID-19 in 2020, but growth has nonetheless reached 2.3% – making it one of the few economies that did not contract. A very robust recovery followed in 2021 (Table 1.1). Following the stimulus, the fiscal deficit also returned to more normal levels in that year. In 2022, stability will be the main focus, as the Central Economic Work Conference in December 2021 foreshadowed. Growth is projected to slow to 5.1% owing partly to the high base in the previous year, but also to carryover effects related to weaker economic performance in the second half of 2021.

Table 1.1. Macroeconomic indicators and projections, constant 2015 prices

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	Current prices (CNY billion)	% change								
Real GDP	64,354	7.0	6.8	6.9	6.7	6.0	2.3	8.1	5.1	5.1
Exports of goods and services[1]	5,184	-2.3	1.9	11.3	3.7	1.5	1.6	16.7	2.4	5.5
Imports of goods and services[1]	12,263	2.6	6.4	6.8	6.3	0.4	-0.8	7.8	0.4	5.3
GDP deflator	-	-0.0	1.4	4.2	3.5	1.3	0.6	3.8	1.9	1.4
Consumer price index	-	1.5	2.1	1.5	1.9	2.9	2.5	0.8	1.7	2.4
Terms of trade	-	12.7	0.2	-6.8	-3.4	0.6	7.3	-8.8	-3.8	-0.4
Fiscal balance (% of GDP)										
Overall[2]	-	-1.3	-3.0	-3.1	-3.1	-3.7	-6.9	-6.4	-6.0	-6.1
Headline[3]	-	-2.4	-2.9	-2.9	-2.6	-2.8	-3.7	-3.1	-3.0	-3.2
Current account balance (% of GDP)	-	2.7	1.7	1.5	0.2	0.7	1.9	1.7	1.5	1.5

1. OECD estimates.
2. The comprehensive fiscal balance encompasses the balances of all four budget accounts (general account, government managed funds, social security funds and the state-owned capital management account).
3. The headline fiscal balance is the official balance defined as the difference between the three items of (i) general budget spending, (ii) replenishment of the central stabilisation fund and (iii) repayment of principal on sub-national debt on the spending side and the three items of (iv) general budget revenue, (v) revenue from the central stabilisation fund and (vi) sub-national budget adjustment on the revenue side. The 2015 figure is the official deficit target.
Source: CEIC database and OECD Economic Outlook 110 database.

The above projections are subject to a number of risks, which overall are somewhat tilted to the downside. Allowing more indebted, unviable state-owned enterprises and other public entities to go bankrupt would sharpen risk perception, but in the short run may lower growth by decreased production. The lowering of the loan-loss coverage ratio for small banks increases their vulnerability to serial bankruptcies of smaller firms. Bankruptcies would spur unemployment, both in urban areas and among migrant workers (rural residents working in cities on a temporary basis). Outbreaks on a greater scale and in more locations across the country could take a toll on growth. Continuing lockdowns in other countries could disrupt value chains, hitting China's parts and components producers and assemblers, although their reliance on imported inputs is decreasing. A faster-than-expected recovery from the virus crisis in Asian countries would boost not only exports, as these are the fastest growing markets, but also employment, as export-driven firms account for nearly a quarter of total employment. A prolonged trade conflict would likely entice further protectionist measures and take a toll on global trade and growth. The new regional trade agreement (Regional Comprehensive Economic Partnership), in contrast, will boost trade and provide better access to third markets. There are some potential tail events, whose probability is small, but their impact on the recovery could be high (Table 1.2).

Table 1.2. Events that could derail the recovery

Vulnerability	Possible outcome
Emergence of more COVID-19 clusters on a larger scale	Lockdowns of large cities or an entire province would derail the economy from its recovery path as it would break supply chains by inhibiting the move of goods and people.
Surge in corporate defaults	Disorderly defaults of property companies would drag down creditors, suppliers and homebuyers. Lagged recovery in some sectors and the end of debt moratoria can accelerate defaults, which have already surged recently. Large-scale defaults would adversely affect bank profitability, especially of small banks as well as non-banks, whose clients are riskier.
Large-scale mortgage-loan defaults	Once debt moratoria are over, heavily indebted households, especially those with very high debt service-to-income ratio, could default on their mortgage loans in large numbers leading to financial stress in smaller banks that are exposed to the housing sector.
Escalation of trade and geopolitical tensions	No progress following the Phase I deal with the United States and other bilateral trade disputes such as with Australia could take a heavy toll on export-oriented firms. Such tensions can potentially lead to "decoupling" not only in trade, but also in the broader areas of investment and technology with undesirable consequences on global growth. Regional instability could lead to adverse confidence effects.
Adverse impact on financial flows	Potential restrictions on financial flows to Chinese financial institutions operating in Hong Kong, China could also have an adverse impact, given the importance of the city as a financial centre.

Monetary policy is supportive

Monetary policy is increasingly price based (i.e. interest rates are increasingly used as policy instruments in contrast to monetary aggregates) and the transmission mechanism is improving. However, targeted policies still prevail. Moreover, the pandemic triggered a new wave of targeted policies, aiming to benefit sectors and individuals in the hardest hit industries and regions. The introduction of the loan prime rate in August 2019 (LPR, Box 1.2), as the benchmark lending rate, is an important step in the interest rate liberalisation process. The major change is that the LPR is now linked to rates set during open market operations (i.e. the PBOC's medium-term lending facility or MLF), which is determined by broader financial system demand for central bank liquidity. Getting access to funds at rates that better reflect funding conditions will improve the transmission mechanism. More recently, on 21 June 2021 a new mechanism for determining the deposit interest rate ceiling was introduced, which, parting from the percentage over the benchmark-type of setting, uses instead a benchmark plus basis points-type of rule. Moreover, instead of the three different ceilings applied earlier, there will only be two ceilings: for state-owned banks and the rest. This measure is a further step in the interest rate liberalisation process and is expected to reduce the deposit rates and hence funding costs for banks.

Since 2017, the squeezing of the shadow banking sector - the major supplier of loans to the private sector and local government investment vehicles – while intended to strengthen financial stability, tightened financial conditions for these entities. Thus far, no viable replacement of shadow banking has emerged. Unlike in other countries in the region during their earlier development stages, in China the informal financial sector has so far not been formalised. Newly established private banks, whose number is approaching 20 in just a few years, used to be thought to address this issue. But they are also chasing large and high-rated borrowers, trying to lure them away from large banks by better services. In addition, the life-time responsibility of loan officers for the loans they extended is a strong disincentive to lend to risky borrowers, even though the tolerance rate for non-performing loans has recently increased marginally.

Box 1.2. New pricing mechanism for loan prime rates

On 17 August 2019 the People's Bank of China announced (PBoC No. 2019/15) that the previous benchmark 1-year lending rate is replaced by the 1-year loan prime rate (LPR) as the new yardstick for new corporate loan pricing, which in turn is based on the medium-term lending facility (MLF). The loan prime rate is published on a monthly basis (on the 20th of each month at 9:30 am).

What is different now?

- frequency of loan prime rate announcement is lowered from a daily to a monthly basis
- linked to the 1-year medium-term lending facility rate instead of the 1-year benchmark lending rate
- the number of participating banks is increased to 18 from the previous 10

Why is the change?

- new step in interest rate liberalisation
- to cut funding costs, which were reduced at the time of the announcement, as the 1-year benchmark lending rate was 4.31% while the loan prime rate announced on the day of the changes was 4.25% (the 1-year medium-term lending facility was 3.3%)
- the loan prime rate exists since 2013 when it was introduced as the interest rate commercial banks charge their best clients and was supposed to reflect market conditions. However, it did not reflect funding conditions as banks kept their rates close to the benchmark

How does it work?

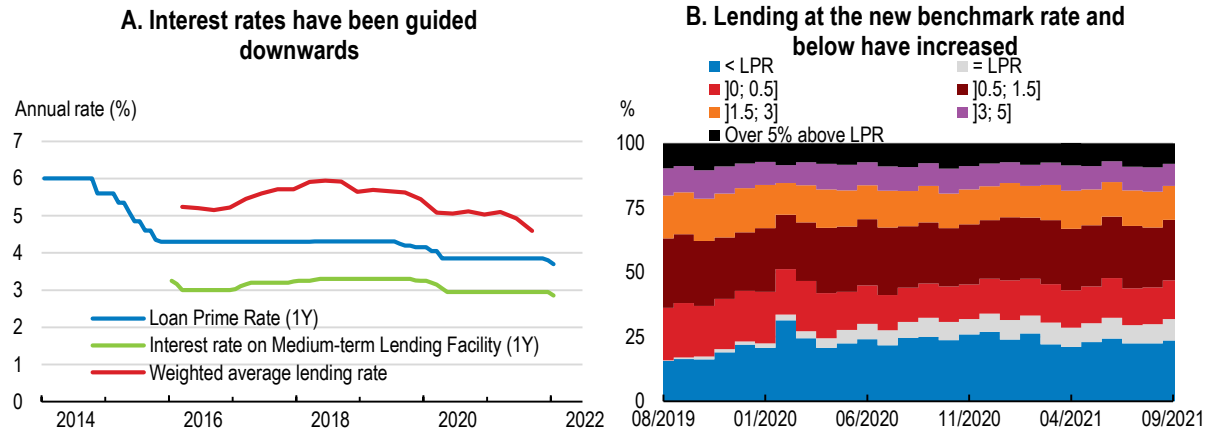
- banks submit their loan prime rate quotations, based on what they have bid for PBoC liquidity in open-market operations (OMOs) (mainly referring to the rate of MLF), to the national interbank funding centre before 9 am on the 20th of each month
- based on the 18 banks, PBoC publishes the loan prime rate at 9:30 am
- banks have to follow the announced loan prime rate for 1-year and over-5-year new loans, but have more freedom in setting interest rates for other maturities

Source: People's Bank of China website.

Monetary policy supported the recovery following the COVID-19 outbreak, then, as real activity rebounded, it became more neutral. This was needed not to fuel further the already bubbly real estate market. More recently, amidst economic headwinds, monetary policy is turning supportive again. The loan prime rate, the benchmark lending rate, which was unchanged for a long time, has been cut recently (Figure 1.11). Bank lending rates have been driven down, while the share of lending at or below the benchmark has increased. The monetary policy measures taken to revive the economy following the outbreak included the lowering of the reserve requirement ratio, reducing the interest paid on excess reserves, cutting the loan prime rate (earlier in 2020) and rates on medium-term lending facility (MLF) and open market operations. All these measures were effective to entice banks to lend, as illustrated by robust credit growth shortly after the outbreak (Figure 1.12), which resulted in soaring corporate debt. As growth started to lose momentum in the second half of 2021, two broad-based cuts of reserve requirement ratios were implemented (in July and December) and the re-lending rate for small firms and the agriculture sector was lowered. Furthermore, a new cycle of interest rate cuts appears to be starting: following the cut of the one-year benchmark lending rate by 5bp in December 2021, a month later it was cut by a further 10bp and the five-year benchmark lending rate by 5bp, to 3.7% and 4.6%, respectively.

Monetary policy should remain accommodative providing sufficient liquidity. As long as inflation is low and growth is moderate, policy rates should not be raised. Once economic growth becomes more robust and if policies need to tighten, it should be ensured that smaller and private firms have access to financing for their viable projects. Raising the tolerance ratio for loan officers with regard to non-performing loans helps increasing risk appetite. To overcome the lack of credible performance records, corporate disclosure and reporting requirements should be made transparent, as recommended in previous Economic Surveys, to enhance micro- and small and medium enterprises' transparency and access to formal lending.

Figure 1.11. Lowering the benchmark lending rate is driving down lending rates

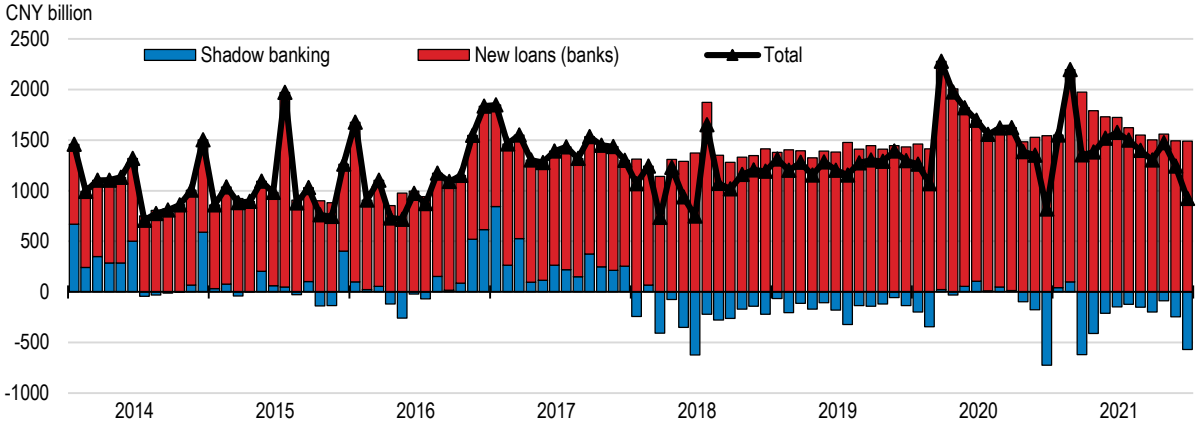


Source: CEIC database.

StatLink https://stat.link/hvz3p0

Figure 1.12. Credit expansion supported the economy during the COVID-19 outbreak

New credit flows (relative to the previous year)



Note: Shadow banking includes trust loans, entrusted loans and banker's acceptances.
Source: CEIC database.

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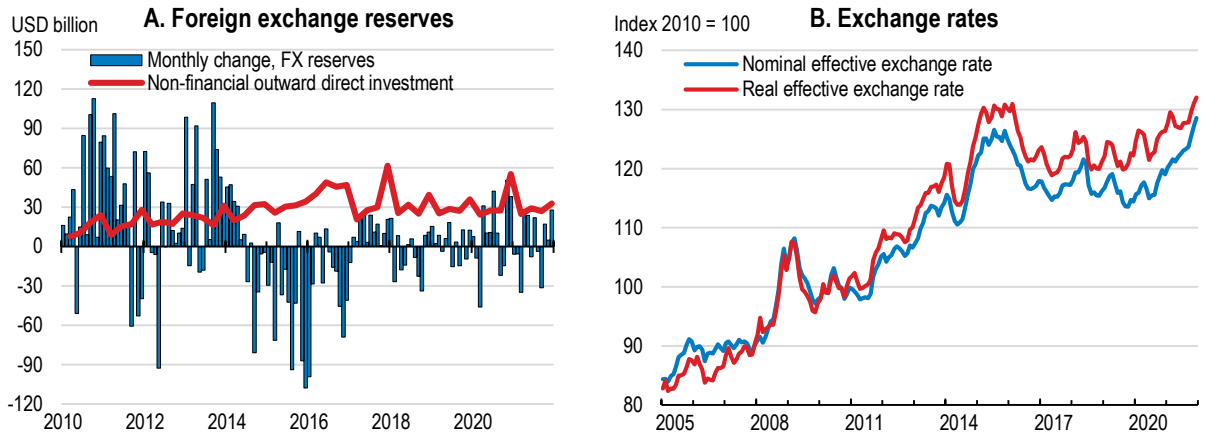
Some measures are targeted to stimulate lending to smaller firms and the weight of financial inclusion in regulatory assessments has been raised. The central bank also introduced a programme to purchase qualifying credit loans from small banks and set up a special purpose vehicle to lend to small businesses. The two policy tools of the payment extension for inclusive finance for small and micro firms and the support plan for inclusive unsecured loans to small and micro firms were extended until end-March 2021. This does not, however, mean that debt moratoria were automatically extended as that depended on negotiation between lender and borrower.

Providing a lifeline to firms with liquidity problems has been a priority. This has partly been done through "crisis bonds" that benefit from a fast track approval procedure and re-lending through the China Development Bank and commercial banks. Firms affected by the crisis have access to subsidised loans at the maximum of 1.6% of interest. Low-interest loans will certainly help to refinance existing loans and to finance potential working capital and investment needs. However, many SMEs do not have access to formal bank loans, though their share in total loans has increased recently. They borrow from non-banks or from the informal financial system. In August 2020, the Supreme Court announced that the legally protected (through Civil Law) cap on informal lending will be lowered to four times of the loan prime rate. This is much lower than the former double-cap system of 24% and 36% (i.e. loans carrying an interest rate of 36% were recognised as legal, but in case of non-payment, the debtor was only be required to pay up to 24%) and not much higher than the weighted average informal interest rate in Wenzhou, the capital of informal finance, at the time of the announcement. The lower cap will potentially shut financing sources for high-risk high-return firms, therefore it should be set at a higher level.

Even though the cap does not apply to formal financial institutions, given the life-long responsibility of loan officers for the loans they approve and the non-performing loan (NPL) ratio featuring among their performance evaluation indicators, very risky borrowers are likely to be turned away by banks, not least due to a lack of collateral and credible repayment track-record. To overcome the former constraint, a recent regulation aims at promoting intellectual property right-based lending, which has started a few years ago, but is not yet available all across the country. Some local governments provide guarantees for intellectual property rights-based lending, others, such as Guangdong, Shanxi, Sichuan, Liaoning established a risk compensation fund to share the risks with the lenders in case the loan turns sour. Given the highly technical nature of intellectual property rights, those banks that do not have in-house experts, rely on third-party evaluators. Intellectual property rights-based lending should be made available around the country. This would make access to financing easier in particular for innovative firms in services industries, where firms are less likely to have collateral. Provide technical assistance and training for evaluators.

The exchange rate had been relatively stable in the past couple of years, fluctuating in both directions initially and more upwards more recently (Figure 1.13). The countercyclical factor (set by banks), originally introduced to signal preference with regard to the movement of the exchange rate, was phased out in late October 2020, as depreciation pressures ceased. More recently, due to the high current account surplus and bond market inflows, appreciation pressure on the renminbi has been increasing. To contain appreciation, the central bank increased the reserve requirement ratio for foreign deposits twice in 2021, each time by 2 percentage points, reaching 9% by end-2021. The measures also signal the central bank's tolerance levels toward appreciation. The exchange rate is increasingly market determined: another step in the process was the relaxation of the reserve requirement for selling renminbi through foreign exchange derivatives. Greater market determination of the exchange rate will pave the way for further capital account liberalisation as the exchange rate can serve as a cushion to absorb shocks. Capital flows and foreign exchange reserves have been stable.

Figure 1.13. Capital flows and the exchange rate have been stable



Source: CEIC.

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An innovation is the introduction of the digital currency, for the time being on a trial basis, in cities such as Chengdu, Shenzhen and Suzhou. Although switching from cash to e-currency will forego the seignorage revenue (interest paid by banks for accessing central bank money), it has the advantages of being able to track transactions real time (Demmou and Sagot, 2021[4]). This will help fight money laundering, corruption, tax evasion, but raises privacy concerns. As a further step, the digital currency could also be used in cross-border transactions and such possibilities are being discussed with central banks in Thailand and the United Arab Emirates. Cross-border use of the digital currency would also accelerate the internationalisation of the renminbi.

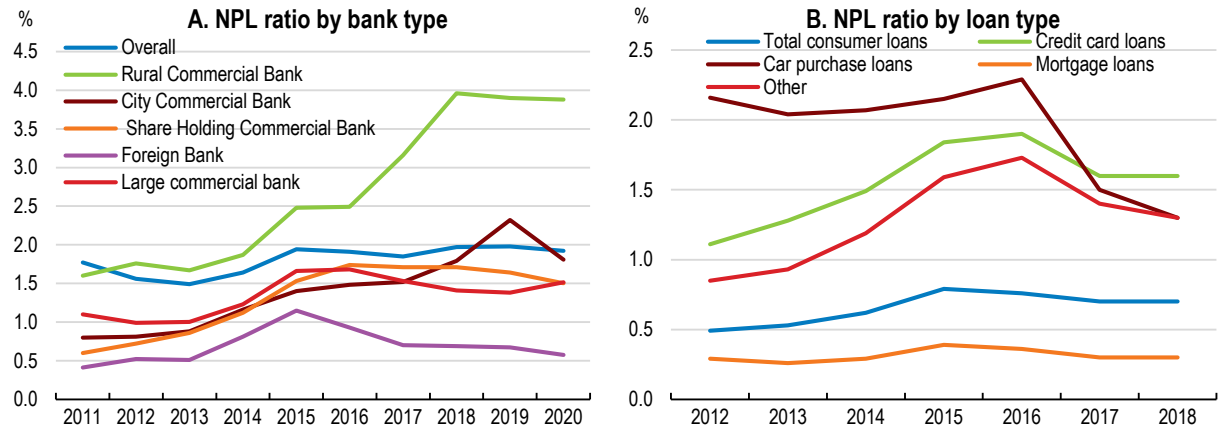
Financial stability has been strengthened, though risks remain

Financial stability has been a key objective in the past few years. Following the 2015 stock market crash, avoiding systemic risk has become a preoccupation of regulators, leading to the 2017 establishment of the Financial Stability and Development Committee, whose role inter alia is to coordinate across regulatory agencies. Systemic risk could potentially stem from a number of sources: (i) smaller banks that rely on the interbank market to a great extent continue to fail, following the recent examples, (ii) shadow banking defaults multiply, (iii) more local government investment vehicles default on their debt and more firms, especially state-owned enterprises at the local level, default, (iv) households with excessive debt service burden default and (v) defaults in internet financing. Given the high degree of interconnectedness in the financial system between different types of banks, with non-banks, as well as between financing vehicles and bond markets and non-banks, contagion risks loom large. This warrants tighter collaboration between the related agencies to avoid systemic risk. Nevertheless, authorities are confident that there are sufficient buffers that could prevent systemic risk.

Deleveraging in the banking sector has continued, following the reining in of shadow banking and off-balance sheet investments over 2016-18. Smaller banks are still mainly relying on the interbank market for funding, raising funds through negotiable certificates of deposit and investing in high-risk high-return projects. Baoshang Bank's (a smaller lender based in Inner Mongolia) failure shook the markets in mid-2019. More importantly, the only partial bailout (while fully guaranteeing small personal deposits, guaranteeing only the principle for interbank deposits with the bank up to CNY 50 million and an average of 90% for large-denomination creditor's rights of more than CNY 50 million) by the government following the bank's takeover sharpened risk pricing. Hengfeng and Jinzhou, the two other defaulted banks, received capital injection from their local government owners and were reorganised. Smaller banks, of which there are over 4000 around the country, were hard hit by COVID-19, as they their activities tend to be more

limited to certain regions and sectors. Those banks had higher-than-average NPL ratios before the pandemic outbreak, even though the overall non-performing loan (NPL) ratio at 2% has been moderate (Figure 1.14). To support smaller lenders, local governments issued special bonds to replenish their capital and supervisory authorities lowered their reserve requirement ratio and loan-loss provisioning coverage ratio (by 20 percentage points). According to the 2019 rating of over 4400 financial institutions (including all commercial banks and the four types of non-banks of conglomerate finance companies, leasing companies, car financing companies and consumer finance companies) by the People's Bank of China, over 12% were classified as high risk, mostly rural small- and medium-size institutions. In late 2020, a merger wave swept across the country, where two or more smaller, mostly rural commercial banks, formed a single entity. The potential contagion effects stemming from small bank failure warrant a more comprehensive approach to bank restructuring: more rigorous monitoring and supervision as well as lowering their risk appetite. In addition, to effectively phase out implicit guarantees, the approach to handling bank failures should be consistent, i.e. creditors should at least partially be held responsible for their risk-taking.

Figure 1.14. The overall NPL ratio has been low, but varies greatly by lender and loan type



Note: Panel A: the classification of commercial banks follows China's official classification. Panel B: refers to consumer loans only.
Source: CEIC database.

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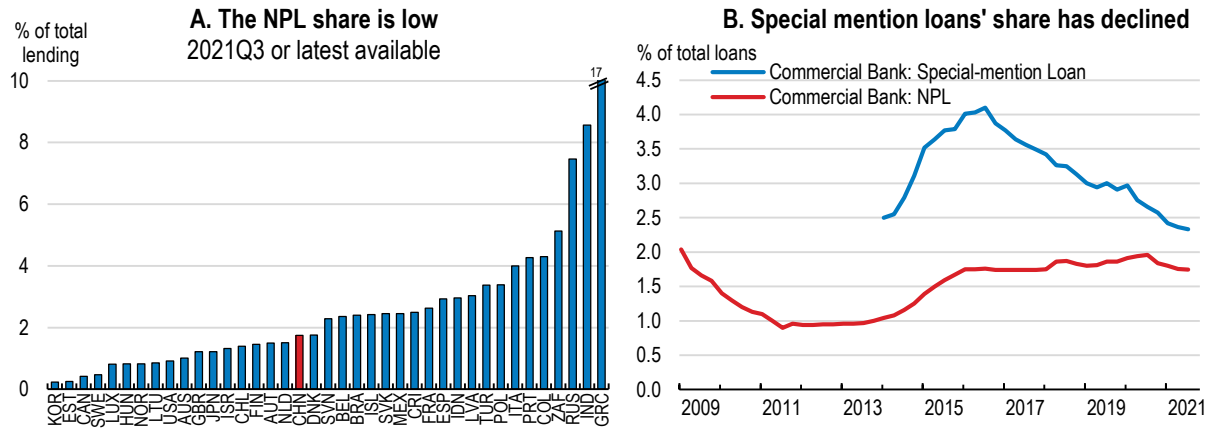
Chinese banks' NPL ratio is also moderate in an international comparison (Figure 1.15). Bad loans are being written off and transferred to asset management companies on a massive scale, thus leaving them less visible on banks' balance sheets. Also, due to debt moratoria for debtors hard hit by the COVID-19 outbreak, potential bad loans are not yet classified as such. In normal times, the special mention category sheds some light on the magnitude of future NPLs, but loans granted deferred repayment are classified as performing. The fallout from the outbreak, however, will likely boost the share of bad loans down the road. Stress tests of the banking sector indicate that under the severe stress scenario, many small- and medium-size banks would not meet capital adequacy requirements. To prepare for a surge in bad loans, banks should increase their provisioning and build up their capital. Furthermore, the banking system's stress testing should be more transparent.

Figure 1.15. The NPL and special mention category ratios are not high for now



Source: Refinitiv database.

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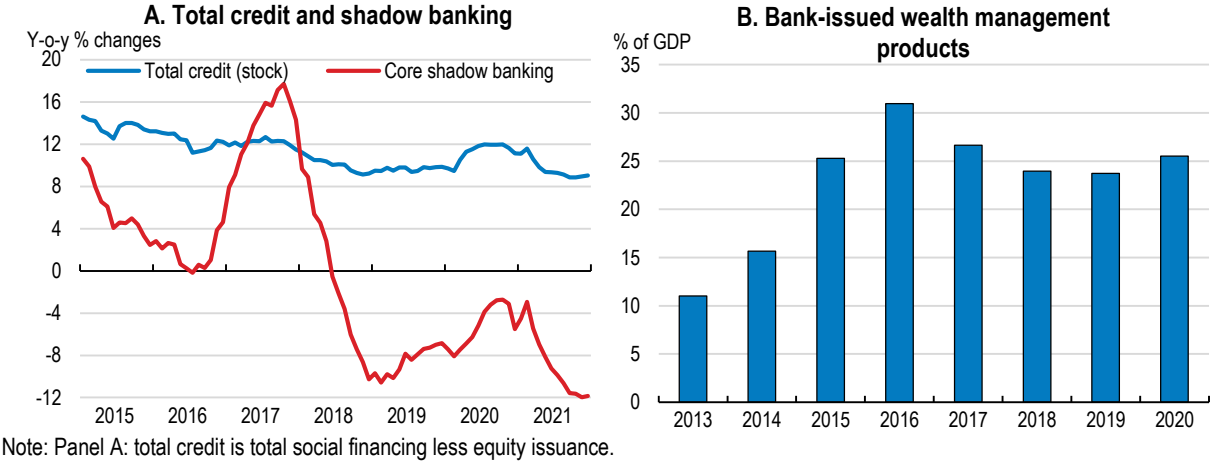
Shadow banking can be another source of systemic risk, even though it has been reined in in recent years (Figure 1.16). Trust companies - of which there are 68 but hardly any without having experienced a default - are in a perilous situation. They sell high-yield products backed by loans to banks and wealthy investors. As those loans are extended to high-risk borrowers such as local government investment vehicles, property developers or small- and medium-size firms, the COVID-19-related slowdown made many fail to honour their repayment obligation and thus the repackaged trust product also failed. The extent of defaults in 2020 at 310 (Source: Diyi Caijing) was therefore much higher than the 118 defaults in 2019. Not least because following the 377 bankruptcy filings by property developers (that are major clients for trust companies) in 2019, the following year 408 filed for bankruptcy (Source: Zhongfangwang). To strengthen the trust industry, in early 2020, the USD 1 billion minimum asset requirement for foreign investors in the trust industry was lifted. Greater disclosure of risks involved in trust products and more deterring fines for over-promising of returns would help reducing systemic risk. Some trust companies (13 as of end-2019) are owned by banks, which could be directly affected by defaults in the industry.

Figure 1.16. Shadow banking is being reined in



Note: Panel A: total credit is total social financing less equity issuance.
Source: CEIC database.

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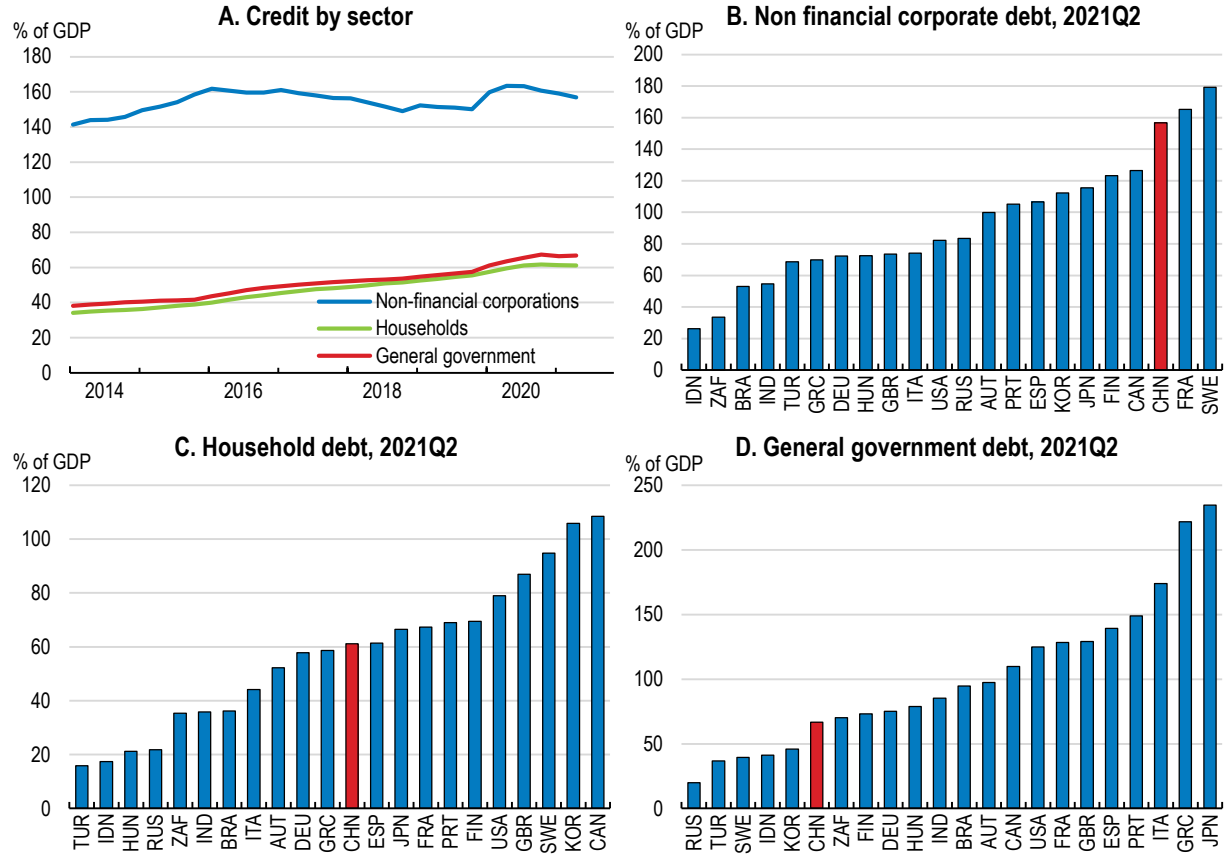
Overall debt is high, mainly corporate debt, which is higher than in most other major economies (Figure 1.17). The part of corporate debt accumulated by local government investment vehicles to finance urban construction projects would in other countries be classified as government debt. This share is unknown, but the magnitude of outstanding debt issued by local government investment vehicles (LGIV) at around 60% of GDP at end-2019 is indicative of the potential size. This figure is based on debt securities only, thus includes only around 2600 vehicles from the over 10 000 that exist. It is unlikely that all this debt would need to be bailed out by the government in case investment vehicles cannot service it (given that not all debt is related to financing urban construction projects), though possibly other types of debt (e.g. bank borrowing etc.) related to financing public infrastructure projects by any of the vehicles, would need to be. Overall official SOE debt at over 150% of GDP is very high and in addition to the above LGIV debt, also includes debt issued by ordinary non-financial SOEs and bank loans and other non-bond debt by LGIVs. As discussed in the chapter on improving the regulatory environment in this Survey, SOEs in the services sector are the major debtors.

Figure 1.17. Corporate debt is peaking off



Source: Bank of International Settlements database.

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SOEs and other public entities enjoy implicit government guarantees, which should be phased out by allowing such firms to go bankrupt to improve risk pricing. Furthermore, as the 2017 Economic Survey of China pointed out, the corporate insolvency framework needs to be more efficient *inter alia* by preventing creditors from blocking the procedure, reducing uncertainty and compensating the laid-off according to relevant laws. Deficiencies in the credit-rating market, including inflated ratings and weak warning systems hinder the healthy development of the bond market. The People's Bank of China issued on 28 March 2021 a draft decision promoting high-quality and healthy development of credit ratings in the bond market, and

proposed holding credit rating agencies accountable as independent third parties. In late April 2021, the securities exchanges published regulations seeking to restrict access of high-risk issuers to the corporate bond market. Local government investment vehicles, in particular those with low credit ratings, will find it difficult to issue corporate bonds with the exception to service existing debt.

The real estate sector is a source of particular risk as COVID-19 led to a surge of defaults and bankruptcy filings in the sector already in early 2020, then in 2021 defaults by some of the largest players shook the market. The sector is highly leveraged and depends on both formal and shadow banking and on both domestic and foreign borrowing. In the first half of 2020, 27% of trust products were invested in real estate, versus 40% a year before, reflecting increasing risk aversion. In the first three quarters of 2020, over a third of real estate sector debt was issued in foreign markets, involving exchange rate risk for unhedged issuers. In August 2020, to curb systemic risk, the central bank and the Ministry of Housing and Urban and Rural Development issued regulations governing monitoring and financing of key real estate firms. As a result of tightening of financing sources and rising costs, real estate firms switched to equity financing. Notwithstanding the sharp deleveraging by property companies, including by aggressive sales and discounts, it did not seem sufficient to rein in property company borrowing.

The China Banking and Insurance Regulatory Commission and the People's Bank of China put a cap on banks' lending to real estate at end-2020. From 1 January 2021, loans to the property sector are capped at 40% of total loans for the largest state-owned banks and banks' mortgage lending should be no more than 32.5% of their outstanding credit. The same ratios for smaller banks are capped at lower rates, for instance for village and township banks, at 12.5% and 7.5%, respectively. Another regulation in early January 2021 tightened macro-prudential ratios related to foreign borrowing, making it more difficult to raise funds abroad. This is a reversal from the easing in March 2020, which attempted to ease access to foreign funds for firms recovering from the crisis. This measure is not limited to the real estate sector, but property companies will be more affected as they rely on overseas funding to a greater extent. Credit events in the second half of 2021 in the property market tightened borrowing conditions, reduced sales and investment in the sector. As the share of unsold properties reached the highest level in thirteen years, many cities adopted stimulus measures such as lumps-um or per-square-metre subsidies for first-time buyers, tax reductions, or broadening the definition of eligible home buyers. Orderly bond defaults will help sharpen risk pricing and work off excess capacities in the sector. A key issue remains how to prevent borrowing for other purposes from being channelled to mortgage financing, as was the case in the recent past.

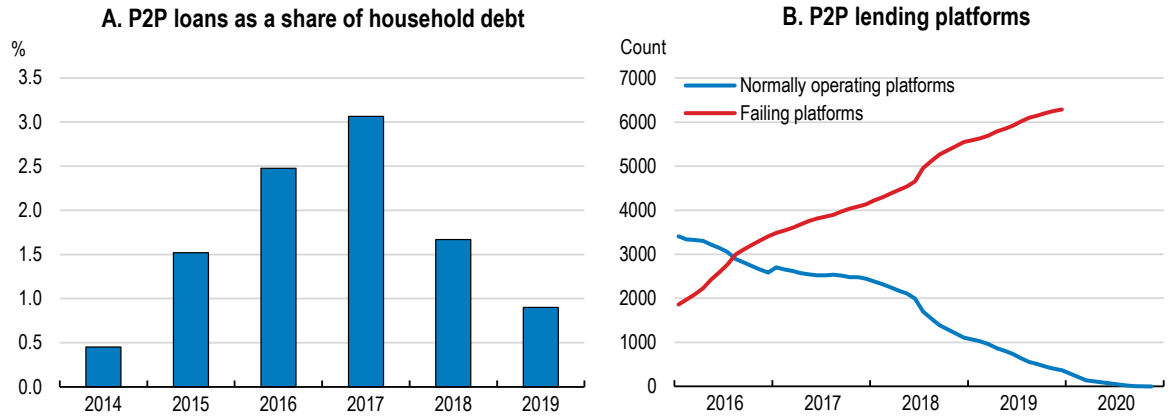
Household debt to GDP is not very high (Figure 1.17, above), but has increased rapidly over the past decade and is highly concentrated, implying potential systemic risk. The People's Bank's household financial situation survey shows that in October 2019, over a third (34.7%) of household debt was owed by 12.8% of households whose debt payment-to-income ratio was above 40%. This average ratio is below the official cap of 50% (according to the 2004 guide for commercial banks by the China Banking and Insurance Regulatory Commission), but above the ceilings even for high-income households in some OECD countries. Moreover, nearly 3% of households are not only going beyond their means (i.e. above 40% of their income) to service their loans, but also belong to the lowest quintile in the income distribution. Furthermore, nearly 13% of household debt is owed by 4.5% of households who pay over 60% of their income to service debt and 1.3% of households not only pay over 60% of debt service but also belong to the lowest income quintile. These 1-3% of households with excessive debt burden and low incomes are particularly vulnerable to full or partial loss of income or layoff.

While consumer loans in general are less likely to default than corporate loans, within this category, mortgage loans are the safest and credit card loans the least safe for banks (Figure 1.14, above). The COVID-19 crisis, which hit poorer people disproportionately harder, has likely made some indebted households even more indebted. The cap on the repayment-to-income ratio should be lowered to avoid taking on excessive risks. In OECD countries, which implement a cap on the debt service-to-income ratio, it tends to be around 40%. Sometimes the statutory cap, where there is such, varies with the features of

the mortgage loan (e.g. fixed or variable interest rate, maturity, currency etc.) and the borrower's income level. Some countries, like France, do not have a statutory cap, but banks impose a 33% general cap, which can be somewhat higher for high-income earners.

Financial innovation can be efficiency-enhancing, but could potentially constitute a source of systemic risk if regulations lag behind and if the playing field is not even. China's financial industry landscape is being transformed at a rapid pace, driven by digital technologies, the use of data and artificial intelligence (AI). Regulation is set to catch up with this development and a three-year plan was foreshadowed in 2019 to establish the framework for digital banking. China has licensed four online-only banks since 2014. In November 2020, the central bank called for greater government guidance in tech sector financing. A number of regulations issued since the summer of 2020 seeks to contain potential risks stemming from digital finance and micro-lending. Online micro-lenders now have to fund at least 30% of each loan jointly with banks. P2P lending, once a thriving business, is being reined in (Figure 1.18). Subjecting lenders to the same regulatory standards as their competitors and enhancing financial education would help curb risks. Also, people without repayment ability, such as students, should not be allowed to take up consumer loans.

Figure 1.18. P2P lending is being reined in



Note: Panel A: loans refer to outstanding P2P loans as of the end of each year. Panel B: failing platforms include platforms that transformed into other business.

Source: Online Lending House available at www.wdzj.com.

StatLink https://stat.link/lmb8i5

China is becoming increasingly a global investor and creditor. Its outward investment stock has exceeded that of Japan, both in overall terms and in the manufacturing sector. Data on overseas credit is hard to come by, but infrastructure projects raise concern about the debt burden in destination countries as well as potential losses for Chinese creditors in case of default. Infrastructure projects should be subject to thorough cost-benefit analysis and take into account the indebtedness of the recipient country. Overseas affiliates of state-owned enterprises should be regularly audited to avoid unviable investments and a loss of state assets.

Table 1.3. Past OECD recommendations on monetary and financial policies

Recommendation	Actions taken since the 2019 OECD Economic Survey
Avoid directing credit to state-owned enterprises and local governments as part of the fiscal stimulus.	As a result of COVID-19-related stimulus measures, state-owned enterprises and local governments got more indebted.
Explore steps towards greater exchange-rate flexibility, starting with making its formation mechanism transparent.	The China Foreign Exchange Trade System announced in October 2020 that market making banks phased out the use of the "counter-cyclical" factor in the pricing mechanism of the yuan's central parity rate against the dollar. The adjusted quotation model enhances the transparency, benchmarking and effectiveness of midpoint quotations at those banks.

Fiscal stimulus is supporting the economy

Fiscal policy has been supportive with a package equivalent to about 3-4% of 2019 GDP as announced by the government. With a falling revenue base related to tax reforms in recent years and temporary exemptions and reductions amid COVID-19, as well as emergency spending, the government deficit soared (Table 1.4). Measures to support the economy were already introduced in 2019 as the economy showed signs of slowing and further measures were deployed in 2020 in response to the COVID-19 outbreak. The frontloading of specialised local bonds strengthened infrastructure investment, which started to pick up slightly towards the end of 2019 and gained further momentum around mid-2020. The rebound of growth in the second quarter of 2020 was driven by investment, including in infrastructure. Increasing reliance on specialised bonds to finance infrastructure investment provides an opportunity to gradually phase out financing through local government investment vehicles, thus increasing transparency and accountability. This opportunity should not be missed.

Table 1.4. Fiscal revenues fell, while spending grew

Percentage of GDP

	2017	2018	2019	2020	2021[1]	2022[1]	2023[1]
Spending and revenue							
Total revenue	33.9	32.4	31.5	29.8	28.3	28.0	27.9
Total expenditure	37.0	35.5	35.2	36.7	34.7	34.0	33.9
Budget balance							
Fiscal balance, overall[2]	-3.1	-3.1	-3.7	-6.9	-6.4	-6.0	-6.1
Fiscal balance, headline[2]	-2.9	-2.6	-2.8	-3.7	-3.1	-3.0	-3.2

1. Projections.
2. The headline fiscal balance is the official fiscal balance, referring to the general budget account only, while the overall fiscal balance includes the other budgetary accounts.

Source: OECD Economic Outlook 110 database.

COVID-19 related fiscal measures lifted spending and contingent liabilities are growing

Some of the fiscal measures introduced in response to the virus outbreak (Box 1.3) are outright spending from the budget or tax reductions/exemptions, while others are quasi-fiscal spending such as subsidised lending through the China Development Bank. The size of some coronavirus-related measures is quantified, while others are open ended, which makes assessment of the overall size of fiscal stimuli difficult. Government spending was increased for epidemic prevention and disease control already in early February, reaching three-quarters of the annual budget for these purposes. Epidemic-related research and development spending is also being stepped up. Crisis-related measures will gradually be phased out, either by reaching the end of the grace period or by revoking the support. Emergency measures should only be withdrawn once economic recovery is fully on track. Targeted income support to low-income households and employment creation support would be effective measures to accelerate the recovery. Moreover, spending needs in many areas such as social security, health and education remain high. In addition to these areas, spending on certain types of infrastructure such as renewable energy, environmental infrastructure, urban transit systems, rural roads, environmental infrastructure and underground structures should also increase. A consolidation plan should be announced once the recovery is fully on track.

Box 1.3. Selected fiscal measures in response to the COVID-19 crisis

Revenue side

Soon after the COVID-19 outbreak, the Ministry of Finance announced a series of tax reductions and exemptions including six tax types and two types of fees. Major measures include the following:

- Medical workers and others participating in the fight against the virus are exempt from personal income tax on their overtime pay/benefits and in-kind payment is not included in their salaries.
- Individuals and firms donating through social organisations or government bodies above the county level can deduct the full amount of their donation from their income tax base.
- Medical equipment and pharmaceuticals related to the new coronavirus are exempt from registration fees and airlines from contribution to the airline development fund.
- Public transportation, logistics, courier and basic service companies are exempt from the value-added tax.
- Allowing firms hit by the crisis to carry over losses for 8 years will result in lower corporate income tax revenues in the medium term. Provision of non-remunerated goods and services by the state-owned sector for crisis prevention will further reduce income tax revenues.
- At the sub-national level, there are myriads of subsidy measures to support affected firms. A common measure adopted by many is the delay in the collection of social security contributions. Temporary exemption measures are also applied. Reduced contribution rates to pensions as well as to work injury insurance could originally be applied till end-2020, but then this measure was extended twice (till end-April 2022) to take into account the delayed recovery of hard-hit firms.

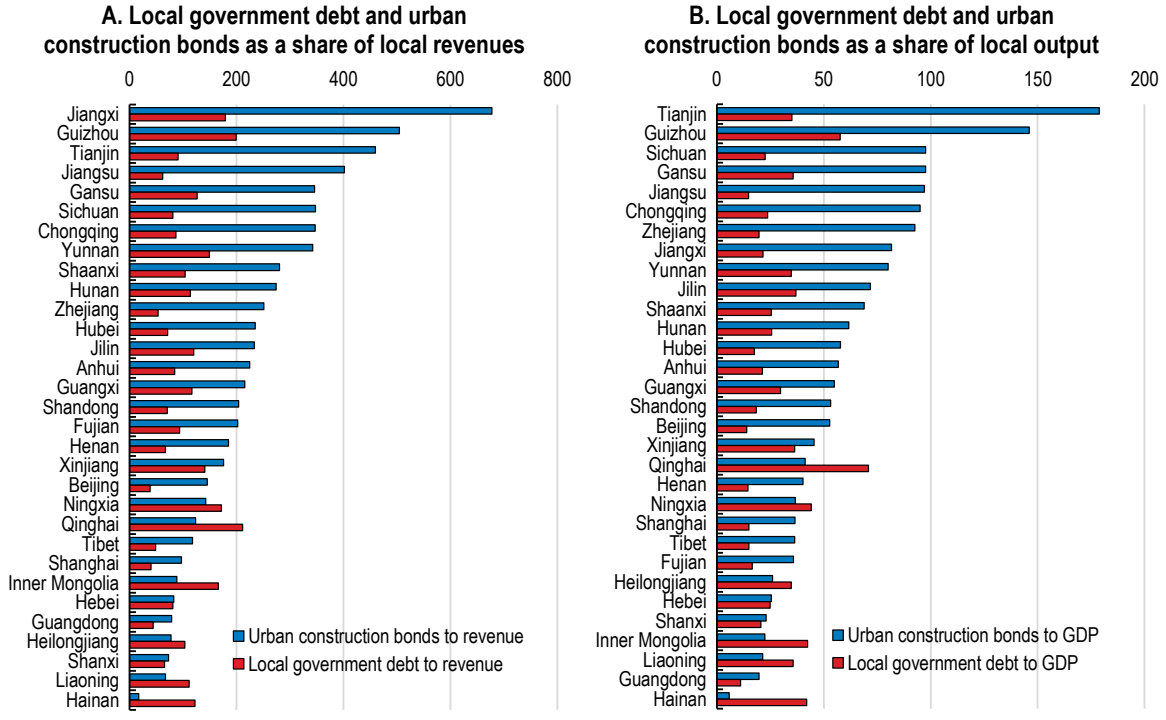
Spending side

- Max. 1.6% interest rate, with half of the interest cost subsidised, for firms supporting the fight against the crisis in the frontline (medical material and daily necessities producers). By end-June, 7597 firms borrowing CNY 283.4 billion at 1.25% average interest rate benefitted from the scheme costing the budget CNY 2.94 billion.
- From April 2020 till the end of the year, small entrepreneurs in retail and wholesale, accommodation and catering, taxi, distribution and transportation could temporarily benefit from subsidised loans up to CNY 200 000.
- Two brand new hospitals were built using CNY 300 million provided by the National Development and Reform Commission.
- Frontloading of special bond issues by local governments had already been decided in November 2019, but as a countermeasure for the crisis, the amount that was allowed to be frontloaded increased from CNY 1 trillion to CNY 1.29 trillion out of the CNY 3.15 trillion quota for 2020. This measure stimulated the economy without increasing public debt. Its effectiveness in early 2020, however, was muted by the inability of construction companies to resume work owing to the severe shortage of masks and other prevention materials and the indiscriminate quarantining of all migrant workers by several local authorities.
- Horizontal fiscal transfers, i.e. financial support among provinces and cities without central-government intermediation, have also been popular, with wealthier areas competing in support to cities in the crisis-hit province.

Note: In addition to the above measures at the national level, sub-national governments adopted a large range of support policies.
Source: Various government websites and news agencies.

Excluding contingent liabilities, public debt is not particularly high at below 40% of GDP and given strong growth and low interest rates, it appears sustainable (Box 1.4). In some provinces, however, the ratios of debt to local output or to local revenues are high (Figure 1.19). As the 2019 Economic Survey recommended, debt ceilings should be linked to the sub-national government revenues also taking into account the stock of accumulated debt. The State Council Opinion on further deepening budget management issued in April 2021 links debt ceilings to sub-national government revenues. Furthermore, large amount of debts constitute contingent liabilities for the government, especially debt accumulated by local government investment vehicles. Debts accumulated to finance urban construction projects would be recorded in the general budget in other countries, but in China most are classified as SOE debt. However, these are contingent liabilities because in the event of failure by a local government vehicle, the government would potentially have to step in, as was the case in 2014. Such debt usually carries implicit government guarantees (explicit guarantees are prohibited). While the size of contingent liabilities is not disclosed, the 60% of GDP of outstanding debt securities of local government investment vehicles, as discussed above, provides a ballpark number. Not all of such debt will likely be assumed by the government in case of default, but other types of debt, in particular bank loans by those vehicles and other vehicles not issuing debt (hence not included in the 60% of GDP estimate) might need to be. To mitigate fiscal risks stemming from surging implicit local government debt, in August 2021, the China Banking and Insurance Regulatory Commission issued document 2021/15 (or often called Document No. 15), which prohibits the undertaking of infrastructure investment on behalf of local governments until it is budgeted.

Figure 1.19. The debt burden of sub-national issues and of urban construction bonds by investment vehicles are high in some provinces, 2019



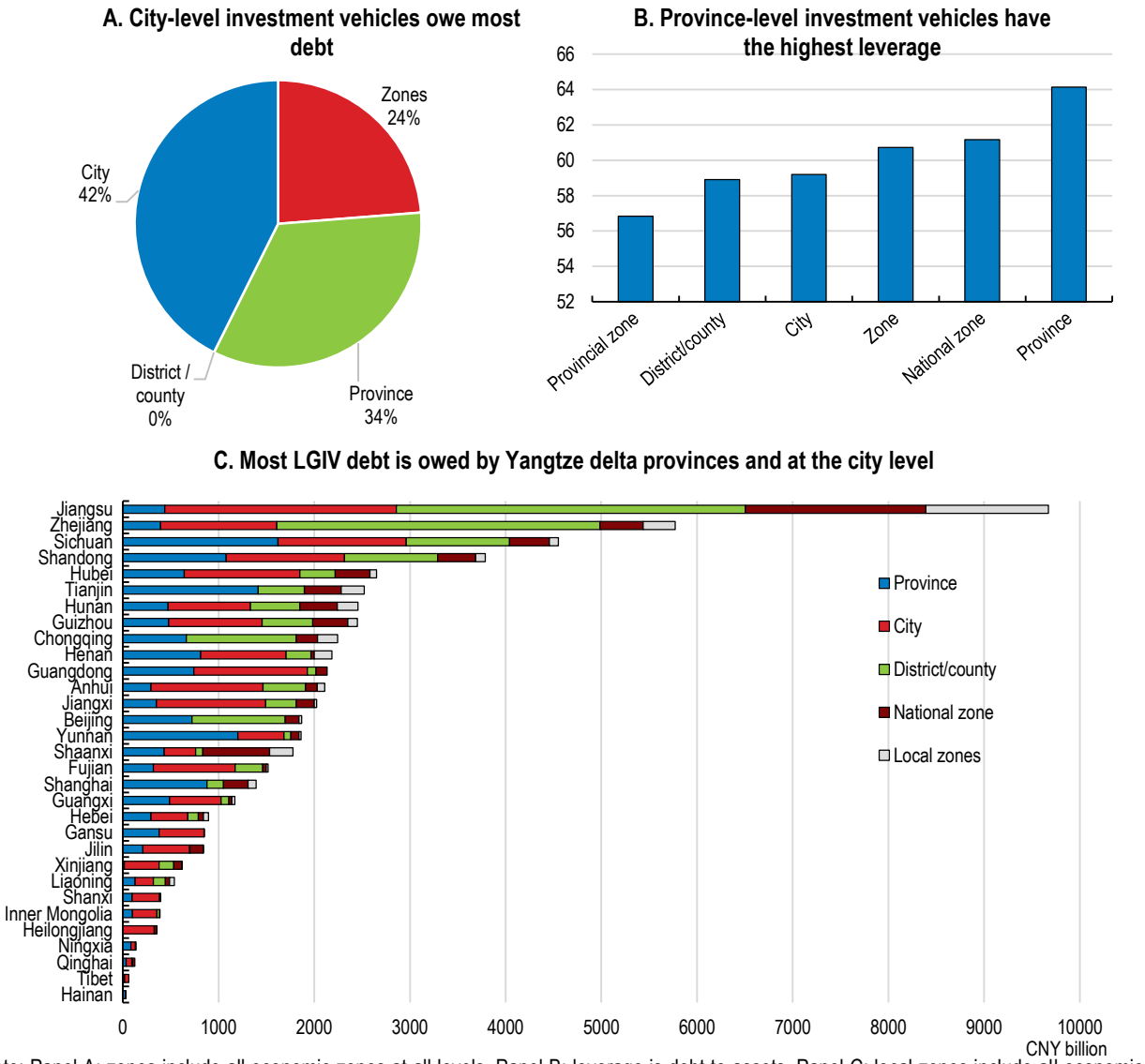
Note: Both local debt (including both general and special bonds) and urban construction bonds refer to outstanding amount. Local government revenue refers to total revenues at the local level comprising the general, the fund, the state capital operation account and the social security fund account.

Source: OECD calculations based on the CEIC and Wind databases and local finance bureaux reports on budget implementation.

StatLink https://stat.link/g0hskv

Most debt by local government vehicles was accumulated at the city/prefecture level, though firms controlled by province-level entities have the highest leverage (Figure 1.20). In terms of regional distribution, investment vehicles in the Yangtze River delta provinces, including Jiangsu and Zhejiang, accumulated most debt, financing their urbanisation drive. LGIVs in economic zones of various types have also been active borrowers. Recent budget implementation regulations require government departments to disclose the budgets of each of their affiliates, while in the past they were consolidated into their departmental budgets, without clarifying the finances of each affiliate. Such affiliates should not enjoy implicit government guarantees and should face a level playing field. Following Document No. 15 by the banking and insurance regulator, the business model of local government investment vehicles started to change. On the one hand, they no longer deliver government infrastructure projects without corresponding funding and on the other hand, they are increasingly venturing into land and real estate development to replace troubled property companies. This will help contain fiscal and financial risks related to excessive borrowing and will provide a viable business model.

Figure 1.20. City-level investment vehicles in the Yangtze delta owe most debt, 2019



Note: Panel A: zones include all economic zones at all levels. Panel B: leverage is debt to assets. Panel C: local zones include all economic zones below the national level.
Source: OECD calculations based on PPP Zhihu.

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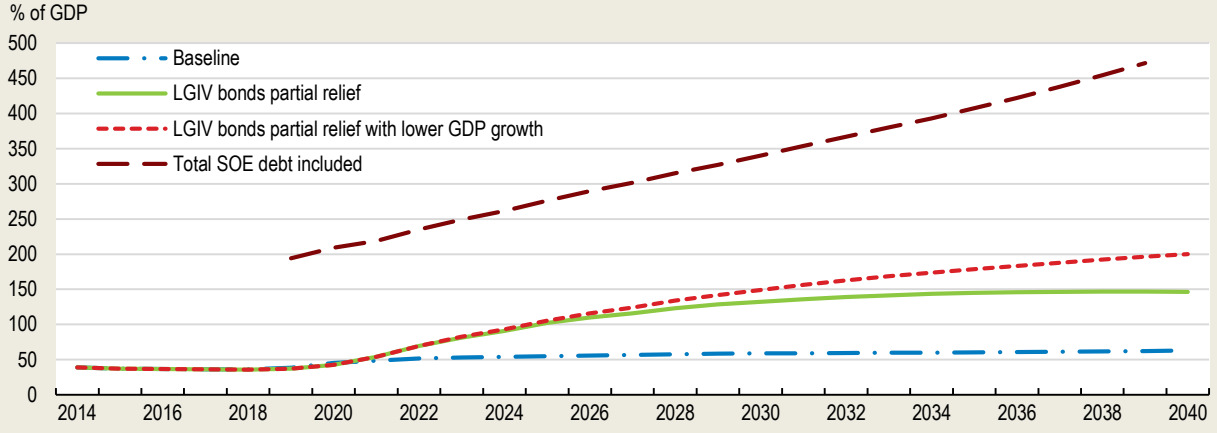
Box 1.4. Assessing debt sustainability

China's official public debt-to-GDP ratio is below 40% of GDP, which is modest in international comparison. Even though the pandemic led to a surge in the deficit, debt ceilings and other budget rules will ensure that it returns to a sustainable level. Growth is also set to return to its original path, thus the outbreak-related rise in public debt will not threaten sustainability. Moreover, low interest rates, at least in the short term, will make debt servicing easier. Rapid population ageing and the related social security, healthcare and old-age care costs, however, will exert pressure on spending and *ceteris paribus* will increase the deficit. Such spending needs will be met by higher revenues (which currently are around 30% of GDP, a relatively low level in international comparison) through public revenue and social security reforms (discussed below in this chapter). In addition, spending pressures will be mitigated by sizeable potential efficiency gains related to improved collection and budgetary practices.

With the assumption of gradually slowing growth to 4% by 2040, a GDP deflator of around 3%, interest rates increasing to 4% and the primary budget deficit gradually turning into a surplus of 1%, public debt appears sustainable. A separate scenario assumes that part of the debt issued by local government investment vehicles (LGIVs) is taken on by the government. Here only bond issues are considered as that is where data are publicly available. The proportion assumed to be transferred to government accounts is two-thirds, the same as in 2014, when that share of accumulated LGIV debt showed up as local government debt. Another scenario assumes that in addition to the above partial debt relief, GDP growth gradually slows to 3% by 2040. While these two scenarios assume a much faster accumulation of debt than the baseline scenario, even with these assumptions debt will not be extraordinarily high in 2040 (Figure 1.21). For illustrative purposes, in addition to official public debt, total SOE debt is also plotted in the chart. While it is unlikely that all SOE debt would need to be assumed by the government, it is indicative of the upper bound of contingent liabilities. It is also indicative of the magnitudes of the additional debt burden if only a fraction of SOE debt needed to be assumed by the government. These contingent liabilities do not include PPP-related liabilities, reconstruction of shantytowns using development banks' loans and other implicit or contingent liabilities for which no comprehensive data are publicly available.

Figure 1.21. Potential bailout of local government investment vehicles or SOEs could derail debt from the sustainable path



Note: The baseline scenario assumes that GDP growth slows to 4% by 2040, GDP deflator is 3%, interest rates on debt increase to 4% and the primary deficit turning into a surplus of 1%. Partial debt relief to local government investment vehicles (LGIVs) assumes that two-thirds of LGIV debt is transferred to local governments every three years and that it is swapped with debt issued by local governments to reduce the interest burden. Every year one-third of the transferred debt is swapped. LGIV debt is the sum of provincial totals in 2019, based on PPP Zhihu. The interest rate on central government bonds is based on a Ministry of Finance press conference release on July 13, 2018 and the interest rate on local government bonds on the first such release on that Ministry's website in September 2018.
Source: OECD calculations based on the CEIC database, PPP Zhihu and Ministry of Finance data.

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Budget transparency is increasing

The Implementing Regulations of the Budget Law, effective from 1 October 2020 (State Council Order No. 729) will likely improve budgetary transparency. The Regulations clarify the actors, the process, the content, legal responsibility and other crucial parameters related to budgeting. A major progress is that in addition to the four budgetary accounts, the Regulations also require public entities to disclose their departmental budgets; moreover, those should be consolidated with their affiliates. Even more importantly, the Regulations impose a stricter budget management framework for entities that only partly rely on budgetary funds by requiring them to report detailed spending of those funds. Those entities can open a special account with the Ministry of Finance's approval and the People's Bank of China will be in charge of managing and monitoring the bank account opened at a financial institution. Such entities will need to report their spending by the two categories of basic and project-related spending.

However, the Implementing Regulations still leave behind unanswered questions. They do not mention how to consolidate the four budgetary accounts and in the consolidation process how to deal with their interactions. Neither do they clarify how exactly basic and project spending should be defined. They do not specify whether and how the management of special treasury bonds and of special local government bonds, both issued in the government fund account, differs. Managing budget adjustment funds would be another area where further clarification is needed.

In addition, there could be further uniformity in the accounts and details disclosed by various budgetary agencies. For instance, it is hard to compare spending on disease prevention and control at the sub-national government level, as some report only their own spending, while others only consolidated spending with lower levels. Moreover, the level of details varies widely, some report only the high-level category of spending on health and birth control, others also the next level of spending on public health, but only few disclose the next level of spending on disease prevention and control.

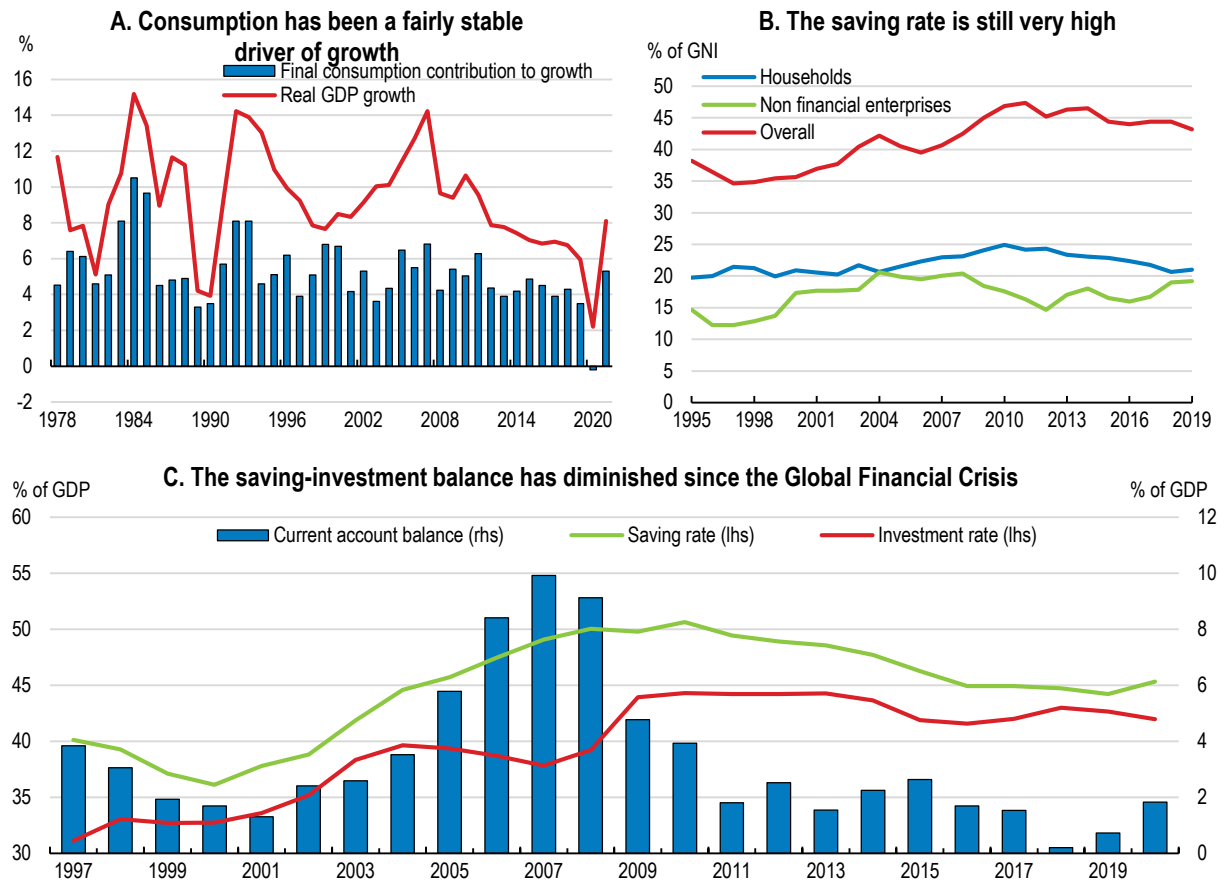
Table 1.5. Past OECD recommendations on fiscal reform

Recommendation	Actions taken since the 2019 OECD Economic Survey
Link debt ceilings to sub-national government revenues.	The State Council Opinion on further deepening budget management issued in April 2021 links debt ceilings to sub-national government revenues.
Centralise the financing of some key spending items such as wage bills in education and health.	Central transfers under the direct transfer system, in particular for education, health etc. purposes are increasing.
Widen the base of the personal income tax and make it more progressive.	No action taken.
Introduce a recurrent tax on the holding of real estate and an inheritance tax.	In May 2021 an inter-agency meeting discussed pilots for the real estate tax. No action on the inheritance tax.
Further reduce horizontal disparities in spending, by for instance, progressive tax sharing schemes.	No action taken.
Conduct thorough cost-benefit analysis of large-scale infrastructure projects and enhance transparency of public investment.	The State Council Opinion on further deepening budget management issued in April 2021 promotes cost-benefit analysis for investment projects.

Ensuring sustainable and inclusive growth in the long run

The transitions that had been undergoing to make growth more sustainable and inclusive have paused as a result of the COVID-19 outbreak. These processes include rebalancing from investment to consumption, from manufacturing to services as well as moving people from rural to urban areas. China's shift to a more consumption-led growth pattern was driven by the deceleration in investment rather than a surge in consumption. Consumption's contribution to growth was relatively stable at 4 to 6 percentage points over the past couple of decades (Figure 1.22). Before the outbreak, it was closer to the lower end of that range and in 2020 it fell below that of investment. The outbreak encouraged further household precautionary savings towards potential future medical costs or as a protection in the event of losing employment. Thus, the household saving rate, which was 45% in 2019, will likely remain at elevated levels in the near future.

Figure 1.22. The saving rate is still very high



Source: CEIC database.

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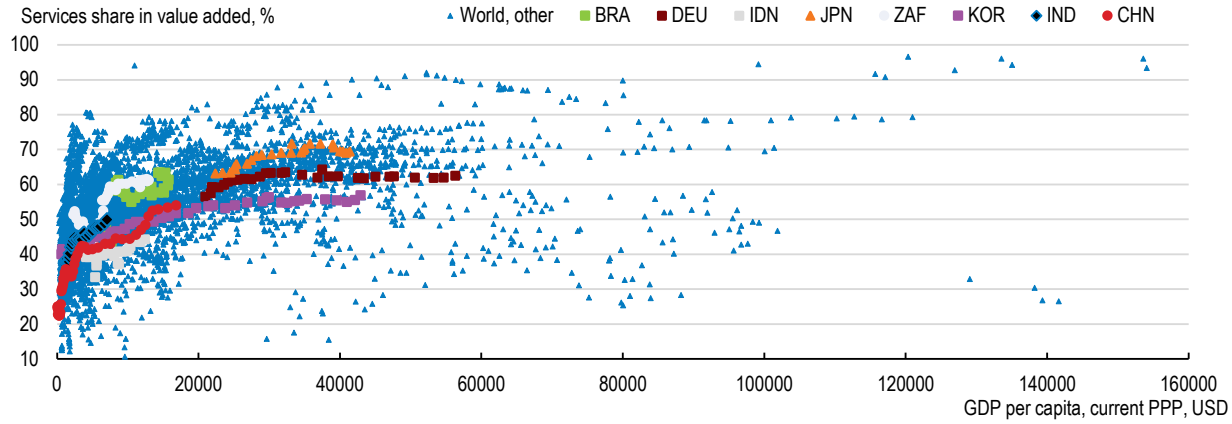
The rebalancing process from manufacturing to services had also paused as restrictions on the physical movement of people and distancing regulations affected services industries to a greater extent. As services recover, the rebalancing process will likely continue. Prior to the outbreak, the share of services in GDP increased significantly, but there is still ample room to catch up with advanced country shares (Figure 1.23). Even in advanced manufacturing economies, the share of services is above 60%. The business tax-VAT conversion over the past decade was an important step in putting services industries on a more equal footing with manufacturing industries. As a result of those reforms, now service providers can also get the VAT refunded on their inputs and all producers can get a VAT refund on their services inputs. Nevertheless, in some other aspects, services industries remain more restricted. Administrative monopolies are more common in services and entry and conduct are also more restricted than in manufacturing as discussed in the next chapter on regulation in product markets. To reignite the rebalancing process towards services, such restrictions should be eased. Accelerating the liberalisation of services would provide a strong base for long-term sustainable growth.

Figure 1.23. The services share is increasing as China is getting richer



Note: All countries and all years available. For the highlighted countries: 1970-2019 for China, Korea and South Africa, 1990-2019 for Brazil, Indonesia and India, 1991-2019 for Germany and 1994-2019 for Japan.
Source: World Bank World Development Indicators database.

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The large-scale move of rural residents to urban areas has also paused as migrant workers who were laid off returned to the countryside. Targets of the New Urbanisation Plan, namely providing urban residential status to 100 million people was completed ahead of schedule, in 2019 (vs. 2020, the original deadline). At end-2020, the urbanisation rate reached 45.4%, an 9.5 percentage point increase in seven years. Accelerated *hukou* reforms, in particular granting equal access to education and healthcare to migrant workers in cities, would encourage more rural people to move to cities. Rebalancing from investment to consumption and from manufacturing to services as well as rural people's moving to urban areas should resume as soon as the impacts of the pandemic subside as they are key ingredients to sustainable and inclusive growth.

Economic security measures have been featuring in major planning documents and continue to do so in the most recent ones as an ingredient of sustainable development. They include food, energy and technology. When the measures to guarantee availability of those are chosen, they should not conflict with other targets such as further opening up the economy. In some cases, for instance, a renewed emphasis on energy security redirected focus to exploration of domestic oil and gas fields and led to easier access for foreign investors (i.e. joint venture is no longer required). It should be ensured that increased emphasis on security in other areas does not lead to decreased openness and a waste of public funds.

Revamping the social security system for greater inclusiveness and sustainability

High-quality growth needs to be more consumption driven. Consumption, in turn, could be sustainably boosted only by reducing the need for people to save for old-age security, health and education, by providing a better quality of public services nationwide and equally importantly, by accelerating urbanisation (i.e. providing urban residential rights to migrant workers and moving people from rural to urban areas), which can unleash the consumption potential (Molnar, Chalaux and Ren, 2017[5]) should feel secure in the case of losing employment or in-between changing jobs if they are covered by unemployment insurance. Currently, it is mainly urban employees who are covered by unemployment insurance, employees of private enterprises and migrant workers to a much lesser extent. The coverage rate is 25% of the labour force. It should be extended to the entire labour force to reduce saving motives for the case of losing employment.

China has a relatively long life expectancy for its income level and a very short working life. Progressively raising the retirement age is finally decided and is set to be a major task for the 14th Five Year Plan started in 2021. Currently, men retire at 60, white-collar women at 55 and blue-collar women at 50. Notwithstanding

the rapid rise in the expected life span in the previous decades, the retirement age was not touched for nearly 70 years. The retirement age should be the same for men and women, should be linked to life expectancy and should be phased in fairly quickly to cope with rapid population ageing. In addition, a long-term care insurance system should be adopted countrywide. Recent release of the 2020 population census data indicate that the measures to partially relax birth control policies did not reverse the rapid aging of the population and thus the remaining controls should also be abolished.

The raising of the retirement age will be key for pension system sustainability, but other parameters, such as the high replacement rate for urban employee pensions and the low ones for urban and rural residents should also change. The coverage rate at over 90% of the above-16 population not in education in 2019 needs to increase further. Currently the holes are filled by social assistance programmes, over 14% of the above-60 population receives government pension as part of social assistance programmes. The pension system could be more redistributive. Low-income earners contribute according to 60% of the average wage and high-income earners according to three times of it. The floor for contributions should be abolished and the cap raised.

The general features of the health system, such as under-resourcing, uneven geographical distribution of resources, especially of high quality resources, high out-of-pocket share of healthcare costs, limited availability of intensive care units, the level of efficiency of the emergency response system and other factors had a bearing on the outcome of the COVID-19 outbreak. Those features will also determine the system's capability to make growth more inclusive and sustainable. Health insurance coverage is high at above 95%, but the reimbursement rate is relatively low and even lower outside of the place of household registration.

The currently segmented social insurance system across the types of employees and across regions should be unified. Unemployment insurance administered by over 700 jurisdictions should be pooled and extended to all employees. The first target is pooling at the province level. Pension administration is now required to be unified at the province level, though contribution rates by employers still vary somewhat, with some cities such as Dongguan in Guangdong and also in Zhejiang gradually raising their rates to the statutory level. This process, however, has paused due to pandemic-related support policies such as reduced social security contribution rates, which have now been extended till end-April 2022. Pensions should be pooled at the national level to avoid deficits in ageing provinces and surpluses in ones with young populations. More importantly, portability of social insurances across regions should be smooth without penalty for receiving services outside of one's registered hometown.

Table 1.6. Past OECD recommendations to increase inclusiveness

Recommendation	Actions taken since the 2019 OECD Economic Survey
Distribute more evenly high-quality education and health resources to reduce incentives to move to mega-cities.	In April 2020, the Guiding Opinion on strengthening teaching staff in the new era was issued, which encourages rotation of teachers within counties.
Gradually ease restriction on access to public services for *non-hukou* holders and delink it from the *hukou*.	The National Development and Reform Commission issued a Notice in April 2020 (Fagai Guihua No. 2020/532) encouraging cities with urban residents below three million to abolish household registration restrictions altogether and cities with over three million inhabitants to largely abolish restrictions for major groups such as people with stable employment in the city or rural residents moving to cities with the purpose of studying or joining the army. The Notice also urges cities to provide the same public services for residents without a *hukou* in their jurisdictions. Mega cities remain an exception.
Abolish the floor and raise the ceiling for social security contributions.	No action taken.
Expand the coverage of early childhood education institutions and enrolment in rural areas.	According to the 2019 education sector report, the number of private kindergartens increased by 4.5% and the number of children enrolled by 0.37% in that year.

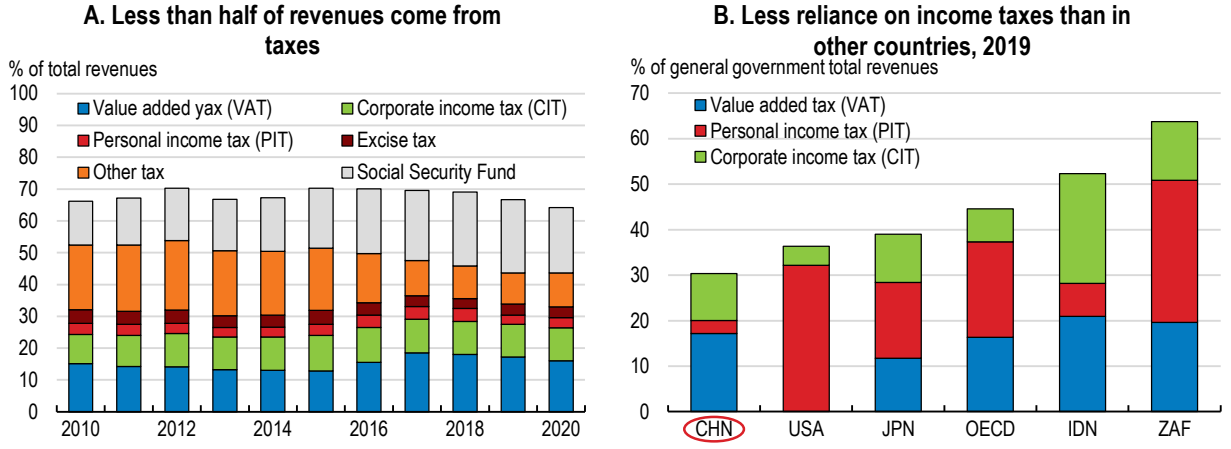
Increase the number of qualified teaching and medical staff in rural areas by more effectively rotating good quality staff. For instance, the required period spent in rural areas could increase to a week or a month at a time instead of a day to reach more remote regions.	In July 2020, the Guiding Opinion on strengthening rural teaching staff in the new era was issued, which encourages rotation of teachers within counties. The Opinion requires minimum three years in rural areas as a condition to become a school director. Newly hired teaching staff in villages will be transferred to the county seat within five years. The Opinion on revitalising rural human capital issued in February 2021 exempts college graduates from taking an exam when registering as village doctor.
Create suburban rail networks to allow for a better integration of rural regions nearby cities. Increase and improve rural roads to integrate such areas into commercial networks and enable commuting for work to cities.	Inter-city rails are a priority infrastructure target in the 14th Five Year Plan.
Unify the pension system at the national level to ensure portability of pensions and improve financial sustainability of the system.	Pension funds have been unified at the province level, the next step is unification at the national level. COVID-related reduced contribution rates adversely affect financial sustainability of the system.

More taxes and greater profits from SOEs could boost public revenues

Given medium- to long-term spending pressures stemming from ageing of the population and greater demand for social security as well as infrastructure needs in environmental facilities, renewable energy, urban transit systems and underground structures, to finance those, revenue sources need to be boosted. More funds should be channelled also to education and healthcare. Some of that spending could also be financed by leaving parts of investment projects for the private sector and by efficiency gains, but given the current low revenue levels, those are unlikely to be sufficient.

As a result of both the generous tax exemptions in recent years and non-tax revenues (with land lease-related revenues being a major item) growing faster, the share of taxes in total revenues declined by over five percentage points in the past five years to around 44% in 2019 (Figure 1.24). Tax revenues hardly reach 20% of GDP, while in advanced OECD economies this ratio is often the double of that. China relies mostly on indirect taxes, in particular the VAT, though the VAT's share in total revenues is roughly the same as that in OECD countries. In contrast to OECD countries and some other major non-members, income taxes are not a large source of revenue.

Figure 1.24. Taxes represent a small and falling share of government revenues



Note: Total revenue includes revenues in the general, fund, social security and state-owned capital management accounts.
Source: CEIC and OECD Revenue Statistics databases.

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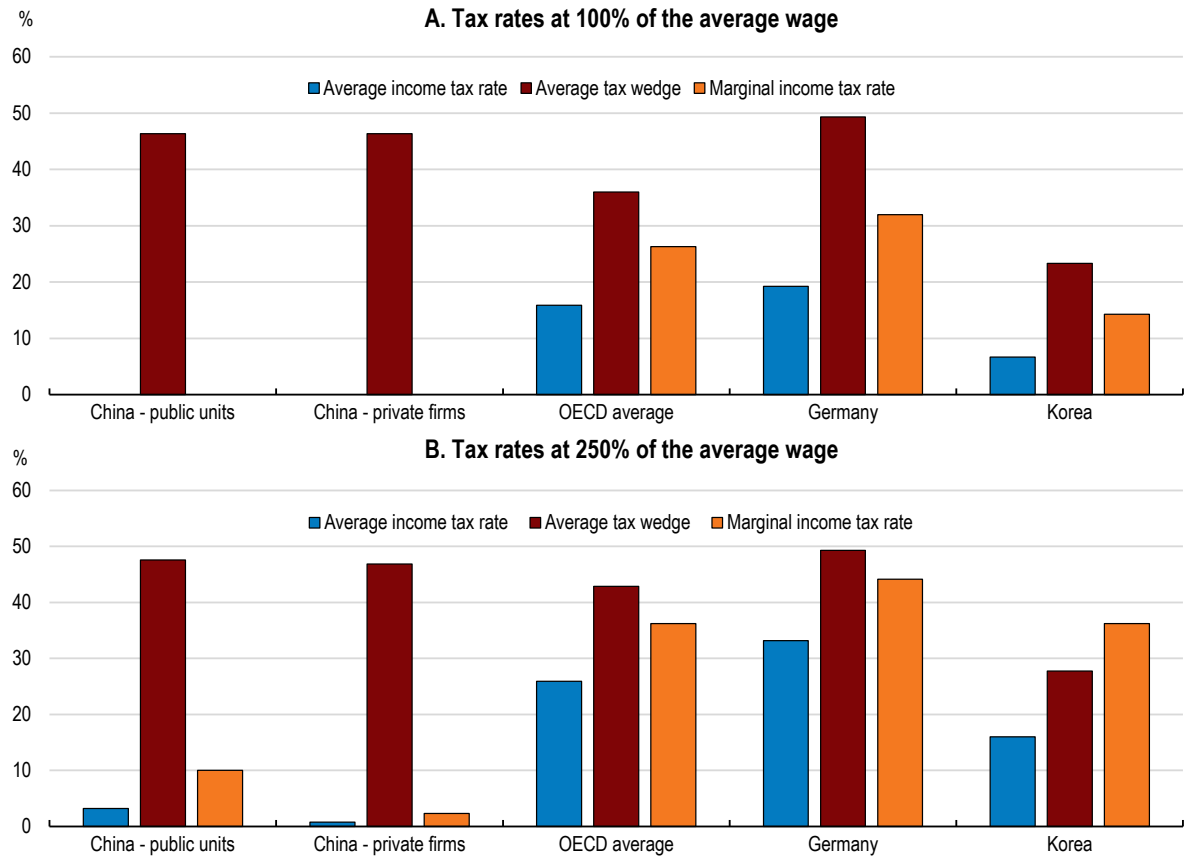
In particular, the share of personal income taxes is lower than in OECD countries and the 2018 tax reform reinforced this trend by exempting even average income earners from paying income taxes by raising the personal allowance. Following the reforms, reportedly only 4.6% of the population paid personal income

taxes. Moreover, those who do, pay at very low rates. Private sector employees, for instance, start paying personal income taxes only at a wage 250% of the national average and even at this level they pay less than 1%. Earlier Economic Surveys recommended to widen the personal income tax base and to make it more progressive for high earnings by, for instance, abolishing the deductions such as mortgage payments that can now be deducted. Once the recovery is well established and the virus outbreak is firmly under control, such tax reform could secure a stable source of fiscal revenue and would reduce income disparities.

Figure 1.25. Few pay income taxes and at low rates

Income tax profiles of single earners at various incomes, 2019



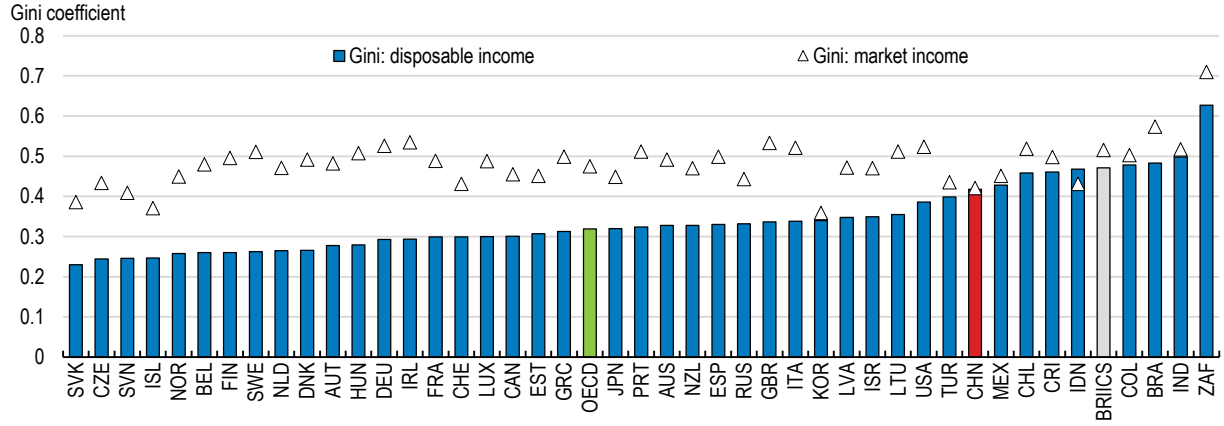
Note: The tax wedge includes social security contributions by both employers and employees. Calculations for China were based on the 2018 personal income tax reforms. Tax rates at 250% of the average wage and marginal income tax rates are as of 2017.
Source: OECD Taxing wages database for OECD countries and OECD calculations based on the Amendment to the Personal Income Tax Law passed by the 5th meeting of the 13th Congress of the NPP Standing Committee on 31 August 2018 and National Bureau of Statistics data.

StatLink https://stat.link/okj3f9

The current tax and transfer system does little in reducing income inequalities (Figure 1.26) which are the greatest in the urban-rural dimension. According to the 2018 vintage of the China Household Income Project (CHIP), 81.3% of high-income people are urban residents, while only 3.3% are rural (the remaining are migrant workers) and only 0.3% of the rural population are categorised as high income in contrast to 4.9% of the urban. Regional disparities are also significant: 70% of high-income people live in the east with roughly the same 15-15% in the centre and west of the country. Accelerating hukou reforms granting the same access for migrant workers to public services and a more equitable distribution of high-quality resources across the country would be key to reducing inequalities between urban and rural and across regions.

Figure 1.26. The tax and transfer system is not very effective in reducing disposable income inequalities

2019

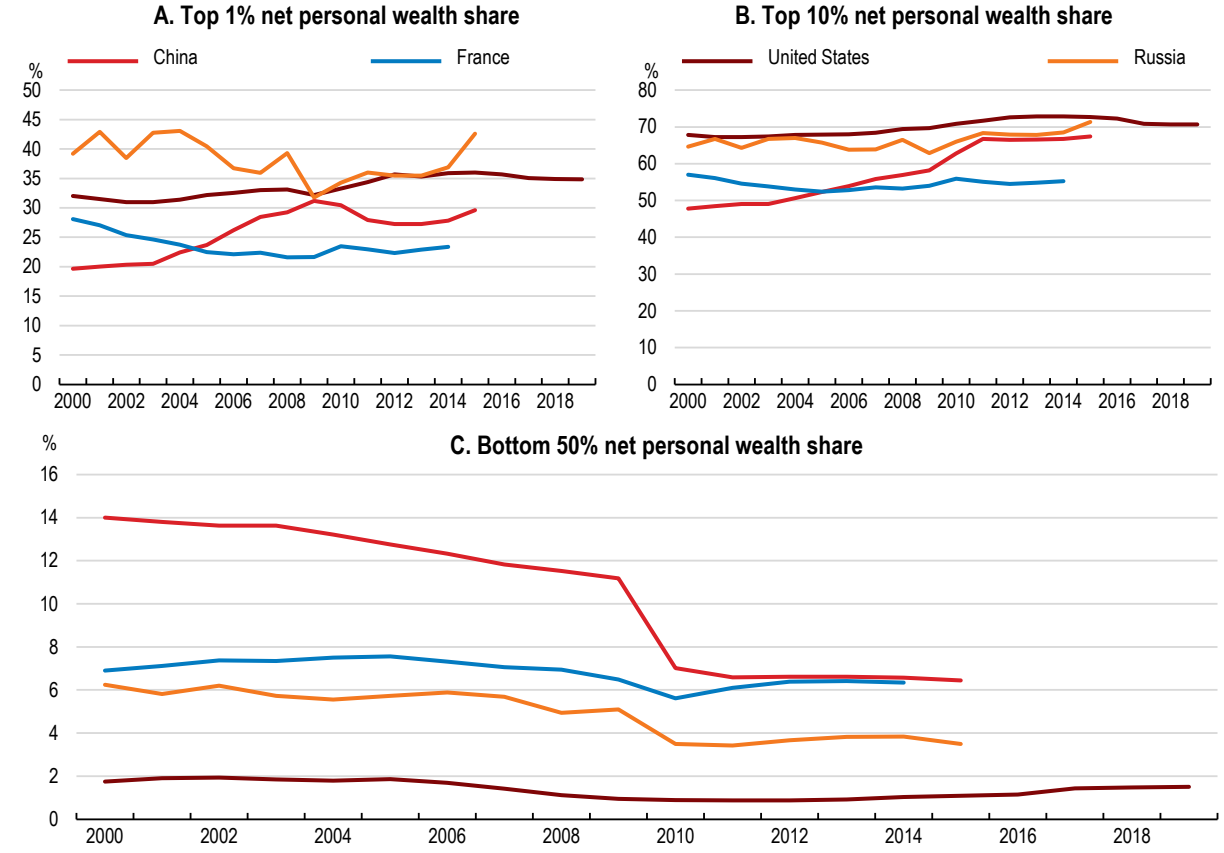


Source: Standardized World Income Inequality Database v9.1 (Solt 2021).

StatLink https://stat.link/twohbs

Wealth inequalities are similarly high: the top 10% holds two-thirds of net personal wealth, close to the shares in Russia or the United States (Figure 1.27).

Figure 1.27. The richest people hold a high share of net personal wealth



Source: World Inequality Database.

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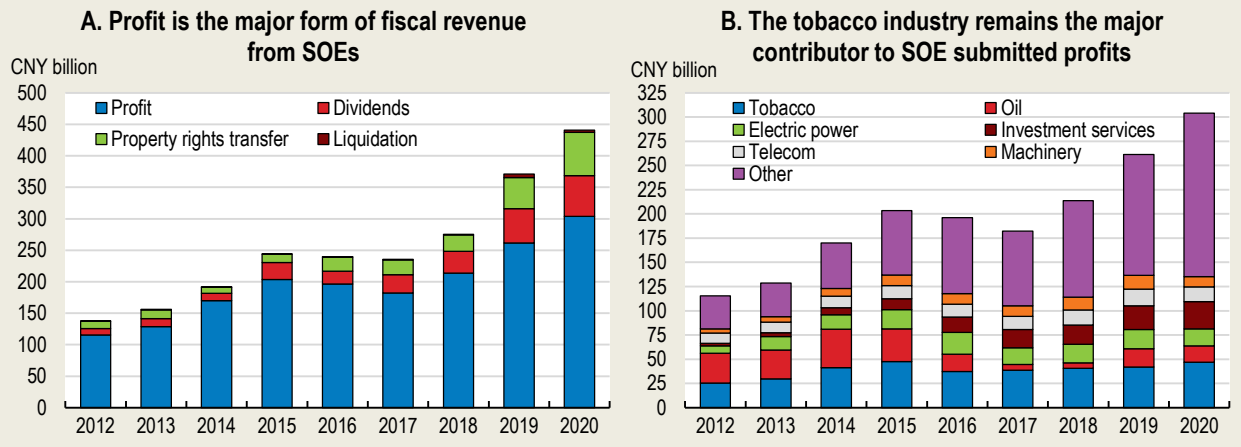
In addition, a recurrent tax on the ownership of real estate and inheritance taxes would help reducing wealth inequalities, which are high. Roughly three-quarters of household wealth is held in real estate, thus a tax on the ownership of real estate would be more effective in reducing wealth inequalities than taxes on dividends and capital gains levied at the shareholder level. Real estate taxes on the ownership of property are among the least distortive tax types and in many OECD countries are a stable source of revenues.

A major potential source of government revenues is profits from state-owned enterprises. SOE-related revenues are recorded in the state-owned capital management account (one of the four budgetary accounts) and most of such revenues in the past had been recycled to SOEs. In recent years, the share and amount of SOE profits that must be submitted to the government budget has been increasing (Box 1.5). This submission rate varies by sector, but the highest rate has reached the target 30%. SOE-related fiscal revenues should increase, in particular for financial institutions that were exempt from submission of profits for many years.

Box 1.5. What is the major source of SOE-related fiscal revenues in the state-owned capital management account and where are they spent?

Nearly 70% of SOE-related fiscal revenues in the state-owned capital management account are from SOE profits (Figure 1.28). Dividends and property transfers each make up over 10%, while the share of liquidation-related revenues is small. The tobacco industry, a state monopoly, became the largest contributor of SOE profits to the budget in the past five years. Submissions by oil and telecommunications companies, utilities and investment service firms are also significant. The jump of SOE-related revenues in 2019 can partly be explained by having reached the targeted maximum profit submission rates and partly by high profits.

Figure 1.28. SOE-related fiscal revenue is mainly from profits and continues to rely on the tobacco industry to the greatest extent



Note: SOE-related revenues are recorded in the state-owned capital management account, one of the four budget accounts.
Source: Ministry of Finance.

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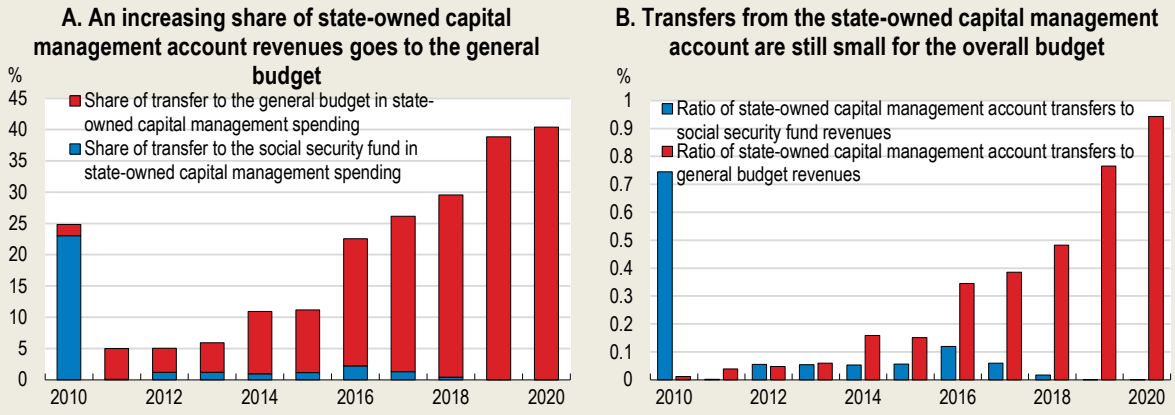
Until very recently, most of SOE-related revenues have been recycled back to SOEs in the form of, for instance, structural adjustment support or environmental protection subsidies. Part of SOE-related revenues in the state-owned capital management account have been transferred to other accounts, namely the general budget account and the social security funds account, to replenish the social security funds and to support general public spending. In 2020, over 40% of SOE-related revenues in the state-owned capital

management account were transferred to the general budget account and smaller shares of funds have also been transferred to the social security funds (Figure 1.29). However, from the perspective of those two accounts, those transfers were very small. This is due to the small size of the state-owned capital management account itself.

Another way ordinary citizens benefit from SOE profits is through share transfers to the social security fund. In the end of 2020, shares in 93 central SOEs, including financial institutions worth around 1.7% of GDP were transferred to the national social security fund. Local SOEs are also transferring shares to local social security funds, starting with pilot schemes in Zhejiang and Yunnan.

Figure 1.29. An increasing share of SOE-related revenues from the state-owned capital management account goes to fund general spending, but their overall size is small



Note: SOE-related revenues are recorded in the state-owned capital management account, one of the four budget accounts.
Source: Ministry of Finance.

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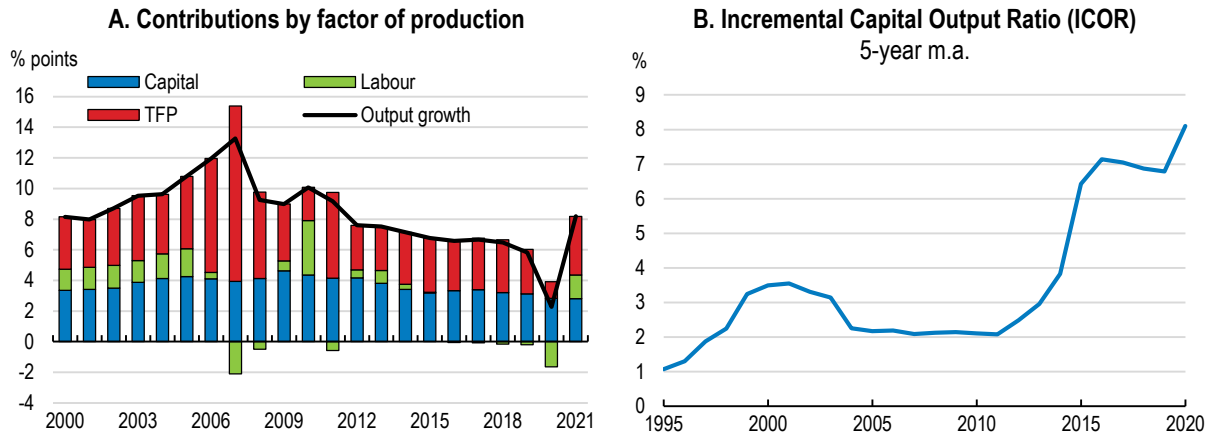
Growth should be more productivity-driven to be sustainable

Capital accumulation remains the major driver of growth with a somewhat smaller contribution by multi-factor productivity (Figure 1.30). Investment efficiency (measured by the incremental capital-output ratio) started deteriorating again, though as the share of infrastructure investment is expected to increase, efficiency increases are expected to follow. The high value for the incremental capital-output ratio indicates that a large amount of investment is needed to produce a unit of output and that returns on capital are lower than in the past. Also, given that investment is still needed in many areas, such as environmental facilities, suburban railways and underground structures, the low investment efficiency may also indicate that it is not channelled to where it would be needed. In addition, the share of private investment in the total decreased by 8-9 percentage points over the past five years to around 56%, also raising allocative efficiency concerns. Rigorous cost-benefit analysis would help avoid investing in unviable projects and thereby improve capital allocation efficiency. Also, greater private access to infrastructure investment projects would work in that direction. That could be done by requiring splitting the tenders by process or stage where possible, as discussed in the chapter on product market reforms in the Survey. The partial relaxation of the one-child policy may only have a limited impact on the size of the labour force and only in the long run. Growth needs to be driven by productivity to a greater extent to be sustainable.

Figure 1.30. Capital accumulation continues to drive growth and investment efficiency stopped falling



Note: Investment efficiency is measured by the incremental capital-output ratio (ICOR), i.e. the amount of capital needed per extra unit of output, expressed as a ratio. It is calculated as a ratio of the investment rate and the change in GDP. Higher values of the indicator mean lower efficiency. MA refers to moving average. 2020 investment is a preliminary estimate.
Source: Panel A: Conference Board Total Economy Database, Panel B: OECD calculations based on CEIC database.

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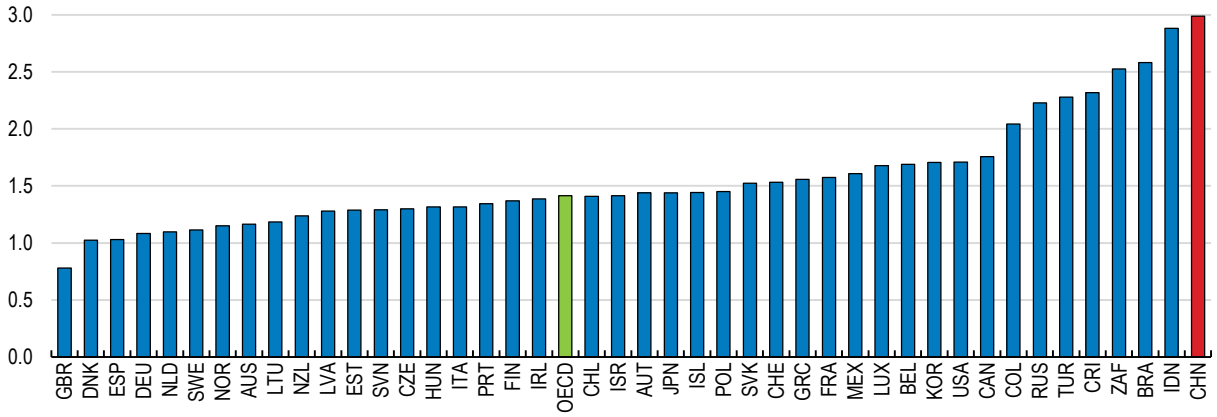
Product market regulation is an area, where stepping up of reforms could bring about tangible productivity gains. According to the OECD Product Market Regulation (PMR) indicators, the level of restrictions in China's product markets are higher than in OECD Member countries and major emerging economies (Figure 1.31). It should be noted that the high value on the overall PMR indicator is related to the high weight of public ownership in the indicator as well as to the lack of certain practices in China, such as a regulatory impact assessment defined by OECD standards and regulation of lobbying defined by OECD criteria.

Figure 1.31. The overall Product Market Regulation indicator is higher than in other countries

Product Market Regulation indicators overall index, 2018



Note: Data for the United States refer to January 2021, for China and Indonesia refer to 2020 and for Costa Rica and Estonia to 2019. Values of the indicator vary between 0 and 6 with a higher value indicating greater restriction.
Source: OECD Product Market Regulation database.

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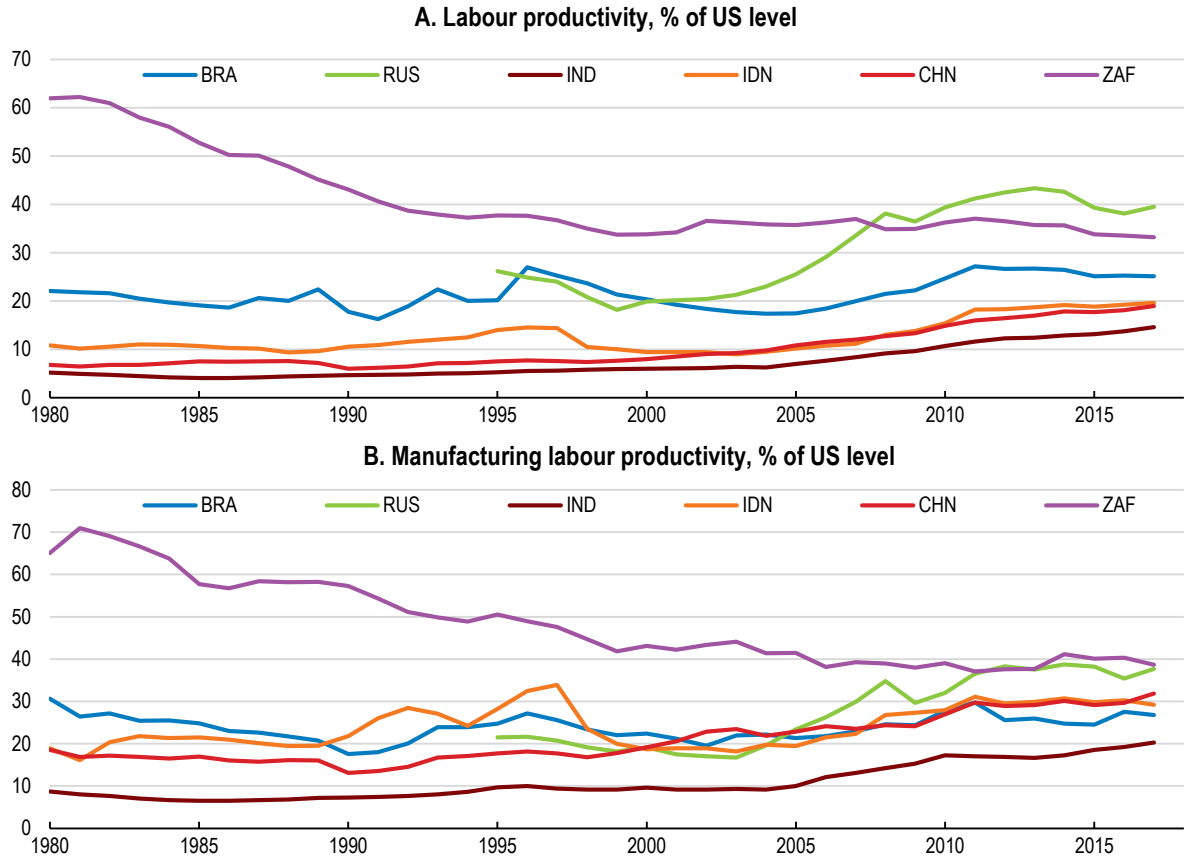
Labour productivity is increasing, but as of 2018, it was still 20% of that of the United States, about the same as Indonesia's and half of Russia's (Figure 1.32). The manufacturing labour productivity gap vis-à-vis the United States is smaller, again, similar to Indonesia's, but greater than Russia's or South Africa's. On-going automation and digitalisation will likely speed up the catching up process, but also education attainment needs to increase (Figure 1.33). A more equitable distribution of high-quality education resources would help raising education attainment in rural areas. As the 2019 Economic Survey recommended, the financing of basic public services, such as education, should be centralised. Moreover, the current rotation schemes should be lengthened so that urban teachers can reach more inland areas to raise the quality of education there.

Figure 1.32. Catching up with the United States has been rapid but the productivity gap is still large



Note: Panel A: 2019 price levels with 2016 PPPs, Panel B: local currency manufacturing value added is converted to USD using 2011 manufacturing PPPs.

Source: Panel B: Dieppe, A., and H. Matsuoka. 2020. "Sectoral Sources of Productivity Growth" in Global Productivity: Trends, Drivers, and Policies, ed. A. Dieppe. Washington, DC: World Bank. World Bank Global Productivity Aggregate and Sectoral Databases.

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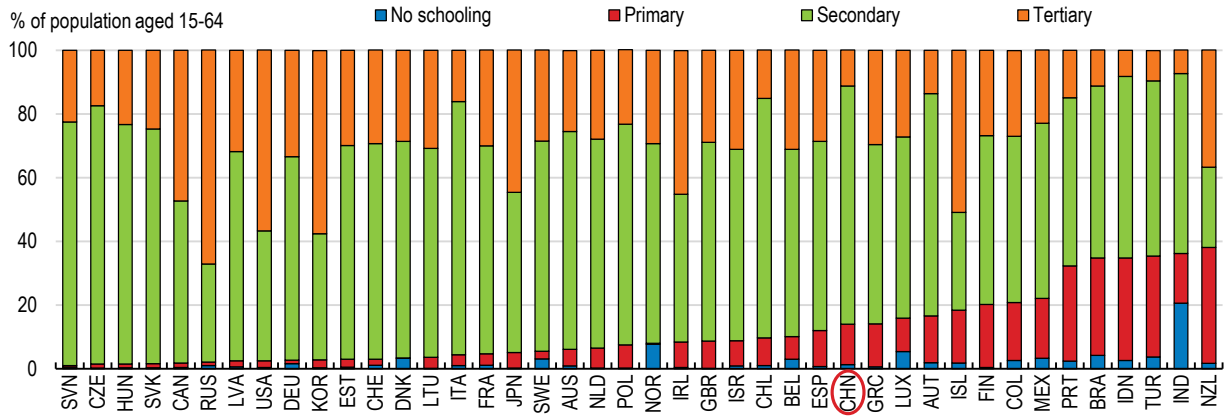
Figure 1.33. Education attainment needs to be raised

Highest educational attainment of 15-64 year-olds (2020)



Source: Barro-Lee Educational Attainment dataset available at https://scholar.harvard.edu/barro/data_sets.

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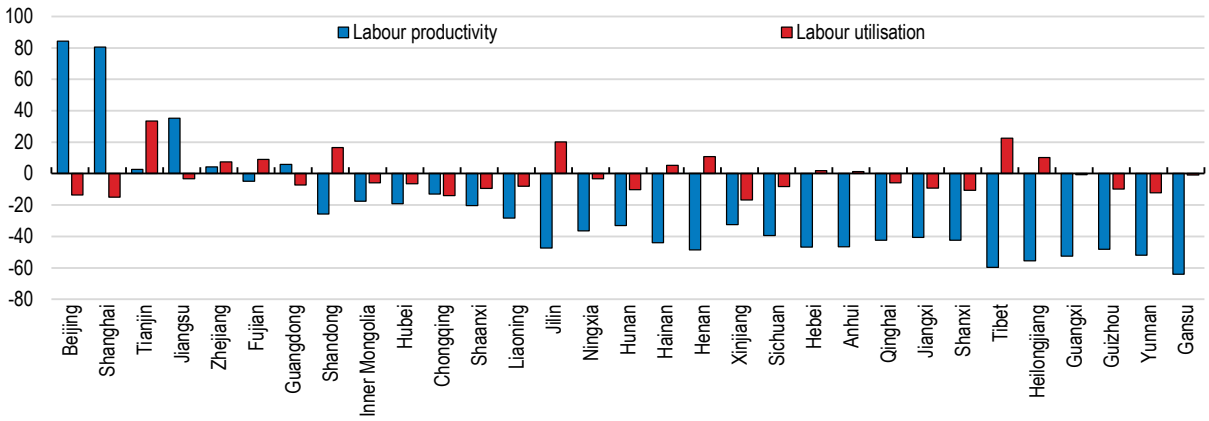
At the regional level, the gap to the upper half of provinces in terms of GDP per capita is related to lagging labour productivity (Figure 1.34). The labour productivity gap can be as high as over 50% in some western provinces such as Gansu, Guangxi or Yunnan as well as in Heilongjiang in the northeast.

2020 was an unusual year also in the sense that there was no GDP target. Abolishing the GDP targets for good would provide an opportunity to focus on the quality of growth instead of the numerical target. Experience during previous years without a GDP target (which were 2000, 2001 and 2002) shows that important structural reforms can take place when there is no target as there is no need to worry about the potentially negative short-term GDP impact.

Figure 1.34. The GDP gap is related to lagging labour productivity in most provinces, 2018

Gap to the upper half of provinces in terms of GDP per capita



Note: For the calculation of GDP per capita, the long-term resident population is used. The sum of the percentage difference in labour utilisation and labour productivity do not add up exactly to the GDP per capita difference since the decomposition is multiplicative. Labour productivity is measured as GDP per employed person. Labour utilisation is measured as total employment per capita.
Source: OECD calculations based on the CEIC database.

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Table 1.7. Past OECD recommendations to enhance economic efficiency

Recommendation	Actions taken since the 2019 OECD Economic Survey
Continue lowering import tariffs and dismantle non-tariff barriers.	MFN import tariffs have been reduced four times since the onset of the trade conflicts with the United States, cumulatively by 2.3 percentage points to 7.5% as of end-2020. However, bilateral punitive tariffs remain in place with the United States and Australia.
Dismantle restrictions on the entry and conduct of foreign firms, in particular requirements to form joint venture or transfer technology.	From 2020, entry and joint venture restrictions to several industries, including finance have been eased. Forced transfer of technology is explicitly prohibited.
Make public procurement more transparent and open it to all players. Subject all purchases above the defined threshold to the government procurement procedure and raise penalties for non-compliers to deterring levels. Purchases below the threshold should also be done in a transparent way.	Negotiations to join the WTO's GPA are ongoing.
Strengthen intellectual property protection by more systematically prosecuting violators and raising fees.	In November 2019, the Communist Party of China Central Committee and the State Council jointly issued a directive entitled "The Guideline on Strengthening Intellectual Property Rights Protection" requiring to set up punitive damage compensation system for IP infringement to further beef up IP protection and ensure the IP right is under stronger protection. In December 2020, the Supreme People's Procuratorate initiated a pilot in six province-level regions: in the process of handling criminal cases of infringement of IPR, the public prosecutor should inform the obligee of the 12 litigation rights he or she enjoys during the examination and prosecution stages. In December 2020, a draft revision to the Patent Law (effective from 1 June 2021) raised fines to a range of CNY 30,000 (USD 4,700) to CNY 5 million when the loss to patent holders and the benefits gained by violators cannot be determined. The current range is CNY 10,000 to CNY 1 million. The draft was submitted to the Standing Committee of the National People's Congress, for first review. The recent amendment to the Copyright Law coming into force on 1 June 2021 drastically raised the ceiling for statutory damages.
Enhance transparency and accountability and reduce the concentration of power in managers' hands. Sign up to the OECD Anti-Bribery Convention.	No action taken.
Adhere to the OECD Declaration on International Investment and Multilateral Enterprises and Chinese companies operating overseas should follow the OECD Guidelines on Multinational Enterprises in their business conduct. Infrastructure projects should be subject to thorough cost-benefit analysis and take into account the indebtedness of the recipient country.	No action taken.
Improve the quality, coverage and timeliness of data releases, in particular basic National Accounts and fiscal data and follow international standards. Data should also be published in real terms on a timely basis.	January data are no longer released for several series such as international trade and fiscal revenues and spending.
Gradually remove implicit guarantees to state-owned enterprises and other public entities by allowing them to default. Apply the competitive neutrality principle when dealing with SOEs.	The number of defaulting SOEs has increased, in particular at the local level and among those controlled by central government agencies.
Reduce state ownership in commercially oriented non-strategic sectors.	The Opinion on improving the distribution and adjusting the structure of the state-owned economy issued in November 2020 requires SOEs to exit non-main and non-competitive activities.
Strengthen the rule of law and restrict the power of administrative departments to prevent the creation of administrative monopolies.	Article 9 of the draft amendment of the Anti-Monopoly Law includes the Fair Competition Review Mechanism and requires the streamlining of administrative action by government departments and preventing anti-competition behaviour.
Provide clear and detailed implementation rules to limit the discretionary power of implementing departments. Specify deadlines for administrative bodies to perform their duties and impose penalties for delay.	The Guiding Opinion issued by the State Administration for Market Regulation in January 2020 specifies discretionary power of regulatory authorities in administrative cases.
Define a mechanism through which administrative monopolies could be broken with potential sanctions for administrative bodies not complying. Strengthen the independence of anti-monopoly enforcement, make it more rule based and enhance its transparency.	Data releases on anti-monopoly enforcement have increased.

Remove the heavy burden for the plaintiff to prove abuse of power by administrative departments.	The Supreme Court interpretation document of administrative cases issued in February 2018 specifies exceptions where the plaintiff does not have to prove abuse of power by administrative departments. These include cases where the defendant makes it impossible for the plaintiff to provide evidence or where the property damage resulting from the behaviour of the defendant cannot be determined.
Strengthen whistle-blower protection to uncover and rectify more cases of protectionist behaviour.	The rules issued by the State Administration for market Regulation in November 2019 advocate the strengthening of whistle-blower protection.
Subject tender documents to the review of competition authorities to avoid any potential competition-hindering clause.	No action taken.
Ensure technology neutrality of environmental and other services to promote innovation and competitive markets.	No action taken.

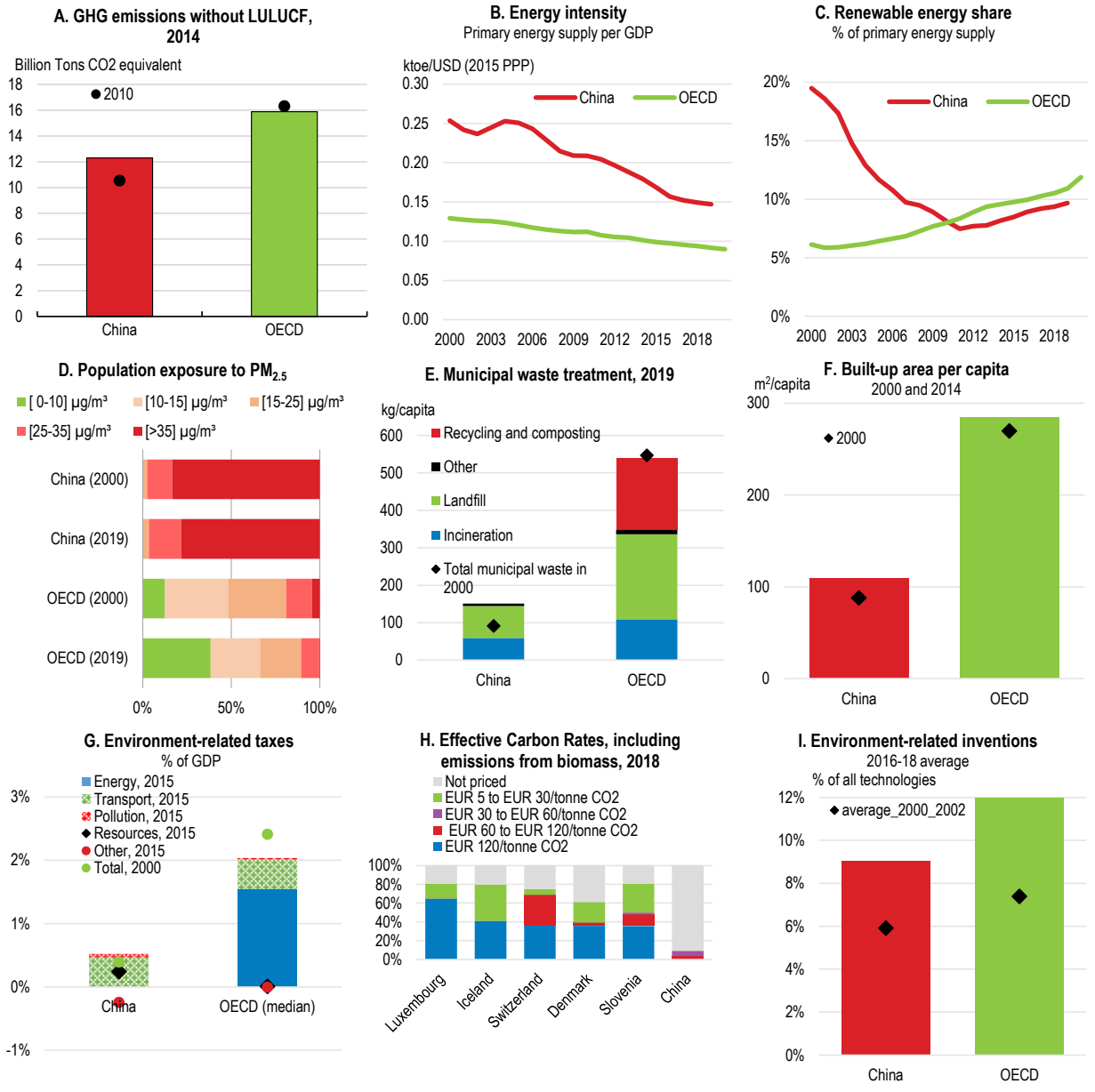
Reigniting the energy transition to achieve climate change goals

COVID-19 has set back several ongoing processes to shift the economy to a more sustainable path, including energy transition. Before the outbreak, China was on the twin path of falling energy intensity and increasing use of renewables (Figure 1.35), though greenhouse gas (GHG) emissions had still been increasing due to rapid growth in overall energy demand. The composition of fiscal stimulus aimed at reviving the economy is heavily tilted towards infrastructure investment, implying greater energy intensity. This risks halting a 15-year trend, during which China's energy intensity dropped 42%, and could make it harder for China to achieve its long-run goals.

The Chinese government committed in September 2020 to reach net zero carbon emissions by 2060. According to the International Energy Agency's scenario, this would be done by increasing the share of renewables, reducing energy intensity and boosting the share of nuclear energy (IEA, 2020[6]). The process would involve multiplying current renewables' capacity several folds. Given that both solar and wind energy generation are becoming self-sustaining, not needing government subsidies, boosting capacity would be feasible. Another complication is the need to transport wind or solar energy generated in the west of the country to the east where most demand is concentrated. Reducing energy intensity is a challenge with the current industry structure, hence a greater emphasis on promoting low-carbon activities is needed. The Energy Research Institute of the Academy of Macroeconomic Research of the National Development and Reform Commission and the China National Renewable Energy Centre estimate that to achieve the Paris Agreement goal of reducing global warming to below 2 degrees Celsius by 2050 China would have to reduce carbon emissions to a quarter of the 2018 level and boost the share of renewables in total energy supply to 58% by that year (from 8% in 2018) (Energy Research Institute and China National Renewable Energy Centre, 2019[7]).

China's new climate commitments are encouraging, but more could be done. On the fifth anniversary of the Paris Agreement in late 2020, the government announced plans to increase the share of non-fossil fuels in primary energy consumption to 25% by 2030 vs. the earlier commitment of 20% (and the current level of ca. 15%). This will mean robust investment in renewable energy in the coming decade mostly in wind and solar with targeted capacity of 1.2 billion kW in the same year, tripling the 2019 0.4 billion kW. However, this time the mushrooming of small-scale, inefficient wind power stations, some without connection to the grid, should be avoided. Equally important is the phasing out of fossil fuels. The construction of coal-fired power plants should be halted, as the 2019 Economic Survey recommended. If new electricity demand (by 2060 it is likely to more than double) is provided by renewables, solar power production would need to increase 16-fold and that of wind power 9-fold (Mallapaty, 2020[8]). To replace coal, nuclear energy output would need to increase 6-fold and hydro energy output double. The remaining 16% of coal, oil and gas production would need to be offset by carbon capture technologies and forestation. These ambitions would need a full revamp of the current system and massive investments in renewables. Furthermore, environmental regulations should be rigorously enforced and fines for violators raised to deterring levels. Environmental taxes generate little revenue. Diesel is taxed at a lower rate than petrol, even though its environmental impact is greater. Environmental taxes should be raised, especially on fossil fuels.

Figure 1.35. Room remains for greening growth



Source: OECD Green Growth Indicators database.

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China has committed to reduce carbon emission per unit of GDP by 65% by 2030 relative to the 2005 level, vs. the previous commitment of 60-65%. The new 14th Five Year Plan will provide more details. Key to climate goals such as peaking emissions in 2030 and cutting to net zero by 2060 is the launch of the national carbon market, effective from 1 February 2021. In its initial stage, the national emissions trading system covers the power sector, which accounts for about 30% of emissions. Among the 2225 companies that are the initial participants, there are also a few steel companies and by 2025 their number will quadruple, including more steel as well as petrochemical and non-ferrous metals producers. As the setting up procedure may take months before trading can start, it is too early to say how effective it is. The New Energy Vehicle Development Plan 2021-35 will also aid the efforts to reduce emissions. It aims at a 20% share for new energy vehicles by 2025, and a dominating share by 2035. New energy vehicles will also be more energy efficient, consuming 12 KWh per 100 km by 2035.

Air pollution continues to take a heavy toll on human lives. As a by-product of swift investment and industry-driven rebound, pollution intensity also recovered to pre-COVID-19 levels, prompting several localities to order temporary halt of production in polluting industries. Air quality is an essential ingredient of the quality of life and is positively associated with happiness. Moreover, people are willing to pay for better air quality, it is estimated that for one unit of improvement in the air quality index, an average family is willing to pay nearly CNY 550 (or 0.90% of annual household income) per year (Liu et al., 2020[9]). There is large variation in the willingness to pay for air quality: those who are more sensitive to pollution show higher willingness to pay for better air quality. Vulnerable groups such as people living in more polluted areas are also willing to pay more and so are those who are more educated and those viewing society as equal. Another study estimates that a household is willing to pay USD1.34 annually to remove 1 mg/m3 of air pollution (PM10) (Ito and Zhang, 2020[10]).

Table 1.8. Past OECD recommendations on greening growth

Recommendation	Actions taken since the 2019 OECD Economic Survey
Enforce regulations more strictly, raise fines for polluters, and raise environmental tax, in particular on fossil fuels.	At end-January 2021, the central environmental inspection group released a report with the details of its actions indicating strengthening enforcement and steepening fines. No action on the environmental tax.
Halt the construction of coal-fired power plants.	The end-January 2021 report by the central environmental inspection group indicates that in the three provinces inspected, coal production capacity was 30% above environmental assessment-approved capacity and the lack of control of building new power plants led to increased coal power installed capacity even in coastal provinces.
Increase investment in pollution treatment facilities and environmental infrastructure, in particular urban water treatment and environmentally harmless rural sanitary facilities.	According to the 2016-19 Ecological and Environmental Statistics Report, investment in the treatment of industrial wastewater increased in 2019.

The public health emergency reporting and prevention system are in need of improvement

In China's public health emergency reporting system, the local centres for disease control (CDCs) are under the local government and with the latter's agreement, report to the central CDC. This reporting system was streamlined as a result of the SARS epidemic in 2002-03 to facilitate faster emergency response (WHO, 2020[11]) and the Regulations for Public Health Emergency were issued in May 2003 (State Council Order No. 376). Awareness with regard to the regulations needs to be raised and enforcement improved to make it an effective tool. In particular, the within-2-hour reporting obligation counting from observation of a potential public emergency situation should be strictly followed. Also, as long as the local government is in a position to control information flows and as long as it is in its interest to hide certain types of information, the functioning of the system may be impaired. To overcome the disincentives for local government officials to report serious illnesses in fear of a negative impact on their career or being blamed for creating rumours, local CDCs should be directly controlled by the central CDC. The current fragmented system could be centralised to make emergency response faster and more effective. The decision to assess and interpret contagious disease-related information should lie at the central level. Public spending on contagious disease prevention and control is the responsibility of the central government (Box 1.6). Also, clear guidance should be provided about implementation under the reporting system. The mechanism for the infectious disease reporting system and information sharing should be clarified and its smooth functioning guaranteed.

Box 1.6. How are spending responsibilities for health spending split between central and local?

The Guiding Opinion on Reforming the Central-Local Split of Spending Responsibilities issued in 2016 (Guofa No. 2016/49) states that like other issues of national scope (such as international relations, defence, the use of key natural resources and national security), the prevention, control and treatment of large-scale infectious diseases is the responsibility of the central government. That is, the central government is in charge of financing and delivering related services. In case it delegates parts of the responsibilities to lower government levels, it must provide the corresponding funds.

More recently, in 2018, the Notice on the Reform of the Central-Local Split of Spending Responsibilities in the Area of Basic Public Services (Guobanfa No. 2018/6) applies a graduated burden sharing scheme with higher central share in the case of less wealthy provinces. The Notice requires this way of splitting the financing burden for seven spending categories, including assistance to basic healthcare insurance, basic public health services and birth control support. The central government assumes 80% of financing of those services in the poorest 12 provinces, 60% in 10, 50% in three, 30% in four and the five province-level cities, and just 10% in Beijing and Shanghai. In the case of another five services, including medical emergency services and services for the disabled, central support is determined by the fiscal situation of the local government.

In the same year, another notice, specific to the healthcare sector was issued: the Notice on the Reform of the Central-Local Split of Spending Responsibilities in the Area of Healthcare and Public Health Services (Guobanfa No. 2018/67). The Notice states that basic public health service provision is the joint responsibility of the central and local governments. The same graduated burden sharing scheme as above applies to basic healthcare services with a per capita standard spending amount specified by the central government. These services include for example, prevention, health literacy, old-age health services, administering of vaccines, keeping files of major disease groups such as diabetes or high blood pressure and public health emergencies. All contagious diseases that cross regional boundaries and other major public health services belong to the responsibility of the central government.

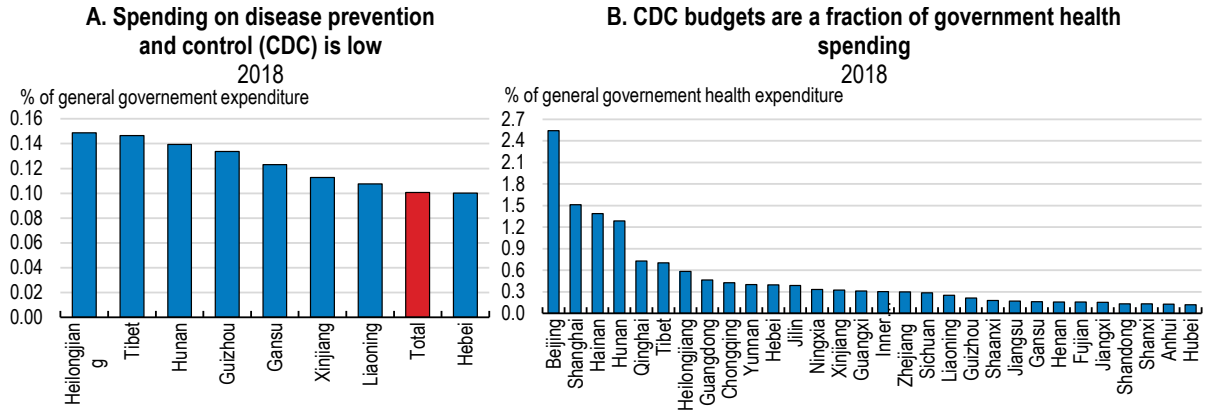
Source: Various regulations governing fiscal spending.

The central CDC is a quasi-government organisation (so-called *shiye danwei*) under the National Health Commission. Lower government levels also have their CDCs, altogether 3403 as of 2019. Governments at the county level and above have to establish a CDC, with the exception of central urban districts, whose disease control and prevention functions can be performed by the city CDC. The CDC is more like a research institute producing reports for the Health Commission. It does not have the authority to issue a warning or announce an emergency. To effectively handle any potential future outbreak, it should have greater powers and budget. China is not alone not having a powerful CDC; some OECD countries such as Japan did not have such an institution at all, as contagious diseases were not common in that country in the past century. The CDC should be in charge of assessing contagious illnesses, raising awareness and advising on how to address them. In addition, it should have the authority to investigate cases around the country reported through formal or informal channels. Better technical training and hence ability to judge potential public health emergency cases is crucial to make the reporting system work. In addition, prevention should also be strengthened, so that any potentially contagious case is properly isolated and all potential channels of transmission to other people are effectively cut.

Greater powers should come with bigger budgets and more qualified personnel. In 2018, 2.4% of general budget health spending went to support CDCs, which was a mere 0.1% of overall public spending. In less wealthier provinces, such as Gansu, Guizhou or Xinjiang, a slightly higher share of overall spending goes for that purpose (Figure 1.36). In the case of the central CDC, over 80% of its revenue came from the government budget. CDCs also receive remuneration for the services they deliver. As an increasing

number of services are provided freely, CDCs' foregone revenues should be compensated from the budget to allow them to perform their functions. CDCs across the country have a hard time to fill their positions with qualified personnel and the lack of training is an issue even in the wealthiest regions (Cheng, 2020[12]) (Liu, 2019[13]). China requires at least 1.75 CDC staff per 10 000 people, but in 2019 there were only 1.3, moreover the number of staff decreased compared to the previous year (Figure 1.37). In contrast, the minimum 70% of technical public health personnel share requirement is met (in 2018 it stood at 74.5%). Remuneration should be proportionate with the responsibility and the difficulty level of the job.

Figure 1.36. Spending on disease prevention and control is a small fraction of the total – 2018



Note: Only the shown province-level entities published relevant budgetary figures for 2018. Panel A includes all spending on disease prevention and control by the respective governments and shows it as a percentage of overall budgetary spending. Panel B shows the budgets of province-level Centres for Disease Control and Prevention (CDC) and their share in the health component of the general budget account.
Source: National and provincial centres for disease control and prevention.

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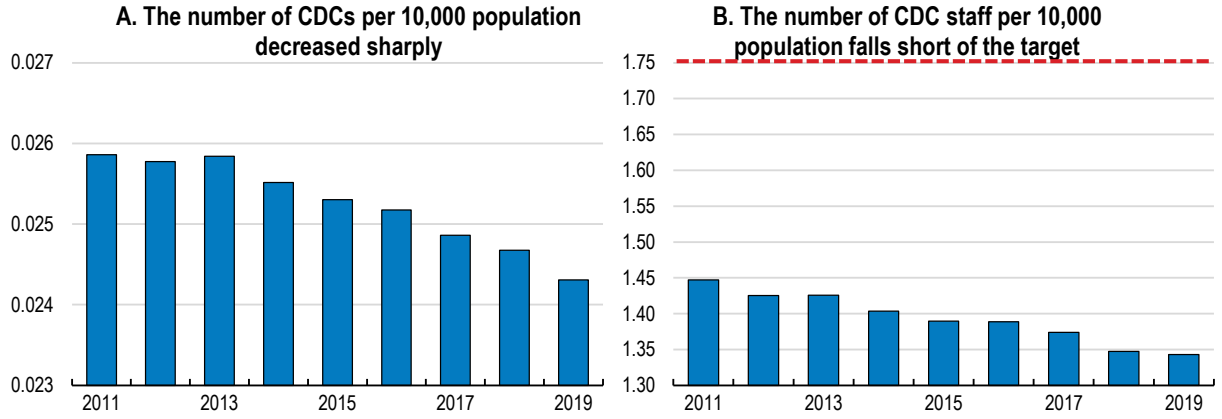
Figure 1.37. Centres for Disease Control have been under-resourced

Number of CDCs and CDC staff per 10,000 people



Source: National Health Commission.

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In the current setting, whistle-blowers could have been the only ones to reveal the extent of the spread of the deadly virus, but in general, whistle-blower protection in China needs to be strengthened and in this particular case, the doctors who informed each other about the new virus, were reprimanded for their action. The police officer involved received administrative punishment afterwards. Whistle-blower protection should be strengthened, as the 2017 OECD Economic Survey of China recommended (OECD, 2017[14]).

The swift escalation of the situation in Wuhan suggests that there is room to strengthen the emergency reporting system, in particular its early warning function and its ability to cope with emergency situations. The management of communication was another challenge. Raising awareness was critical, but a delicate balance between preparing people for the outbreak and avoiding unnecessary discrimination of those coming from or even just born in areas with high infection rates should have been struck. Greater transparency about the disease and its spread would have worked in that direction. Real-time data release is key in raising awareness. After SARS, China built an infectious disease reporting system, where provincial health commissions report major variables related to such diseases daily. Doctors are obliged to report diagnosed cases in real time through an electronic reporting system.

Creating a moderately prosperous society

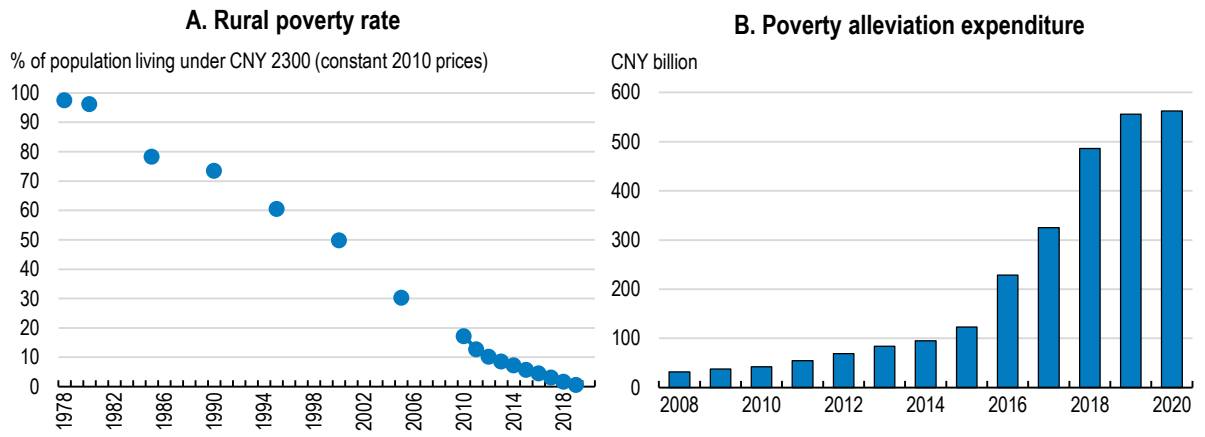
The outbreak coincided with the year to achieve a moderately prosperous society and eradicate extreme poverty. The process of becoming "moderately prosperous" by an increasing number of people has been fuelling China's rebalancing the economy. Robust consumption growth was supported by strong income growth on the back of steady job creation. This process has paused as many firms have not been able to keep their employees, in particular smaller ones in the private sector. As the economy recovered, some companies started facing a shortage of workers, partly related to the fact that some migrants have not yet returned to cities.

A moderately prosperous society also needs to distribute income and wealth in a more equitable way. Inequalities are highest in the urban-rural dimension, therefore the revitalisation of the countryside is critical in lifting the wellbeing of rural people. The recently adopted 2020-25 Rural Industry Development Plan's novelty is that it emphasises framework conditions and infrastructure for rural innovation in addition to developing specialty industries, food processing and tourism. The numerous specific targets, such as, for instance, the number of food processing plants over a certain size, however, may encourage inefficient investment.

The last mile appears toughest in poverty eradication

After China declared the eradication of extreme poverty by the official definition in 2020 (Figure 1.38), the major task now is to make poverty eradication sustainable. In China, unlike in many other middle-income countries, poverty is mostly concentrated in the countryside. Thus, poverty eradication has been mainly focusing on rural areas. Most of the poor are concentrated in highland areas with harsh climates and unfavourable conditions for agriculture, prone to natural disasters, and have connectivity difficulties. Due to such endowments, eradication of extreme poverty in the remaining dozens of counties had proven the most difficult. Promotion of non-agricultural activities, such as food processing, e-commerce, tourism and catering were ways to lift people out of poverty, but sometimes re-settlement was the only option. The China Development and the Agricultural Development Bank of China issued special resettlement bonds to finance the process (which totalled ca. CNY 194 billion as of the first quarter of 2020).

Figure 1.38. Poverty has fallen strikingly aided by increasing budgetary support



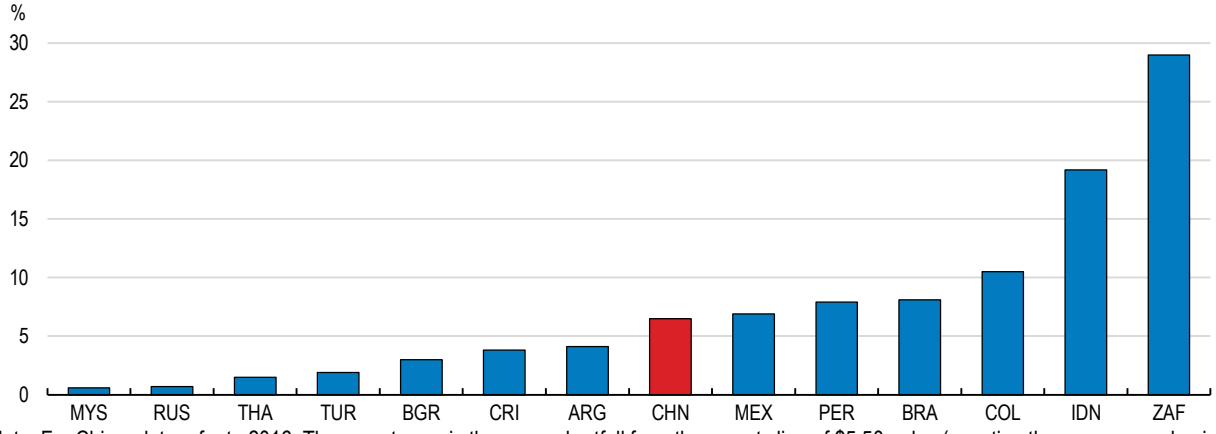
Note: The poverty rate is defined as rural poverty rate by the National Bureau of Statistics. Poverty alleviation expenditure is limited to the item under agriculture-related poverty subsidies.
Source: National Bureau of Statistics.

StatLink https://stat.link/sn28ap

To get reclassified out of absolute poverty, households need to reach CNY 4000 per capita in 2020 (the threshold was first defined in 2011 at CNY 2300 in 2010 prices and lifted a number of times according to price developments since). Income alone is not a sufficient indicator, proved access to basic healthcare, secure housing and safe drinking water as well as schooling of children within the range of compulsory school age are also prerequisites. In fact, the non-income criteria are often the binding ones, hence most on-going poverty relief projects focus on safe drinking water and housing. This national poverty line is less than half of the internationally used one, defined by the World Bank at USD 5.5 per day for upper middle-income countries. By this measure, China's poverty gap was 6.5% in 2016 (Figure 1.39).

Figure 1.39. China's poverty gap is lower than in some OECD and BRIICS countries

Poverty gap at $5.50 a day (2011 PPP) 2018 or latest year

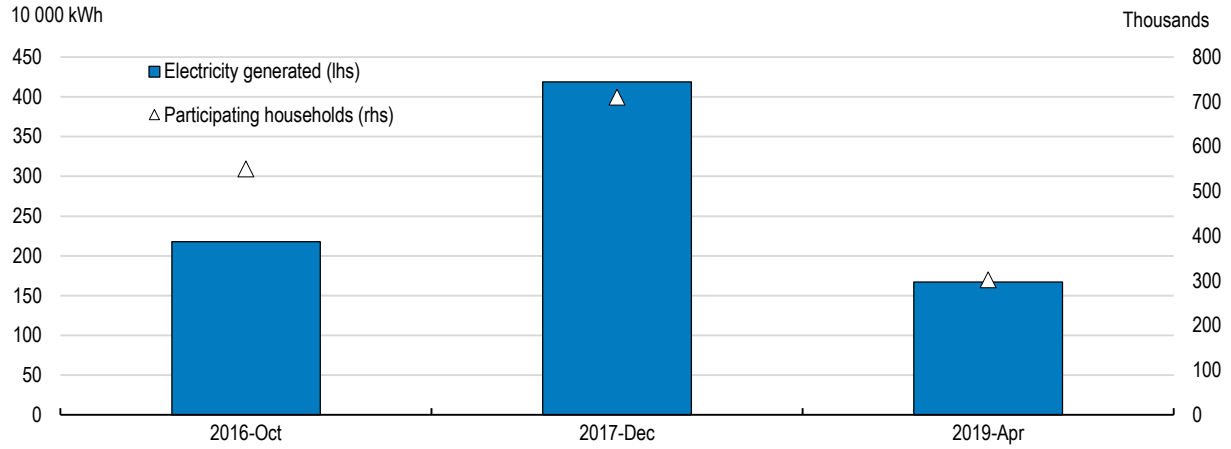


Note: For China, data refer to 2016. The poverty gap is the mean shortfall from the poverty line of $5.50 a day (counting the non-poor as having zero shortfall), expressed as a percentage of the poverty line.
Source: World Bank World Development Indicators database.

StatLink https://stat.link/cgiw6q

A new proposal for poverty eradication through solar power generation was introduced in 2016 and continued over the 13th Five Year Plan in 2017 and 2019, with a total of a million and a half participating households and generating over eight million kWh of energy (Figure 1.40).

Figure 1.40. Solar energy for poverty projects have a million and a half households participating

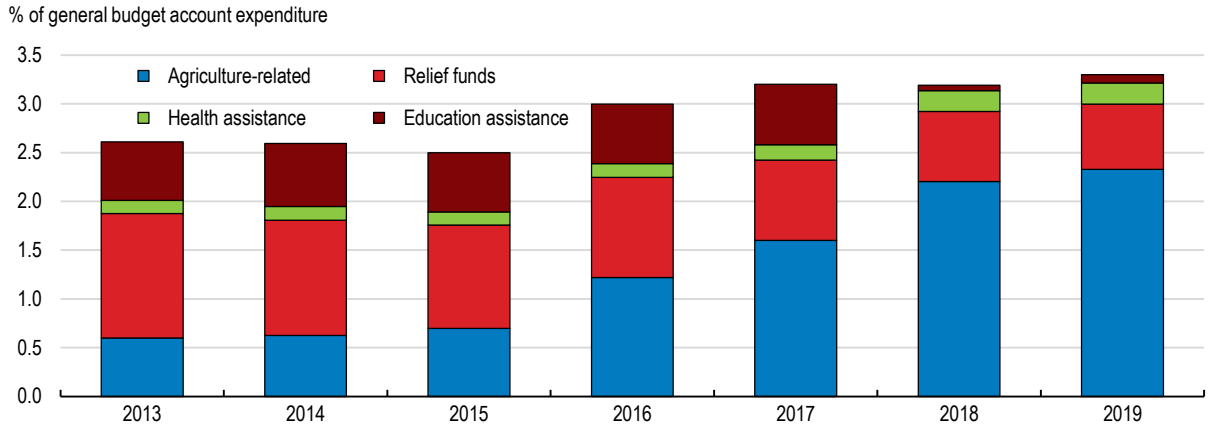


Note: The solar energy projects with the purpose to alleviate poverty started in October 2016, followed by the second phase in December 2017 and the third in April 2019. The chart shows the number of newly joined households and energy generated by them.
Source: National Energy Administration and related project documents.

StatLink https://stat.link/glzsky

A large part of poverty-related fiscal spending (roughly 70% in recent years) is under the agriculture category (Figure 1.41) and is often discussed as national poverty spending, but in fact relief funds (including the minimum subsistence allowance, the *dibao* as well as the support for extremely poor people, the *tekun*) and support for education and medical expenses also belong to this category (Yang, 2020[15]). Moreover, there are poverty-related spending items by most agencies, a particularly large one is in the area of transportation, which cannot be assessed from publicly available data. Therefore, these numbers provide at best a partial assessment of poverty-related spending. Poverty spending under agriculture goes mainly to rural infrastructure (roughly a third in 2019) and so do loans for similar purposes by the China Development Bank. Major infrastructure investment projects include transforming dirt roads into asphalted ones, building water pipes and electricity wires. Rural minimum subsistence allowance or *dibao* is the single major relief item with a two-thirds share, while education assistance is concentrated at the tertiary level (over 30% in 2017) followed by the primary (28% in 2017). More education assistance should go to lower levels, while at the tertiary level tuition and living expenses could also be covered by loans. Given the low reimbursement rates of medical expenses, health-related assistance appears limited, imposing a heavy burden on the families of people who need hospital care or long-term treatment. A more comprehensive assessment of spending and its outcomes is needed to enhance spending efficiency. An important step in that direction would be publishing spending also by the economic classification.

Figure 1.41. Most of poverty assistance funds are spent under the agriculture category in the budget



Note: For education assistance, 2018 and 2019 only include spending at the central government level.
Source: Ministry of Finance and Yang (2020).

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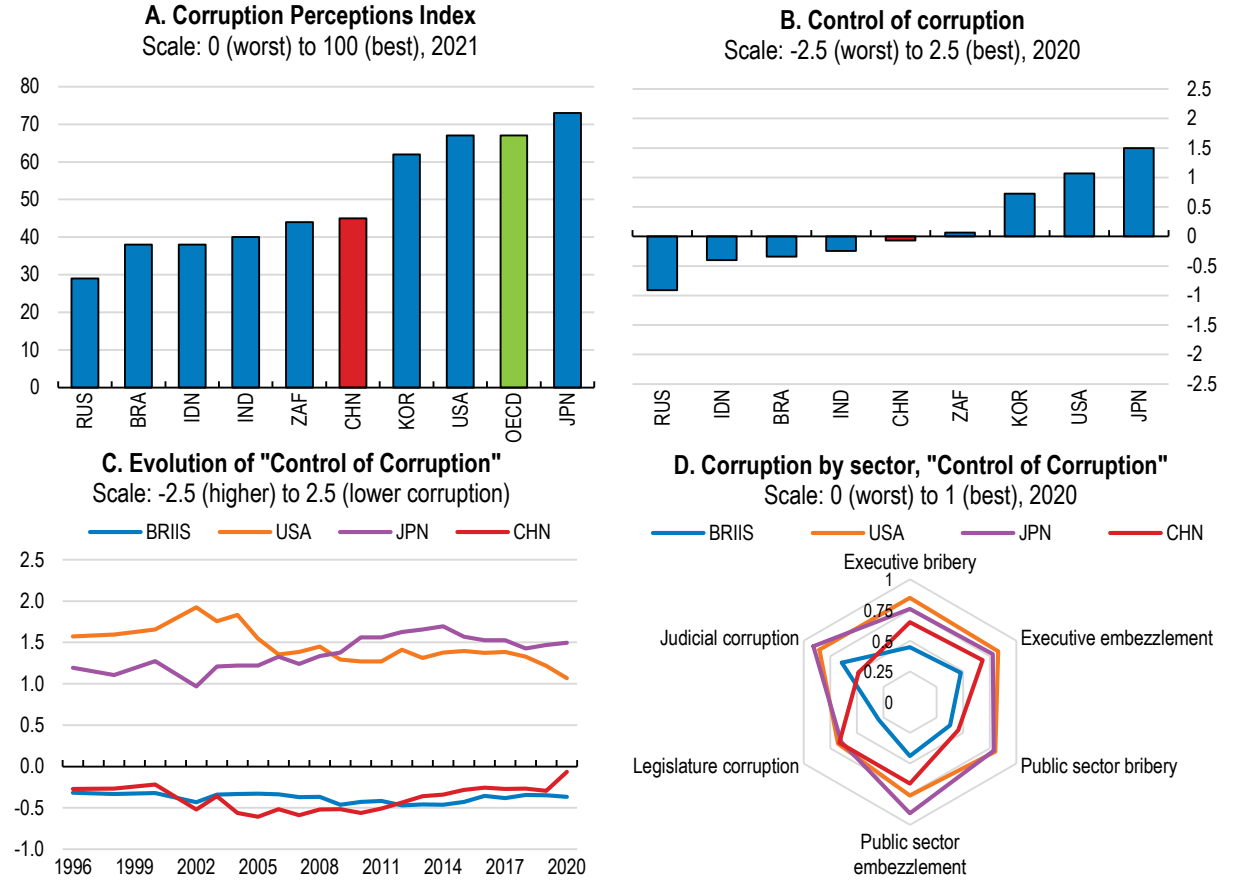
The rule of law needs to be improved

Corruption is a well-recognised hindrance to growth and inclusiveness in China, leading to efficiency losses in the allocation of resources and redistribution of income from the poor to the relatively rich. Indeed, empirical evidence shows that, for instance, industrial park sites chosen largely as a result of favourable political connections generate lower economic benefits than those chosen largely based on their economic fundamentals (Kahn et al., 2020[16]). Corruption perception based on Transparency International appears to be higher than in OECD countries, but comparable to other BRIICS economies such as India, Indonesia and South Africa (Figure 1.42, Panel A). The grasp on corruption tightened since 2013 (Figure 1.42, Panel C). The anticorruption and anti-extravagance campaign seems to have reduced the level of corruption at the local level, but at the same time it has also encouraged risk aversion and bureaucratic slack (Wang and Yan, 2019[17]). The sectoral components of the Control of Corruption index show that legislature corruption is as rare as in the largest OECD countries, and executive embezzlement is only slightly worse than in the United States (Figure 1.42, Panel D). In judicial corruption, China fares below the average of BRIICS countries, while in other forms it performs better.

Beside judges, civil servants appear to be most prone to corruption, shown by low scores (though comparable to those in the other BRIICS countries) on the public sector bribery subcomponent (Figure 1.42, Panel D). Corruption is widespread in all sectors, but it can potentially even threaten financial stability if it is in the financial sector. Greater accountability for civil servants' actions is being gradually introduced, which is manifest in, for instance, the increasing number of the types of professions where a civil servant can be held responsible for a lifetime (i.e. even after leaving office, until they die). Recently land and spatial planners are added to this list (Ziran Zibanfa No. 2020/27), but judges, prosecutors and policemen have been in the system since 2013. Reflecting the high potential for corruption in the construction sector, engineers in charge of projects are also subject to lifetime responsibility (Jianshegui 2019/12, effective from 1 March 2020). The rational of the lifetime responsibility system is to prevent people getting the return after retirement for the favours they offered while in office. The rotation among senior officials is another way of fighting corruption. There has been a recent call for strengthening of oversight over the exercise of power. Indeed, excessive concentration of power without proportionate oversight and accountability are at the core of the issues. Making the abuse of power more deterring and leaving less discretion for decisions by individual civil servants are important, but enhanced transparency is also needed and so is stronger whistle blower protection to uncover cases. Authorities should consider joining the OECD Anti-Bribery convention.

Figure 1.42. Corruption is more rampant than in OECD countries



Note: Panels C and D: BRIIS is the average of Brazil, Russia, India, Indonesia and South Africa. Panel D shows sector-based subcomponents of the "Control of Corruption" indicator by the Varieties of Democracy Project.

Source: Panel A: Transparency International; Panels B & C: World Bank, Worldwide Governance Indicators; Panel D: Varieties of Democracy Institute; University of Gothenburg; and University of Notre Dame.

StatLink https://stat.link/vuy7fs

Policy recommendations

MAIN FINDINGS	KEY RECOMMENDATIONS
Macroeconomic policy support and financial stability	
Economic recovery is gaining momentum and policy support is being withdrawn. Private and small firms are hard hit by COVID-19.	Keep monetary policy accommodative by providing the necessary liquidity and not raising policy rates as long as inflation pressure is low and growth is moderate. Raise disclosure standards for private and small firms so that they will be able to finance their viable projects even after policies tighten.
Economic recovery is firming but spending needs towards inclusiveness and sustainability are large.	Emergency stimulus measures should be withdrawn only when recovery is fully on track and spending on social security, health and education as well as on infrastructure investment (such as renewables, urban transit systems and environmental infrastructure) should increase.
Stress tests indicate that in a severe stress scenario many banks would have inadequate capital.	Abolish reduced loan loss provisioning ratios and disincentivise excessive risk taking by banks.
Generous tax exemptions and reductions continue to curb public revenues. At the same time most SOE profits are recycled to the sector.	Increase SOE-related fiscal revenues, in accordance with OECD SOE corporate governance guidelines, in particular for financial institutions to better meet longer-term spending needs.
Interconnectedness of the financial system with non-banks, financing vehicles and local governments is high, increasing the risk of contagion.	Tighten collaboration across relevant government agencies to prevent systemic risk.
NPLs are low as they are being written off, while capital appears adequate. Some failed banks are being bailed out upon failure.	Adopt a comprehensive and consistent approach to bank restructuring: disclose all NPLs so that banks will be obliged to build up their capital if needed and make creditors bear part of the costs of bank failure.

Trust products are defaulting in numbers, and the associated risks are not well understood by investors.	Enhance disclosure of risks involved in trust products and raise fines for over-promising of returns to deterring levels to reduce systemic risk.
Household debt is not very high, but concentrated and some low-income households have high debt service-to-income ratios	Lower the cap on the debt service-to-income ratio to avoid excessive borrowing by households.
Internet lending is booming, but lenders do not face the same regulatory costs as traditional lenders.	Level the playing field between internet-based and traditional lenders by subjecting the former to the same regulatory standards.
Some overseas infrastructure projects are not profitable and impose a heavy debt burden on recipient countries.	Subject overseas infrastructure projects to thorough cost-benefit analysis and take into account the indebtedness of the recipient country. Regularly audit overseas affiliates of state-owned enterprises.
Enhancing economic efficiency	
Corruption mainly manifests in the form of public sector bribery.	Enhance transparency and accountability and reduce the concentration of power and managers' hands. Sign up to the OECD Anti-Bribery Convention.
The share of services in value added has been increasing steadily but is still lower than in advanced economies.	Accelerate the liberalisation of services industries to build a better base for long-term sustainable growth.
Multiple bilateral trade disputes hamper international trade.	Engage with trading partners on outstanding trade issues in a timely, transparent and evidence-based manner consistent with WTO and bilateral agreement obligations.
There is no comprehensive and internationally comparable data in many areas, making it difficult to conduct evidence-based analysis.	Increase data disclosure in all areas of economic activity and report statistical data on an internationally comparable basis.
Strengthening inclusiveness	
Income inequalities are large. Few people are subject to income taxes.	Once the recovery firms, revamp the fiscal revenue system by widening the base of the personal income tax and abolishing deductions.
Wealth inequalities are large.	Introduce a recurrent tax on the holding of real estate and an inheritance tax.
People's access to public services is still to a large extent linked to their hukou or place of household registration.	Accelerate hukou reforms and grant equal access for migrant workers to public services.
Currently only urban employees are covered by unemployment insurance and there are over 700 jurisdictions administering it.	Extend unemployment insurance to the entire labour force and unify administration at the national level.
China has high life expectancy for its income level and low retirement age.	Ensure sustainability of the pension system by linking the retirement age to life expectancy.
Pension contribution rates vary across the country and there are multiple schemes. Contributions are a high burden for the low-income.	Unify the pension system across regions and schemes and make it more redistributive by abolishing the floor and raising the ceiling for contributions.
Absolute poverty by the official definition has been eradicated, aided by fiscal support.	Conduct and disclose comprehensive assessment of poverty-related spending and its outcomes to ensure that poverty eradication is sustainable.
Building a robust health system	
COVID-19 highlighted the downsides of low reimbursement rates of healthcare expenses, pushing many people to the brink of poverty.	Reform healthcare by increasing the reimbursement rate of healthcare and medicine to avoid falling into poverty.
Centres for disease control are underfunded and are losing staff. A direct reporting system of infectious diseases to the central government has been established, but it can be blocked at the local level.	Ensure that local centres for disease control are well-funded and staffed so that they can help avoid future health crises. Clarify the mechanism for the infectious disease reporting system and information sharing and guarantee its smooth functioning.
Currently there does not exist a transparent and effective mechanism for global data sharing.	Increase transparency and data sharing with global health experts and organisations and undertake meaningful reforms to strengthen public health and disease surveillance systems.
Population is aging rapidly and pilot long-term care insurance systems have not led to a nationwide system yet.	Establish a long-term care insurance system in the whole country.
Greening growth	
As recovery gains momentum, pollution is back. Temporary halting of industrial production in polluting industries is not a sustainable solution.	Accelerate the energy transition including by significantly reducing the construction of coal-fired power plants in line with China's climate commitments.
Pollution is taking a heavy toll on human lives.	Raise environmental taxes on fossil fuels to reduce pollution and strengthen climate mitigation action.
The electricity market reform pilot to sell energy by producers directly to users does include renewables producers.	Allow renewables producers to sell the electricity they produce through the grid.
Green investment guidelines are voluntary.	Set the schedule for introducing a mandatory disclosure regime in line with the Task Force on Climate-related Financial Disclosures.

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2 Reaping efficiency gains through product market reforms

Margit Molnar

The impressive emergence of China's economy is set to lose some momentum as the country catches up with more advanced economies and its rapid ageing also weighs on it. However, China can still reap the "reform dividend", especially with measures to keep up the sustained growth of productivity. Reforms that enhance competition in product markets are among those that can potentially bring about significant productivity gains. China has been lowering the burden on start-ups and simplifying administrative procedures for a while already, achieving significant progress, though more procedures could go online and a one-stop shop is still to be implemented across the country. State ownership remains dominant in most network industries and there are many SOEs even in commercially-oriented industries such as retail or catering. SOEs enjoy implicit government guarantees and are the main beneficiaries of administrative monopolies, i.e. exclusive rights granted by regulations. In addition, they also benefit from various subsidies, sometimes leading to low-level, repetitious investment, excess capacity and waste of public money. A more level playing field would bring about efficiency-enhancing competition by private and foreign firms. Some network industries such as electricity and gas have recently accelerated their opening up and competition is developing in some segments.

The COVID-19 pandemic is likely to have a lasting impact on economies and societies worldwide. Pandemics are shown to be followed by sustained periods of uncertainty, depressed investment opportunities, and/or heightened desires to save (Jordà, Singh and Taylor, 2020[1]), thereby reducing potential growth. To mitigate the impact of COVID-19, many governments, in addition to emergency measures to save lives and keep firms afloat, have also supported investment. China is among those countries where the policy response has been tilted towards public investment. While continuing to strike a delicate balance between keeping the pandemic under control and resuming activities, it is crucial to implement reforms that will accelerate the recovery and support growth in the medium term. The impressive emergence of China's economy is set to lose some momentum as the country catches up with more advanced economies and its rapid ageing also weighs on it. However, China can still reap the "reform dividend", especially with measures to keep up the sustained growth of productivity. COVID-19 has also triggered efficiency-enhancing reallocation (Barrero, Bloom and Davis, 2020[2]), where product market reforms, by removing barriers to entry and exit, can act as catalysts. Product market reforms can also spur reallocation between existing firms, towards the more efficient ones, another way of enhancing efficiency.

Reforms that enhance competition in product markets are among those that can potentially bring about significant productivity gains. Earlier OECD assessments gave credit to the progress in regulatory transformation and stressed the need to accelerate the momentum (OECD, 2009[3]). In particular, it highlighted the importance of raising the quality of regulatory reviews, reforms and, where necessary, removal of existing rules as well as institutions. Regulatory bodies need to be independent, with clear mandates, authority and accountability. Transparency is key to any regulatory system. Independent regulators in OECD countries are typically charged with promoting competition and the interests of consumers by levelling the playing field and ensuring that regulatory rules apply equally to all firms. If the government is both the owner and regulator, it is hard to ensure independence and conflict of interest may arise. These principles should be considered to revamp the regulatory system in China so that the implementation of reforms is ensured and is done in an efficient way. An important OECD tool, the Regulatory Impact Assessment (OECD, 2020[4]), if adopted, would help policymakers in choosing the appropriate policy solutions. Considering the costs of regulations and alternatives of suggested policy options would also help reducing adverse impacts.

Competition-related policies have been stepped up recently and this should continue. Revival of productivity growth very much hinges upon how even the playing field is. The crisis uncovered the fragility of the small business sector and by hitting them disproportionately harder, made the playing field less even. State-owned enterprises (SOEs) in contrast, are the major beneficiaries of the investment-driven recovery and at the same time they are also the key engine of recovery. Foreign firms have been hit by disruptions in value chains and depending on the industry, also sluggish demand.

There is a wide variation in the stringency of regulations across sectors with retail trade being less regulated than in OECD countries, while professional services and network industries are more regulated. Retailers are not subject to restrictions related to opening hours or zoning as they are in many OECD countries, making the regulatory framework more conducive to competition. Indeed, OECD estimates indicate that retail trade mark-ups are lower in China than in the other BRIICS countries, while higher in network industries, which are more heavily regulated (OECD, 2014[5])A large part of network industries is controlled by the state and, in some cases, a few incumbents divide the market among themselves. The electricity sector is no longer fully vertically integrated: the power generation segment is liberalised with traditional and renewable generators often competing. The grid is shared by two incumbents. The natural gas sector is currently undergoing significant liberalisation. Transport industries exhibit varying patterns: while railways passenger transportation is still vertically integrated, freight transportation is being liberalised nationally. Trucking is relatively unregulated, but local governments erect various barriers to outside competitors through granting administrative monopolies to local businesses (as opposed to market monopolies, administrative monopolies are granted through administrative documents/regulations). Regulations in professional services, in particular legal and notary services, are more stringent with regard

to the legal form of the enterprise and ownership/voting rights by people/businesses outside the profession are restricted.

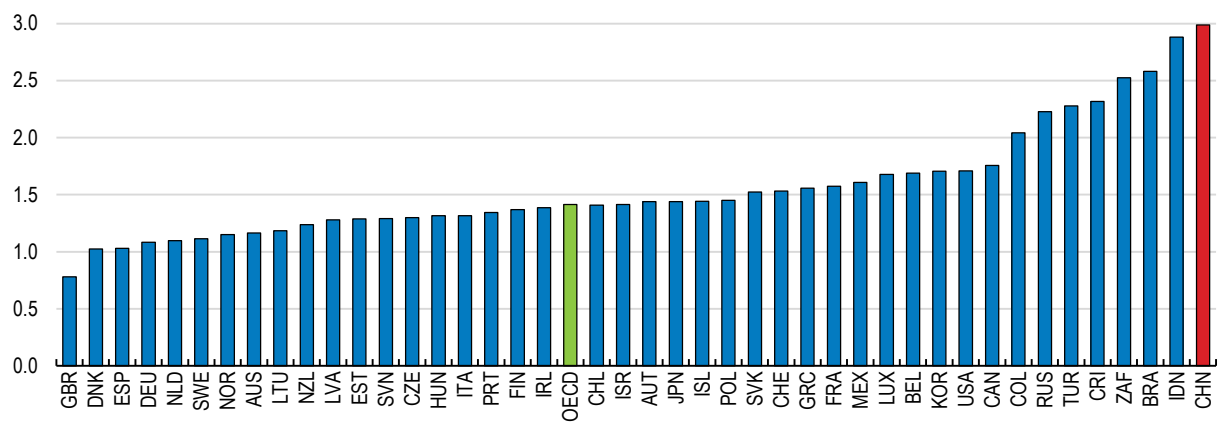
In China, national authorities regulate certain areas, while the responsibility for other areas is delegated to the provincial level. Provinces are then free to choose whether or not to introduce regulation. Hence, the stringency of regulations varies widely across the country: some provinces and municipalities are liberalising faster to reap early reformer benefits, while others are lagging behind. The Yangtze and the Pearl River Delta regions are leading in terms of the business environment and the Jingjinji region (Beijing, Tianjin and Hebei) is also a frontrunner. Among inland cities, Chengdu is a dynamic reformer (Smart China Annual Meeting Organizing Committee, China Construction Bank and Guoyong Research Academy, 2020[6]). In the Product Market Regulation indicator database, where regulations can differ by jurisdiction, the values refer to Beijing.

While COVID-19 has highlighted some of the vulnerabilities of the economy and society, it has also accelerated some processes that may push up the growth potential and ensure a sustainable recovery. In particular, digitalisation, triggered by pent-up demand for contactless services, sprinted ahead. E-government services also jumped on the digitalisation bandwagon, though they were lagging behind businesses. Part of the stimulus is frontloading the rollout of 5G, which catalyses both digitalisation and chips production. Against this backdrop, a new series of privileges have been launched for the semiconductor industry and the regulatory system for new technologies is evolving.

This chapter takes stock of the current state of product market regulations, including the administrative burden on start-ups, licensing, applying the principle of competitive neutrality to SOEs, introducing competition in network industries and removing price controls, levelling the playing field for private and foreign firms and turning the crisis into opportunity by using subsidies efficiently. It discusses ongoing reforms, where relevant, provides comparisons with OECD and other non-member countries and draws recommendations for the future direction of reforms. The chapter explores the lower-level indicators of the Product Market Regulation indicators as they are conducive to recommendations and as the overall indicator (Figure 2.1), which was designed for OECD countries, only partly captures regulatory issues in China's product markets.

Figure 2.1. Regulatory restrictions in China are more stringent than in other countries

PMR overall indicator, 2018



Note: Data for the United States refer to January 2021, for China and Indonesia to 2020 and for Costa Rica and Estonia to 2019. Values of the indicator vary between 0 and 6 with a higher value indicating greater restriction.
Source: OECD Product Market Regulation database.

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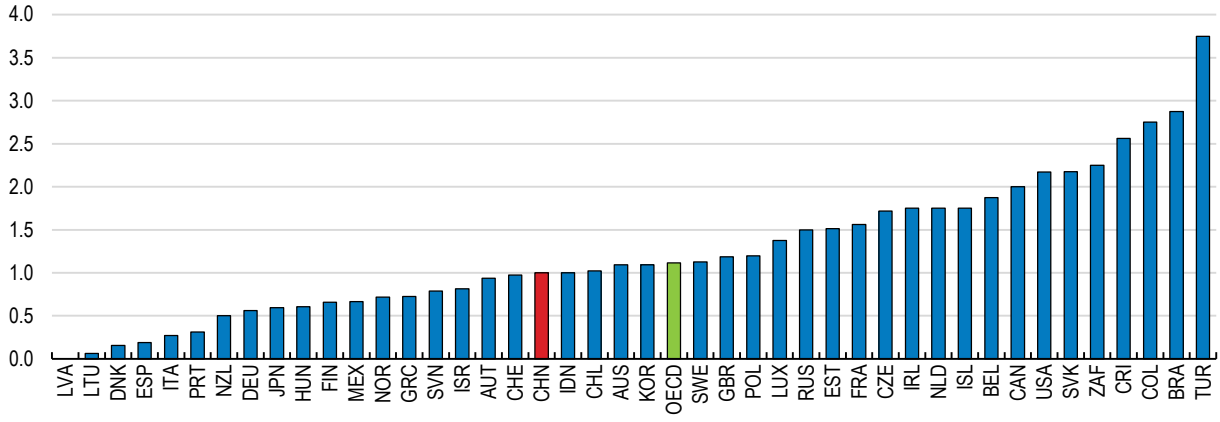
Reducing the burden on businesses

Making business transactions easier, in particular procedures to start a business, is a proven effective tool to lift productivity and China has embarked on this path. The government has made administrative simplification and product-market deregulation key government objectives. In 2015 it established an Inter-Ministerial Joint Meeting for Reducing the Burden on Enterprises, which convened in February 2021 for the 10th time. The 2016 update of the administrative burden on enterprises sub-indicator of the OECD Product Market Regulation (PMR) indicators showed that there had been progress since 2013, but there was still room to reduce the burden to the level in OECD countries. The latest PMR vintage results (Vitale, Moiso and Wanner, 2020[7]) confirm that enterprises in China are subject to somewhat lighter burden than in the average OECD country, though higher than in Japan, Germany or Italy (Figure 2.2). In some major non-OECD economies, such as Brazil or South Africa, the burden is much higher than in China.

Figure 2.2. There is room to reduce the costs of starting up a business

Administrative burden on start-ups sub-component of the PMR indicator, 2018



Note: Data for the United States refer to January 2021, for China and Indonesia refer to 2020 and for Costa Rica and Estonia to 2019. Values of the indicator vary between 0 and 6 with a higher value indicating greater restriction.
Source: OECD Product Market Regulation database.

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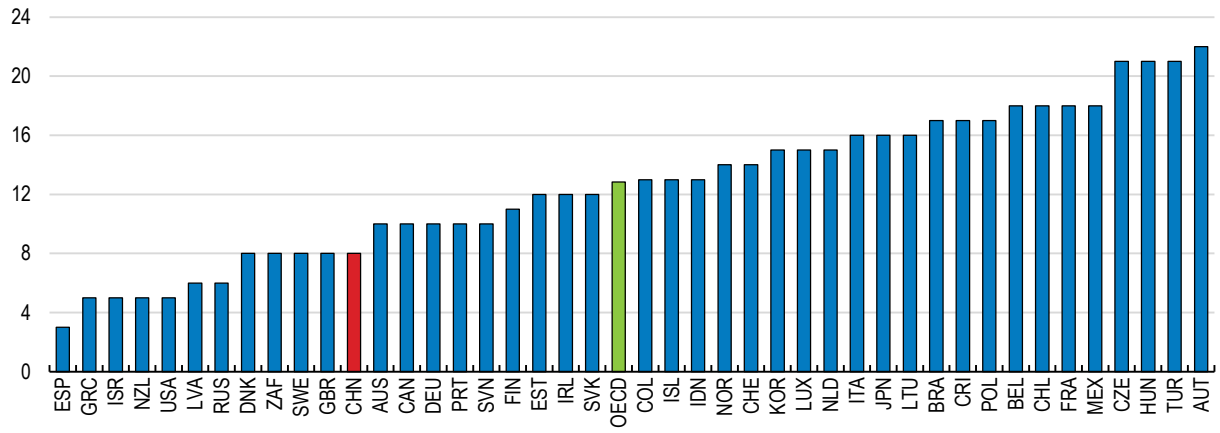
For instance, to start a limited liability company in China, 8 elements need to be completed, namely making an official seal, registration of domicile, submission of articles of association, designation of shares offered for subscription, appointment of the legal representative, directors and supervisors, acquisition of business licence, and registration with the tax office and registration with social security authorities. Six of those elements can be accomplished online. The number of elements is fewer than that in OECD countries with above-average product market regulatory stringency, such as Japan or Korea, where it is 16 and 15 procedures, respectively (Figure 2.3). In New Zealand, only five of those elements are required, in Greece or Latvia only six and in Spain only three.

Figure 2.3. The number of elements required to set up a company is below the OECD average, 2018



Note: Data for the United States refer to January 2021, for China and Indonesia refer to 2020 and for Costa Rica and Estonia to 2019.
Source: OECD Product Market Regulation database.

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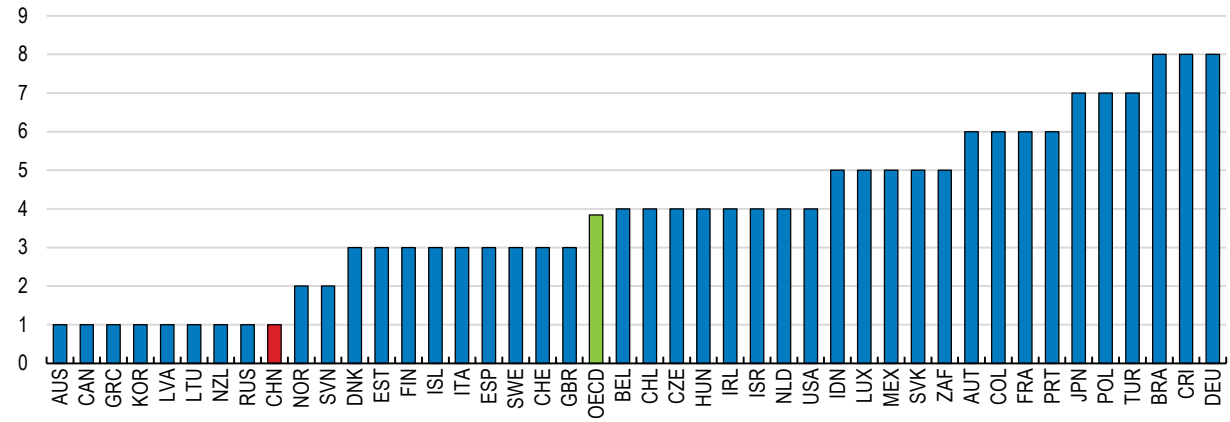
Although the number of elements that have to be completed to start a limited liability company shrank significantly, there is still room to further reduce the burden on starting up a limited liability firm. For instance, 32 out of the 36 OECD members for which the PMR indicator is available do not need a permit to conduct economic activity in order to start up a limited liability company. Furthermore, 21 OECD members do not require a formal deed of incorporation and ten not even a domicile to be registered. OECD countries are gradually shifting from an *ex ante* type of regulation towards an *ex post* approach, i.e. instead of approvals, relying on legal procedures in case of conflict. That is how now less than half of the countries (15 out of 36 OECD members for which the PMR indicator is available) require the approval of the firm's name to register, and nearly all do the registration of the company's name as part of the one-stop shop. The latest PMR vintage data refer to January 2020, however, since then, the administrative burden on start-ups has fallen. The approval of the proposed name for the firm is no longer required since 14 December 2020, when the draft changes to the Provisions on the Administration of Enterprise Name Registration were passed by the Standing Committee of the State Council. To further reduce the burden, a number of other procedures, such as the requirement to submit the articles of association could be dropped. Moreover, additional requirements at the local level are unjustified and should be abolished to have the same conditions to start-up a business all around the country.

Only one institution needs to be contacted to start a business in China, compared with the OECD average of around four (Figure 2.4). This is the same as in the frontrunner countries of Australia, Canada, Greece, Korea, Latvia, Lithuania or New Zealand, where to set up a new firm it is also enough to contact a single institution. The number of institutions to encounter during registration fell substantially over the years. One-stop shops are becoming increasingly common, though there is variation across the country in implementation. By end-2020, all jurisdictions established one-stop shops where part of the procedures can take place to start a business (i.e. filling in the application, submitting certificate of identity and of domicile in the case of personally-owned enterprises and filling in the application, confirming domicile, investors and shareholders and appointing the legal representative, directors and supervisors in the case of limited liability companies – all these are under the jurisdiction of the State Administration for Market Supervision). Moreover, tax office registration, social security registration and making a company seal are also part of the one-stop shop in most jurisdictions.

Figure 2.4. Only one institution need to be contacted to register a limited liability company, 2018



Note: Data for the United States refer to January 2021, for China and Indonesia to 2020 and for Costa Rica and Estonia to 2019.
Source: OECD Product Market Regulation database.

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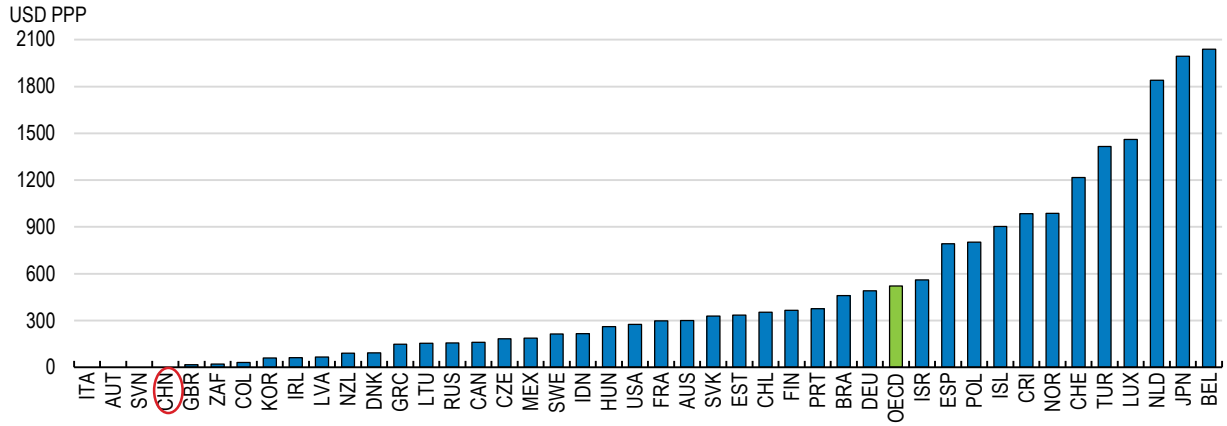
There is neither minimum capital requirement nor monetary costs for registering a limited liability firm in China, which is in line with the best practice in OECD countries (Figure 2.5). The monetary costs fell considerably compared to 2013 (when had already fallen relative to 2008).

Figure 2.5. It costs nothing to start a limited liability company, 2018



Note: Data for the United States refer to January 2021, for China and Indonesia to 2020 and Costa Rica and Estonia to 2019.
Source: OECD Product Market Regulation database.

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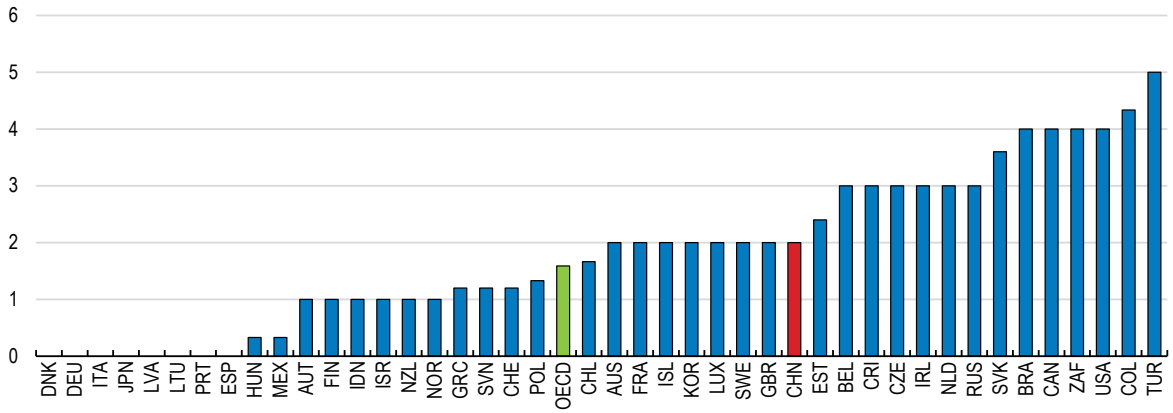
Administrative simplification, the delegation of decision making power and abolishing of licences is an on-going process, with thousands of licences becoming unneeded over the past few years. As recently as in the autumn of 2020, another set of licence requirements were abolished. On the licenses and permits sub-component of the PMR, China still applies more restrictions than the OECD average, but is doing better than Turkey, Colombia, Canada or the Slovak Republic or some BRIICS economies such as Brazil or South Africa, although not as good as Indonesia (Figure 2.6). Delegating to local governments the decision to simplify administrative procedures is not considered a best practice in OECD countries; instead, product market regulations should be unified across the country to create a single domestic market. Furthermore, a pre-announced schedule of such decisions would help reducing uncertainty on the need for licences and permits and would therefore help businesses plan ahead their investments. A public database with the list of licences and permits required at all levels would allow for gauging the extent of reforms.

Figure 2.6. The burden of licences and permits is comparable to that in some OECD countries

Licenses and permits sub-component of the PMR indicator, 2018



Note: Data for the United States refer to January 2021, for China and Indonesia to 2020, while data for Costa Rica and Estonia to 2019. Values of the indicator vary between 0 and 6 with a higher value indicating greater restriction.
Source: OECD Product Market Regulation database.

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Most transportation services need a license, including sea, coastal and inland passenger and freight water transport, road freight transport and long-distance passenger transport by coach. Licenses beyond those related to safety impose an unnecessary burden on businesses. Trucking licences, for instance, are only issued to people below 60, which is the current retirement age for men, but the next 14th Five Year Plan already factors in an increase in the retirement age, thus this age limit should be extended accordingly. Truck drivers also need to pass a qualification test on legal knowledge, which may, in some cases, constitute an entry barrier and is not necessary for the safe provision of services. Moreover, the requirement of local licenses by many cities to enter the city hinders the creation of a single domestic market.

Engineers or architects need to be employed by a firm and if the firm has a license for a certain geographical region, then they can work in that region. If, however, they wish to work in different regions, then they may need to switch employer, depending on what regions their employer is licenced for.

Levelling the playing field between SOEs and private firms

COVID-19 hit smaller firms disproportionately more in most countries. In China, smaller firms tend to be privately owned and much more fragile than firms owned by the central or local governments or government agencies. While private firms, especially large ones, have also been generous in supporting the hardest hit areas offering goods and services, the COVID-19 outbreak was an opportunity for state-owned enterprises to show their commitment to sharing the burden of addressing the outbreak and supporting the post-crisis recovery. “National service”, i.e. unremunerated provision of goods and services in times of crisis was key behind the rapid response in handling the outbreak. Following the Notice (Guozifa fagui 2020/19) by the State-owned Assets Supervision and Administration Commission (SASAC) on 30 January 2020 calling SOEs to join the fight against the new coronavirus, within a month 46 similar documents with specific action plans were issued at the local level. The most common measures were donation of goods, supporting of SMEs along their supply chains and ensuring rapid resumption of production. Within a few days after the start of the lockdown, 4000 medical personnel were sent to Wuhan from state-owned enterprise hospitals around the country. The military also dispatched another few thousands. Moreover, SOEs sent protection materials and daily necessities to Hubei province. Over 70 central SOEs jointly donated goods worth several billions of yuan to the frontline as a demonstration of corporate social responsibility. SOEs in the construction sector, in addition to swiftly building two make-

shift hospitals in Wuhan, have also redesigned and reconstructed over 100 hospitals across the country to adapt them to treating COVID-19 patients.

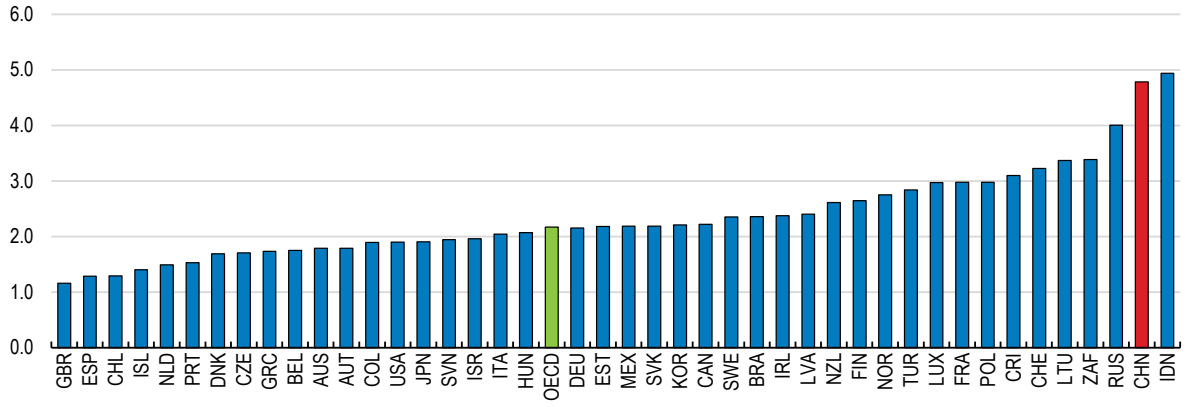
SOEs were crucial in meeting emergency needs, but the COVID-19 crisis contributed to cementing their privileged position in the economy. The devastating floods affecting a dozen of provinces in summer 2020, mainly in the south along the Yangtze River and its tributaries, further augmented the role of SOEs in providing emergency support to the government. While such help is indispensable to handle natural disasters and other emergencies effectively, the occurrence of such events and their size is highly unpredictable, hence imposing high degrees of uncertainty on SOEs. Profit is often not the major objective of SOEs, but instead meeting certain public policy goals, as a survey conducted for the 2017 OECD Economic Survey of China showed (OECD, 2017[8]) (Molnar and Lu, 2019[9]). To level the playing field between state-owned and private firms, especially to ensure transparency about government support, SOEs should, on the one hand, receive fair compensation for their services during emergency situations and on the other, should face a level playing field. There should be accounting separation between their provision of public and market-based services for greater transparency. “National service” has affected SOEs’ revenues and profitability, but they are likely to emerge from the outbreak much stronger relative to the private sector. Both SOEs and private firms will be able to carry forward their outbreak-related losses for eight years, but many private firms may exit the market, while that risk is much smaller for SOEs even though they carry the bulk of non-financial corporate debt. Thus SOEs’ market shares are likely to increase.

SOEs are important players and command most of corporate debt

Even though by now the private sector is the major producer and employer with SOEs making up a mere 0.4% of firms according to the 2018 Economic Census, the share of SOEs in terms of sales or assets is much larger. SOEs contributed 23.7% of taxes and charges in the national budget over 2017-19. SOEs are dominant in several industries, including network industries and not only in natural monopoly segments. Air transportation is dominated by SOEs and so are utilities, notwithstanding recent opening measures. According to the public ownership mid-level sub-component (which includes the scope and governance of SOEs, government involvement in network industries and direct control lower-level subcomponents) of the OECD PMR indicators, only Indonesia has more widespread public ownership than China (Figure 2.7) among the countries for which the indicator is available. In addition to legacy granting natural monopolies to SOEs, administrative monopolies created by regulations also boost their market shares.

Figure 2.7. Public ownership is widespread

Public ownership sub-indicator of the OECD PMR indicator, 2018



Note: Data for the United States refer to January 2021, for China and Indonesia refer to 2020 and for Costa Rica and Estonia to 2019. Values of the indicator vary between 0 and 6 with a higher value indicating greater restriction.
Source: OECD Product Market Regulation database.

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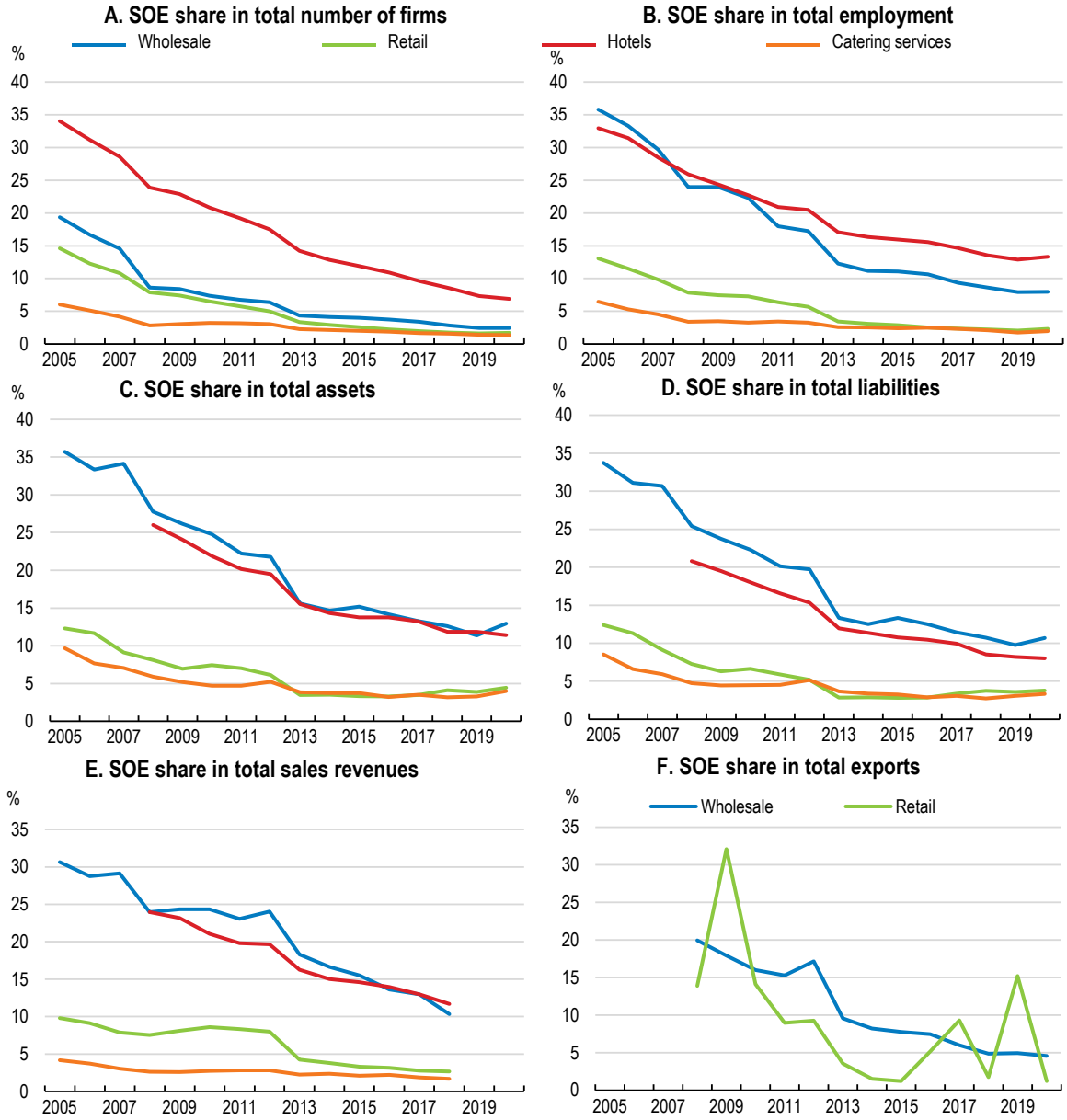
Moreover, SOEs command considerable shares even in some commercial activities, unlike in OECD countries (OECD, 2017[10]). For instance, in the accommodation business, they make up around 7% of all firms (above the CNY 20 million revenue threshold) and employ roughly a sixth of staff (Figure 2.8). Their share in total assets and revenues of the sector is 11-12%. Here, the definition of SOEs includes only those firms where there are no other shareholders than the state, or joint-operation enterprises between the state and other ownership types (such as private, foreign and collective). Including also firms where the state is not the only shareholder would result in higher shares (recent estimates are not available, but see Molnar and Wang (Molnar and Wang, 2015[11]) for an estimate in 2008 using the Economic Census). The 2019 Economic Survey estimated that reducing state shares to minority level in the four commercially-oriented industries of accommodation, catering, wholesale and retail would boost long-term GDP per capita by 1.3%.

Figure 2.8. SOEs command a significant share in several services



Note: Based on above-threshold enterprises. SOEs refer to enterprises wholly owned by the state, companies with the state as the sole shareholder and joint-operation enterprises.
Source: OECD calculations based on National Bureau of Statistics data.

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High levels of state ownership per se, do not give rise to an uneven playing field if SOEs are well governed (OECD, 2016[12]), as OECD experience shows. The OECD Principles on the Governance of State-Owned Enterprises spells out best practices for governing SOEs (OECD, 2015[13]). According to the Principles, the state should disclose the rationale for the ownership for all SOEs and review it regularly. Any public policy objective should be clear and disclosed. Owing to legacy and state ownership being enshrined in the Constitution as the major ownership form, the rationale for owning enterprises is not a matter of discussion in China, though, as mentioned above, in purely commercially-oriented industries such as catering or wholesale sales it would be hard to see the benefits of state ownership. In contrast, public policy goals are clearly stated and often appear as primary goals for SOEs, in particular at the holding company level (Molnar and Lu, 2019[9]).

Reforms of SOEs, ongoing for decades already, focus on enhancing efficiency. A major way to improve efficiency is through mixed ownership reforms, where non-state owners become shareholders of formerly fully state-owned firms. Or it can be done the other way: cash-strapped private firms with intangible assets are acquired by technology-seeking SOEs. Alternatively, the target may not be technology, but upstream resources or downstream markets. Since the start of reforms in 2013, as of end-2019, nearly three quarters of subsidiaries of central SOEs have undergone mixed ownership transformation. The local equivalent would be 50%. Even though only a small portion of shares is typically involved in mixed ownership reforms, as the 2017 OECD Economic Survey pointed out, an important difference such reforms bring about is an additional monitor. A private investor may not prevent the expropriation of wealth from minority shareholders or tunnelling (i.e. taking funds away from listed firms by controlling shareholders or related companies without matching business transactions), but at a minimum can enhance transparency.

To improve performance of SOEs, stock option incentive schemes have been adopted by 119 listed central SOEs as of 2019. The combined benefits to top management cannot exceed 40% of their overall salary level and for mid-level managers and technical and operational staff the board of directors sets the level. Capping benefits for top managers is justified if a large gap between their and workers' salaries reduces workers' incentives. Indeed, recent OECD analysis shows that a larger salary gap between executives and workers is associated with lower productivity (Molnar, Wang and Chen, 2017[14]). In contrast, the salary gap appears to positively affect returns on assets or equity. Beyond the efficiency wage theory, the Chinese incentive-based salary system provides an explanation. ROA and ROE are often among the objectives of executives and thus the criteria by which their performance is assessed. This creates a mechanism where managers seek higher profits, which are reflected in their higher pay. Insofar as executives' salaries are not explicitly linked to productivity measures, they may seek to boost returns at the expense of productivity, for instance through mere volume expansion or through cutting corners in the pursuit of short-term profits.

In the case of most SOEs it is not the line ministry that exercises ownership rights as in several OECD countries such as Austria, the Czech Republic, Ireland and Mexico, but either a specialised agency or the Ministry of Finance on its own right or on behalf of the State Council (Box 2.1). A small share of SOEs belong to government agencies, which, as owners, exercise ownership rights. In this case the owner and regulator are not separated, though many of such SOEs are publishing companies or other service providers, whose activities are not necessarily regulated by their owner. Costs related to public policy objectives should be funded by the state and disclosed, which is currently not the case. As in many OECD countries such as Belgium, Canada, Hungary, Mexico, Portugal, Spain and Turkey, the state appoints the CEO of SOEs. Moreover, there is a transit path between government and SOEs, increasing the possibility of lobbying (which is currently not regulated as systematically as in OECD countries) and corruption. As of early 2022, 99.6% of subsidiaries of central SOEs under SASAC and 96.7% of local SOE subsidiaries had boards with external director majority. In the marketplace, the competitive neutrality principle should apply; the legal and regulatory framework for SOEs should ensure a level playing field and fair competition when SOEs undertake economic activities (OECD, 2009[15]). Unlike in some OECD countries such as Canada or Italy, where SOEs are exempt from the application of at least some specific laws and regulations that

apply for the private sector, in China there are no such exemptions. Instead, the major privileges of SOEs are manifest in implicit guarantees and administrative monopolies.

Box 2.1. SOEs are a diverse group

Chinese SOEs vary widely in size, ownership structure, supervision and other characteristics. In total, there are around 217 000 SOEs (as of end-2019) but when referring to SOEs, observers often talk about the 97 central government-owned enterprise groups supervised by the State Asset Supervisory Administrative Commission (SASAC). These 97 conglomerates include most of the mammoth SOE groups in monopolistic and oligopolistic industries. Central SOE groups managed by SASAC are often large conglomerates consisting of hundreds or sometimes even over a thousand firms. Those slow in reforming have up to dozens of public service institutions within the conglomerate. Fortune 500 includes 119 Chinese firms (as of 2019), of which 70% are SOEs, 81 are in the non-financial sector and mostly supervised by SASAC at all levels (80, from which 48 at the central level).

However, not all SOEs are managed by SASAC. One specific group of central SOEs include around 100 culture-related enterprise groups such as publishing houses and press/media groups operating in oligopolistic markets and their assets are managed by the Ministry of Finance (MoF). There are also five very large firms, the China Tobacco, China Posts, China Railways, China Publishing Group Corporation and the China Foreign Culture Group Corporation, the first three each alone representing a whole industry. MoF exercises ownership control in the case of those five enterprise groups on behalf of the State Council.

The Huijin Corporation manages all centrally-owned stand-alone financial firms on behalf of the MoF (27 in total as of 2019). In addition there are finance companies in the SOE groups, which are managed by their respective groups.

In addition to the SOEs managed by SASAC and MoF, several government agencies also operate enterprises, which comprise an additional type of SOEs. They are even more opaque than other SOEs as they are supervised by the government agencies that own them. According to the recent Implementing Regulations of the Budget Law, from this year, government agencies will have to consolidate their affiliates' activities into their accounts thereby increasing transparency.

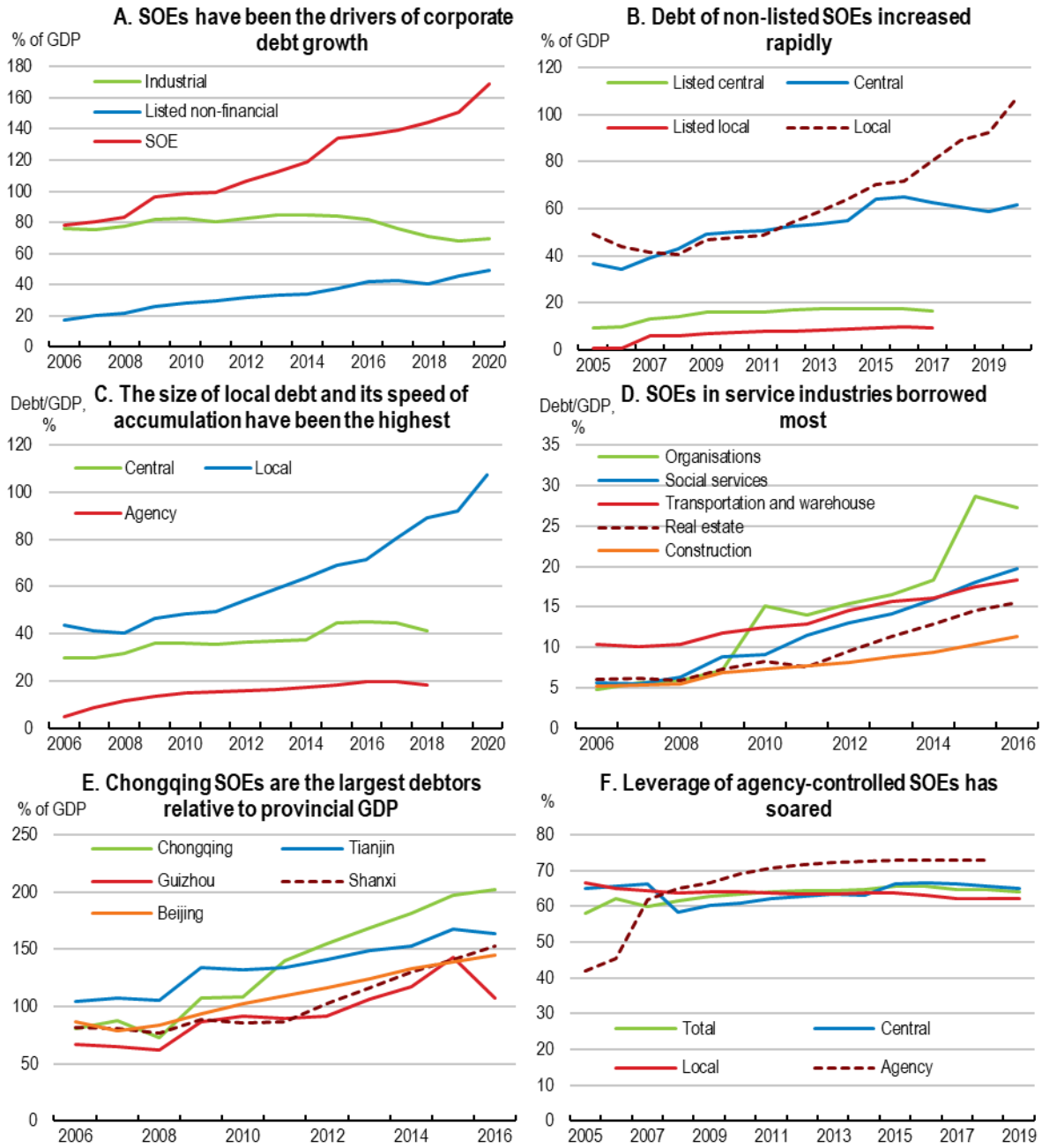
Furthermore, local governments also own enterprises represented by local SASACs. Local financial institutions owned by local governments are sometimes supervised by local SASACs, sometimes by local finance bureaus.

Source: Ministry of Finance and SASAC websites.

SOEs owe most of China's corporate debt, given their easier access to borrowing compared to private firms. SOE debt is mainly in the form of bank borrowing or direct borrowing from the market, but also includes trade-related and other liabilities. Among OECD countries, according to the most recent vintage of the PMR indicators, only Chile's SOEs have better financing conditions than private firms in general, though in several other countries such as Japan, Korea, Mexico and Switzerland, the playing field is to some extent tilted towards SOEs. For instance, in Korea and Japan, SOEs in some sectors have better financing conditions than private firms and in Japan, if an SOE performs both competitive and non-competitive activities, it is not required to separate them. At end-2019, China's SOE debt reached around 151% of GDP (Figure 2.9). Most of the debt is owned by non-industrial, non-listed SOEs at the local level. The top five most heavily indebted sectors include organisations and others (organisations refer to the communist party, youth league, women's associations etc.), social services, transportation and warehouse, real estate and construction – all are services industries. SOE debt relative to provincial GDP is the highest in the municipalities of Beijing, Chongqing and Tianjin and two western provinces, Shanxi and Guizhou.

Even though their debt is not particularly high, given their lower assets, SOEs under government agencies have the highest leverage (expressed as the debt-to-assets ratio), at over 70% vs. below 65% for all other types of SOEs. Deleveraging should accelerate and implicit subsidies to SOEs and other public entities should be phased out.

Figure 2.9. SOEs are heavily indebted



Note: SOEs refer to non-financial enterprises. Leverage is the debt-to-assets ratio. In Panel A, there is an overlap between industrial and listed non-financial firms as well as SOEs. In all panels, SOE debt refers to a comprehensive definition of debt based on financial statement data.
Source: Ministry of Finance and local finance bureaux.

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According to the OECD Principles, rules should be in place that ensure that all shareholders in SOEs are treated equitably. Due to the high concentration of ownership in China's companies (i.e. in the hands of the state), the conflict of interest between majority and minority shareholders is an issue (OECD, 2011[16]). Furthermore, state-owned enterprises should observe high standards of transparency and be subject to the same high quality accounting, disclosure, compliance and auditing standards as listed companies. In China, the corporate governance principles apply fully only to listed companies, even though many of the principles are considered in the context of SOE reforms. For instance, many non-listed SOEs have external directors (equivalent to independent directors in listed firms). However, there is room to increase disclosure and transparency for non-listed SOEs. To ensure the preservation of state assets, SOE activities should be better disclosed and audited, in particular their overseas investment, which have not yet been audited. This increases the risk of loss of state assets.

More competition in network industries

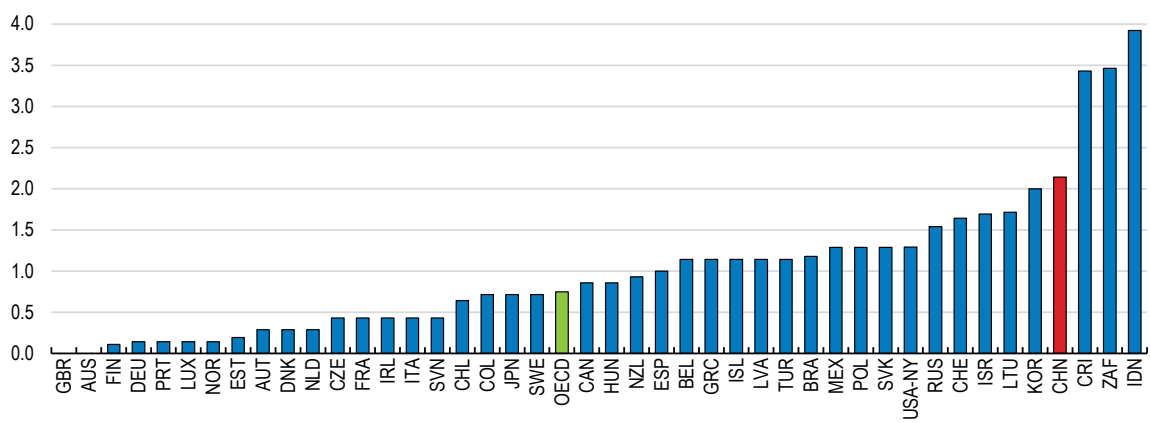
Most network industries in China are dominated by SOEs even though entry in most competitive segments has been liberalised. Some segments of network industries are natural monopolies characterised by high fixed and sunk costs and are therefore regulated. International experience shows that introducing competition where possible has led to higher productivity, better quality and, often, lower prices (OECD, 2007[17]; Høj et al., 2007[18]). A major challenge in injecting competition into traditional utility industries is the presence of vertically integrated firms that operate in both the non-competitive segment of the industry (i.e. fixed telephony network, transmission grid or rail tracks) and potentially competitive ones. In those cases securing third-party access to the non-competitive segment is essential for competition to develop. This is often achieved through some form of vertical separation (OECD, 2016[19]), either accounting, legal or ownership separation, and regulated access charges. In China, where vertical separation has been introduced, the largest players in all segments still remain SOEs.

Electricity supply is gradually more market based

Notwithstanding the series of reforms, in particular in the recent couple of years, the overall electricity regulation component of the PMR indicator shows that the sector is still more regulated than in OECD countries and most non-members, with the exception of Indonesia, South Africa and Costa Rica, among the countries for which the most recent vintage of the indicator is available (Figure 2.10). The higher score reflects widespread state ownership of not only the grid, but also at the generation and distribution levels. Also, state involvement through price regulation is more common than in most other countries.

Figure 2.10. The electricity sector is more regulated than in OECD countries and some non-members

Electricity sector regulation sub-component of the PMR indicator, 2018



Note: Data for the United States refer to January 2021, for China and Indonesia to 2020 and for Costa Rica and Estonia for 2019. Values of the indicator vary between 0 and 6 with a higher value indicating greater restriction. USA-NY is New York State of the United States.
Source: OECD Product Market Regulation database.

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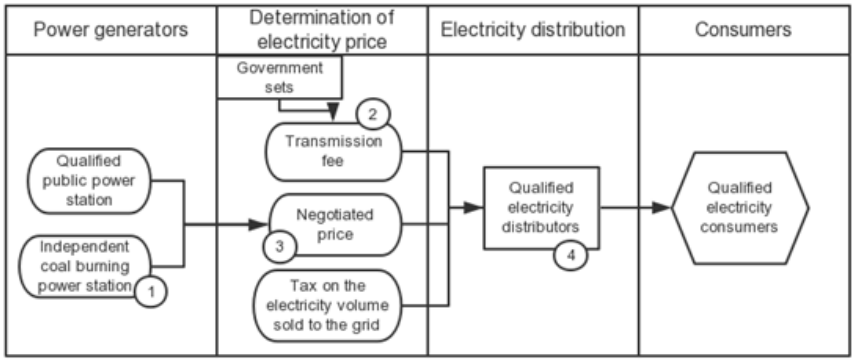
The electricity sector implemented its unbundling reform in 2002, separating power generation from transmission, then in 2012 the transmission and distribution functions were separated and in 2018, distribution companies were allowed to buy electricity from generators and to establish direct transactions with large consumers. In the generation segment, there have been fully foreign-owned firms for a couple of decades already.

A major initiative to enhance efficiency and introduce market forces in the electricity market is the pilot programme (Figure 2.11) across the country experimenting with various aspects of the reform since 2015. The pilot programme allows independent coal-burning power stations to enter the market and compete with public power stations selling electricity to the grid. At this point, however, independent renewable producers are not allowed to participate in the pilot programme. To raise efficiency further and also contribute to climate goals, renewable producers should be allowed to enter the market. A further important aspect of the pilot programme is making transmission fees more responsive to market forces. While in the past prices were controlled at all stages by the National Development and Reform Commission (NDRC), now a cost-plus pricing principle is experimented for the transmission segment. Furthermore, the price of electricity is negotiated between the power generators participating in the pilot scheme and the distributors. Distributors themselves are also a new aspect of the reforms as earlier the grid company was also in charge of distribution. Now distribution functions are assigned to separate firms and new entrants to the market are allowed. Furthermore, large-scale consumers can choose among distributors, which exerts competitive pressure in the distribution market. Government bodies, public service providers such as schools and hospitals and sectors such as finance will not be part of the reform even after it is extended to the whole country. Those consumers will retain access to electricity at subsidised rates and remain in the NDRC's electricity generation planning system. The 2020 notice on continuing the pilots emphasises timeshare-based contracts, registering of sales by transaction, technology neutrality and other principles.

Figure 2.11. Pilot programme for market-based pricing of electricity



Note: 1 refers to the reform measure to bring independent coal-burning generators into the regulatory system governed by the National Development and Reform Commission and the National Energy Administration. 2 is the reform measure to set electricity transmission prices according to the cost-plus principle, 3 is to establish an exchange platform where sellers (generators) and buyers (distributors) can negotiate the price and 4 is to establish electricity distributors.
Source: Guanyu jinyibu shenhua dianli tizhi gaigede ruogan yijian, Zhongfa 2015/9, in Chinese (Opinion on further deepening structural reforms of the electricity sector, 2015/9).

An increasing share of electricity is sold in market conditions: in the first half of 2020, 32.4% of overall and 58.3% of business electricity consumption. This surge of market-based electricity trade was the result of the reform making electricity trade market-based for business consumers (Fagai Yunxing No. 2019/1105). Households, agriculture, major public services are not part of this reform. As long as only business consumers can directly negotiate the price of electricity with power generators and other consumers have no such choice, efficiency gains cannot be fully reaped. In 2019, the transmission and distribution cost structure was also streamlined, making clear that only operating-maintenance and depreciation can be included in the costs and not any other type of cost unrelated to the transmission and distribution function (Fagai Jiagegui No. 2019/897). Currently two regional (Beijing and Guangzhou) and 33 province/city-level exchanges trade in electricity. Notwithstanding marked progress in reforms, there is room to make competition fairer and stiffer in electricity exchanges including by allowing renewables generators to participate and their operation to be more independent. The pricing for incremental power distribution is still to be explored. Furthermore, as of mid-2020, eight regions were piloting spot markets for electricity including in Sichuan, Gansu, Fujian, Shandong, Shanxi, Zhejiang, Nanwan and Mengxi and those markets will need time to develop and connect to medium- to long-term markets.

Shifting towards retail prices that reflect actual costs of generating, transmitting and distributing electricity, and incorporate the environmental costs of carbon-generated energy is key to enhancing efficiency. Electricity price reform is being piloted with cost-plus pricing or direct negotiation between the generator, the buyer and the grid company, which should result in lower energy prices. Indeed, in the pilot provinces of Guangdong and Zhejiang, the introduction of wholesale electricity markets led to a substantial drop in prices: market prices fell ca. 28% and 30%, respectively (Xie, Xu and Pollitt, 2020[20]). In most OECD countries retail prices are not regulated because reforms have been introduced that have made market effectively competitive.

Innovative schemes are being adopted, such as Demand Response, which is a mechanism that induces change in electricity consumption pattern by offering pricing signals and incentives, thereby reducing peak demand. 28 out of the 36 OECD countries for which the latest vintage of the PMR indicator is available, allow consumers to sell demand response to third parties, among which 17 allow all types of consumers to do so. China introduced the scheme in 2014 on a pilot basis with the aim of addressing summer peak load and the associated network security issue. Over the years, an increasing number of cities and provinces joined and implemented their own pilot schemes (Table 2.1). Various pilots use differing compensation mechanisms, for instance, Jiangsu charges a surcharge for large consumers in peak hours, while Henan subsumes the costs of demand response into the province-level price of electricity distribution. Notwithstanding the relatively early piloting among emerging economies, there is ample room to improve the demand response system. First of all, a mechanism for the operation, including funding and pricing need to be established. The notice on new demand-side management under supply-side structural reforms of September 2017 issued by NDRC and six agencies (Fagai Yunxinggui No. 2017/1690) clearly states that rational spending on demand response can be absorbed into electricity costs. However, it is not clear which existing scheme, if any, is considered best by independent evaluators so that it could be promoted countrywide. Participants should be better trained, including a more professional demand response load integrator, who could provide information and services supporting participation by consumers and consumers should be better informed about the incentives and should have stronger price-consciousness (Guo, Yang and Chen, 2020[21]).

Table 2.1. Demand response pilots continue

Demand response events and their impact by year

Year	Number of demand response events	Decreased load (in trillion W)	Decreased electricity (in trillion Wh)
2014	1	55	27.5
2015	18	2160.56	1214.81
2016	9	4191	2827
2017	1	26	26
2018	6	1734.48	1494.81
2019	17	7037.7	81187.3

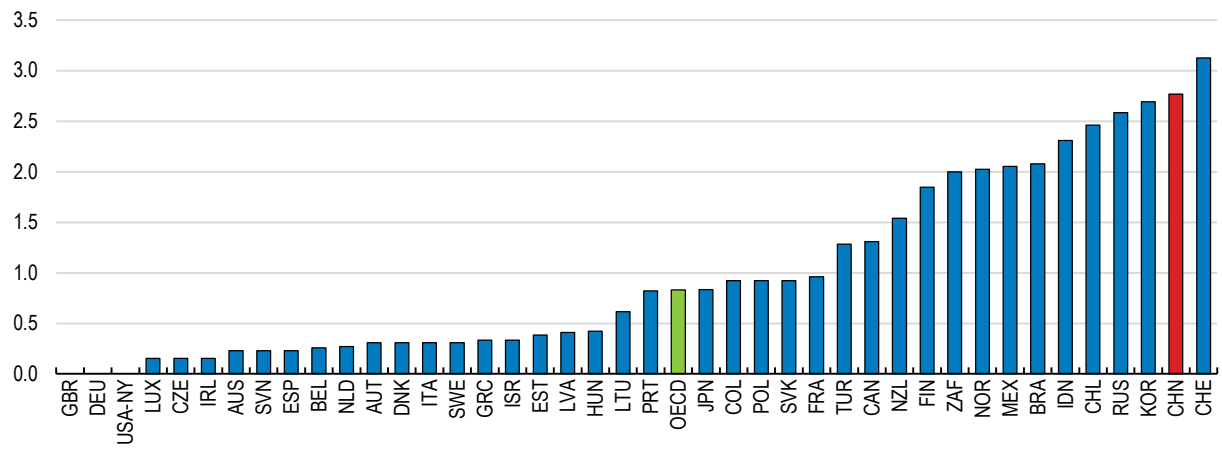
Note: Refers to all demand response events piloted across the country.
Source: Guo, P., D. Yang and C. Chen (2020), "Woguo dianli xuqiu xiangying xianzhuang fenxu yu fazhan jianyi", in Chinese, "Analysis of the state of demand response and proposals for reform in China", in *Dianli Juece Yu Yuqing Cankao*, (Electric power decision and public opinion reference) available at http://mm.chinapower.com.cn/zx/zxbg/20200811/27296.html accessed on 15 October 2020.

The gas sector has started to open up

Reforms in the natural gas sector are more recent than in electricity, manifesting in a high PMR score second only to Switzerland (Figure 2.12). Even though hundreds of private players have entered the market, state ownership is still dominant across all segments. In addition, price regulation also continues in most segments, including access to the pipeline, access to liquefied natural gas (LNG) terminals, gasification facilities and other related costs.

Figure 2.12. The gas market is among the most regulated

Natural gas regulation sub-component of the PMR indicator, 2018



Note: Data for the United States refer to January 2021, for China and Indonesia to 2020 and for Costa Rica and Estonia to 2019. Values of the indicator vary between 0 and 6 with a higher value indicating greater restriction. USA-NY is New York State of the United States.
Source: OECD Product Market Regulation database.

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The natural gas sector is in the midst of fundamental reforms. Although exploration and production by multiple players have been encouraged for a while already (in 2017 the national oil companies had to relinquish their exploration rights for blocks where investment did not reach the minimum requirements so that other players can enter the market), since end-July 2019 foreign companies can operate fully owned entities to explore oil & gas blocks. Before, they had to set up a product sharing joint venture with one of the four large state-owned oil companies. While being able to work without local partners is certainly an incentive to enter the market, the implementation details are still to be announced before foreign fully-owned explorers can consider entry. The obtaining of upstream industry data for investment decisions appears to be a particular challenge.

A key achievement of gas sector reforms is vertical separation. The main transmission network was delineated from the three large companies as recently as December 2019. A re-organised holding company, the National Oil & Gas Pipeline Group gained control of the pipeline assets. In May 2019, the oil and gas pipelines opened up to third party access and investment in pipelines is now encouraged by firms of all ownership types (Fagai Nengyuan Gui No. 2019/916). City gas and heating providers operate on a special license system and can purchase gas from LNG ports or through the pipeline. There are several hundreds of such companies, with over a hundred privately owned. These companies are granted monopoly positions through licenses in their jurisdictions and they compete with each other for LNG ports, where capacity constraints may be binding (and access charges are regulated). These companies could be the prospective entrants to the pipeline and storage business. Some large city gas companies are building their own LNG port to meet pent-up demand for gas and overcome capacity constraint in existing LNG ports. As the share of the sector increases in power generation (IEA, 2019[22]), creating a competitive market will be ever more important. Bringing down prices through further liberalisation by publishing the implementation details for foreign companies' entry to the exploration and production segment, by increased transparency with regard to data in that segment and by applying the principle of competitive neutrality in other competitive segments would create greater demand and contribute to energy transition to reach climate targets.

The first major price reform in the natural gas sector was allowing gas companies to sell production in excess of quotas at market prices in 1982 (O'Sullivan, 2018[23]). 2011 marked the switch from cost-plus pricing to formula-based pricing, where the price of gas was linked to that of substitutes. The gas market used to be very fragmented with multiple pricing depending on the origin of the gas and over the years the pricing schemes have been gradually streamlined. Interprovincial transmission prices are determined at the national level, while distribution and sales prices at the province and prefecture levels (with the exception of private pipelines). Lifting of price control in competitive segments of the natural gas industry would lead to a higher level of production and lower production costs, though only if it is done simultaneously with the introduction of market competition mechanisms (He and Lin, 2017[24]). Due to the presence of monopolies, the lifting of price controls alone would boost the profit margins of the incumbent, thus also vertical separation and introduction of competition is crucial, as discussed above. In more than half of OECD countries, gas prices are not regulated at all. Where they are, many countries follow the best practice of setting retail prices based on the costs of the most efficient supplier in order to provide suppliers appropriate incentives. With the ongoing deregulation drive, gas prices could be market determined where competition has sufficiently developed on the supply side, like in some provinces with multiple gas sources or with multiple LNG terminals as on the demand side, gas distribution companies are already competing for LNG terminal access.

There is room for more competition in transportation and telecom services

Competition in rail passenger transport may be hard to introduce, but in rail freight transport it could progress further. Only in 22 OECD countries is there competition in railway passenger services and in 12 there is not (in the rest, there are no railway passenger services). In the rail freight industry, there are a few competitors on non-essential lines point-to-point who need to obtain a license by route. Since 2018, foreign firms can enter the market, but so far there has not been much interest as traffic control is centralised and prices are regulated.

In sectors such as internet content services, oligopolistic market conditions hinder the formation of start-ups as the mega-platforms which are the basis for applications are owned by a few large players. As the 2017 Economic Survey recommended, mandatory sharing of internet platforms would facilitate the commercialisation of computer applications and thus boost start-ups where entry costs are otherwise relatively low. In late December 2020, the State Administration for Market Regulation opened an antitrust investigation into Alibaba's alleged forcing of merchants to sell exclusively on its platform. Both merchants and rivals complained about the same behaviour and the major rival has even taken Alibaba to court.

Investigations for abuse of power by the antitrust authority are welcome and should be more widespread to curb anti-competitive behaviour. The consolidation of market supervision functions under the newly established State Administration for Market Regulation in 2018 paved the way for more effective implementation of antitrust laws. Furthermore, consumers often have no choice of provider for network services, as networks are not shared, in particular the last mile. Vertical separation in fixed line networks would enhance competition and hence consumer benefits. The digitalisation section of this chapter discusses entry barriers for foreign firms in the markets of digital services.

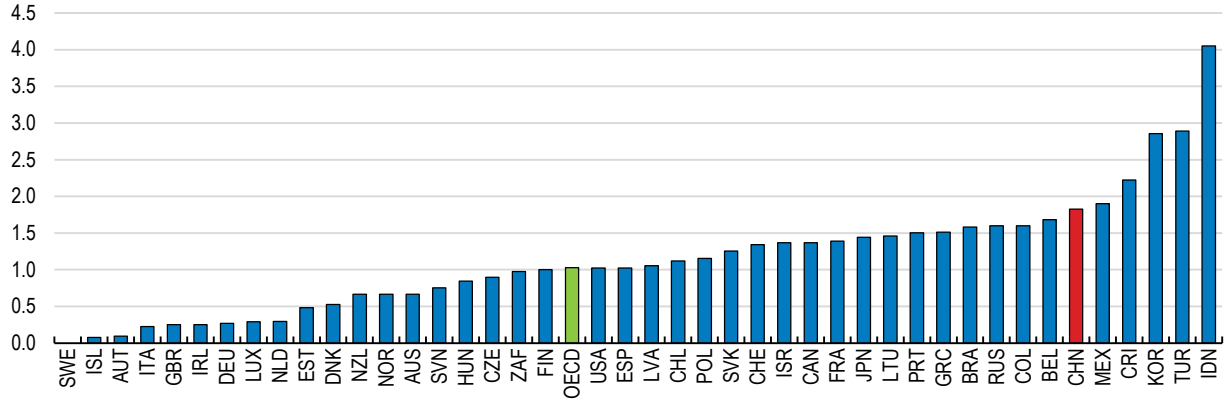
Removing remaining price controls where competition has developed

The move towards an increasingly market-based economy and the resulting stiffening of competition have brought about the elimination of a large number of price control measures. A large-scale price liberalisation took place in 2015, lifting controls on prices of 24 goods and services. Ceilings on drug prices were lifted (after imposing them in 2000) with the exception of selected categories such as psychotropic pharmaceuticals. The price of tobacco leaves, the last remaining agricultural product with price control, was partially liberalised. A minimum price, however, remains, with the aim to protect farmers. Transportation costs, including container loading fees, port service fees, and the price of bulk cargo and passenger rail transportation as well as domestic air cargo and air fares of some domestic airlines for passenger transportation have also been liberalised in the same round.

Nonetheless, China retains substantially more price controls than many OECD member and non-member countries for which data are available (Figure 2.13) as competition is developing slower in those areas. Price controls prevail not only in network services with a natural monopoly component such as gas or electricity, but also in inherently competitive industries such as mobile communications and transportation. Domestic airfares for routes without competition are set by the government, with the exception of business and first class tickets. The central government also sets the prices for rail cargo and passenger tickets for hard (i.e. second class) seat and berth for railways owned by central SOEs. Prices of domestic air tickets, for example, had also been controlled in almost all OECD countries until the early 2000s and as of 2013, they had remained controlled only in Israel and still in 2018. Non-member countries, such as Argentina and Indonesia, also implement price controls. Road freight tariffs are also regulated, while in almost all OECD countries they are determined by the market, except in Colombia and Turkey.

Figure 2.13. Price controls are more prevalent than in most OECD countries

Price controls sub-component of the PMR indicator, 2018



Note: Data for the United States refer to January 2021, for China and Indonesia to 2020, while data for Costa Rica and Estonia to 2019. Values of the indicator vary between 0 and 6 with a higher value indicating greater restriction.
Source: OECD Product Market Regulation database.

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The latest round of price deregulation became effective from 1 May 2020. This has cut the number of items subject to price controls by nearly 30% relative to the last 2015 price list. This latest price liberalisation drive includes some air and rail tickets and even more importantly, the offer and final sale prices for electricity and natural gas (for price reforms in the electricity and has sectors, see the respective sections above).

Price controls for professional services have been rapidly falling. Fees for seven professions and services were liberalised from 2015 (Fagai Jiage No. 2014/2755), including for legal services (with the exception of criminal, administrative and compensation-related cases, where guided prices remained), auditing, real estate agencies, building management (with the exception of social housing), residential area parking fees, tax-related verification service charges and asset valuation.

While the National Development and Reform Commission controls prices of major goods and services, the regulation of a large part of services belongs to the sub-national level and there are differences in the speed at which price regulations are lifted across regions. Beijing, for instance, liberalised prices for accounting and legal services from January 2016 and April 2018, respectively, and as of now, prices for most professional services, with the exception of notaries and some non-competitive services such as healthcare services in public hospitals, are determined by the market.

Free trade zones mushrooming around the country are the leading laboratories experimenting with services liberalisation, even though may be inefficient and may suffer from overinvestment as the 2019 Economic Survey pointed out. For instance, Beijing has undertaken various measures to gauge liberalisation for services in the municipality. In sectors such as accounting and auditing, services trade in Beijing is as barrier-free as in OECD countries and in engineering services even more so, as measured by the OECD Services Trade Restrictiveness Index (STRI) (Box 2.2). In telecommunications, digitally-enabled services and commercial banking, in contrast, there is still ample room to reach the level of services trade liberalisation in OECD countries. In those three areas, liberalisation measures by sub-national authorities relative to the national level, have been limited.

Box 2.2. Beijing municipality is advancing on services liberalisation

In the past years, the Beijing Municipal Bureau of Commerce has been leading a series of pilot programmes to ease conditions for trade and investment in certain services sectors. In May 2015, the State Council approved the Comprehensive pilot programme for further opening up the service sector in Beijing, which envisaged reforms in key sectors such as cultural and educational services, financial services, and health services. In 2017, the State Council agreed to expand the initial pilot programme to transport services, enterprise management and professional services. In 2019, the Work Plan of Fully Promoting the Comprehensive Pilot Programme for Further Opening-up the Service Sector in Beijing set out an action plan to deepen liberalisation, including in sectors related to science and technology services and Internet information services. Most pilot measures have been extended to the whole country with the exception of tourism and telecommunications services, non-profit organisations and audio-visual materials.

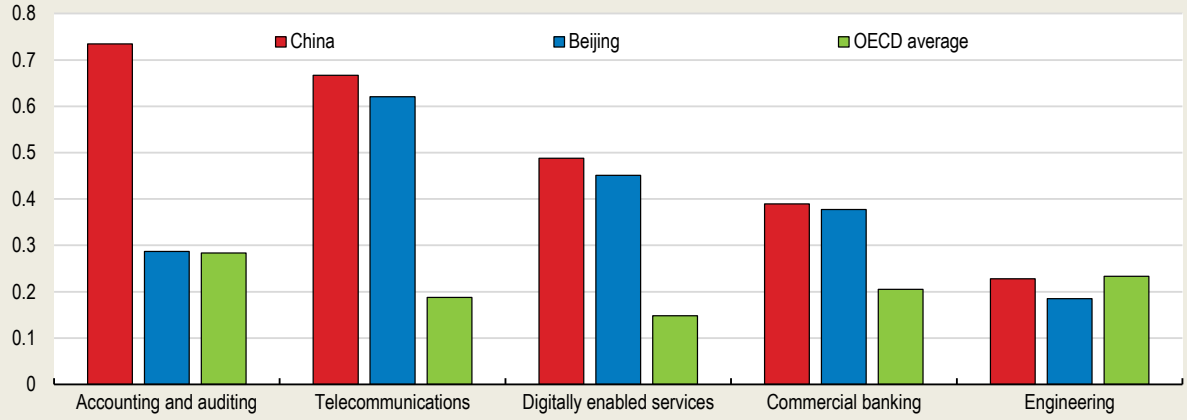
The measures implemented under these pilot programmes contributed to lowering barriers to services trade in Beijing, particularly in some professional services, financial services and services underpinning digital trade (Figure 2.14). The impact is highest in accounting and auditing services, where the level of restrictiveness in Beijing has decreased by 60% on the OECD STRI scale compared to the rest of China. This is due to reforms that lifted nationality requirement for accounting services, allowing foreign accountants to practice in Beijing, as well as measures easing the recognition of foreign qualifications and simplifying procedures for work permits and visas. In commercial banking, barriers related to branches of foreign banks were lifted. Measures affecting digitally-enabled trade include lifting foreign

equity limits on Internet access services, easing conditions on the use of VPN services and on cross-border digital payments made with foreign credit cards.

However, there is scope for further improvements, particularly in telecommunications services and the horizontal regulatory environment affecting digitally enabled services. In September 2020, the State Council approved another work plan to continue the liberalisation of services industries in Beijing through a pilot free trade zone for services, covering sectors such as technology and financial services, e-commerce services, tourism and healthcare.

Figure 2.14. Trade barriers in key services sectors are lower in Beijing relative to the national average

OECD Services Trade Restrictiveness Index in selected sectors, 2019



Note: The STRI indices take values between zero and one, one being the most restrictive. "Digitally enabled services" denotes services that can be supplied via electronic networks in the context of the OECD Digital STRI (Ferencz, 2019[25]).
Source: OECD STRI database, 2019.

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Less discrimination and more opportunities for the private sector

The outbreak unveiled the vulnerability of small and micro firms, most of which tend to be privately owned. Private firms are important players, they provide over 50% of enterprise taxes, over 60% of value added, over 70% of technological innovation outputs, over 80% of urban employment and constitute over 90% of firms. The size of the damage also highlighted the necessity to enact reforms in support of smaller firms and give them a greater chance to survive in the competitive arena. Private firms do not face a long list of sectors where entry is restricted, unlike foreign firms, but still do not enjoy a level playing field due to (i) administrative monopolies, mostly granted to SOEs, (ii) their small size, inhibiting their participation in larger project tenders, (iii) their more modest state of finances, making it hard to sell goods on commission, and (iv) other regulations potentially disadvantaging them. Private enterprises' concern is related to the security of their assets, burden of taxes and charges, access to financing and fair competition.

A major way of levelling the playing field for private (and foreign) firms is by dismantling administrative monopolies, which are granted by regulations and benefitting mostly SOEs. The Fair Competition Review Mechanism (FCRM) - brought into life in 2016 – in three years got adopted all around the country, but its effectiveness varies widely as it is not always enforced properly or according to regulations. Occasionally, low quality and ineffective implementation of the Review allows documents violating the Review standards to pass the process. The lack of clarity about to what targets the mechanism should be applied and a lack of awareness of what fair competition is as well as of capacity to handle complex cases at the local level are major factors hindering the effectiveness of the system. Equally importantly, violators are not held accountable for their action. There are also insufficient third party assessment institutions. To address

some of those issues, a Notice was published by four ministry-level agencies (the State Administration for Market Regulation, the National Development and Reform Commission, the Ministry of Finance and the Ministry of Commerce) in May 2020 (Guoshijian Fanlongduan 2020/73), which spells out the major areas of application of the review. Those include market entry, industrial development, investment promotion, tendering, code of business conduct, qualification standards and other regulations related to activities of market players. Any clause that potentially generates unequal conditions for market entry or exit, grants exclusive rights to deliver certain services, affects equal access to production factors, discriminates in the supervision process will now be targeted by the FCRM. The Notice also requires capacity building and regular training, where necessary.

The Notice is an important step in the right direction, but there is still room for improvement. The most powerful tools to address the issue of administrative monopolies are strengthening the rule of law and restricting the power of administrative departments to prevent the creation of administrative monopolies, as recommended by the 2019 Economic Survey. There is also room for providing clear and detailed implementation rules to limit the discretionary power of implementing departments. Furthermore, to achieve tangible results, deadlines for administrative bodies to perform their duties should be specified and penalties imposed for delay. Currently, there is no specific mechanism through which existing administrative monopolies could be dismantled but the level above the given body in the administration is charged by doing that. Technology neutrality should be observed as technology requirements are often used to exclude competitors. Where there is doubt about potential anti-competitive clauses in tendering and other documents, the competition authority should be consulted. The FCRM deals with potential anti-competitive elements in new regulations while the existing stock of regulations is also being reviewed, as of end-2000, 1.89 million documents have been audited, among which nearly 30 000 have been amended. Since the institutional reforms in 2018, when the function of preserving competition neutrality was unified at the State Administration for Market Regulation, over 100 new administrative monopoly cases have been investigated. In June 2019, a new regulation limiting administrative power abuse and anti-competitive behaviour was issued, on the base of which from September that year investigation was carried out in specific sectors and areas prone to such behaviour including pharmeceuticals, transportation, construction, tendering and government procurement.

Furthermore, as the major strategy to drive the economy back to its original growth path is through investment in “new infrastructure”, such as 5G, smart cities and new energy development, where SOEs are key players, there is a risk that the divide with the private sector would further widen. Against this backdrop, it is crucial to find ways for private participation. The Opinion on supporting the private sector to participate in transport infrastructure development (Fagai Jichu No. 2020/1008) issued on 8 July 2020 specifies measures to support private entry to this dynamic area. Most importantly, the Opinion prohibits measures that hinder private entry, such as the requirement to establish a local subsidiary or setting the conditions so that private firms cannot qualify for public tenders. The 2019 Economic Survey recommended the abolishment of those specific measures and it is a welcome step to explicitly mention them in the Opinion. A more rigorous application of the Fair Competition Review Mechanism to new regulations and the revision of non-complying measures in the existing stock of regulations are necessary to make the playing field more even. The Opinion proposes to split tendering by stage or by process for railways as long as it does not hinder consistent operation of the network. This opens up possibilities for more private firms as most tend to be of smaller size. The Opinion encourages timely settling of construction-related debt to private firms and prohibits irrational charges. Smart parking areas, intermodal transport, highway service areas are among those potentially attracting private interest. This recent Opinion follows the Opinion by the Central Committee and the State Council on creating a more conducive environment for private sector reform and development last year (Zhongfa No. 2019/49).

Some regulations, which originally aimed at helping SMEs, may end up discriminating against them. For instance, State Council Order No 728, effective from 1 September 2020, guarantees payments to small and medium enterprises. It specifies that government organisations must pay SMEs for services or goods

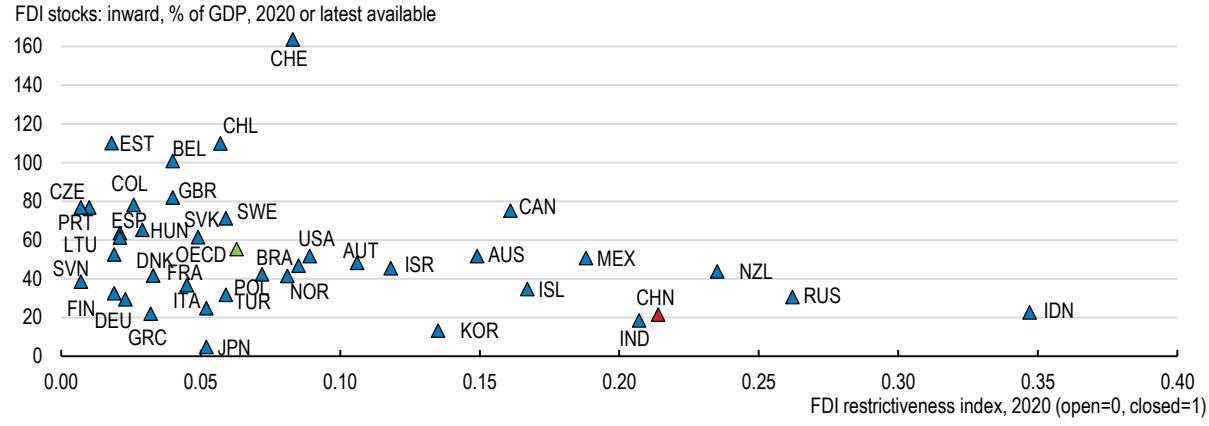
within 30 days of delivery, or at the maximum within 60. Delays are publicised and may even weigh on social credits (a national reputation system based on monitoring of agents' behaviour, discussed in the 2019 Economic Survey). In addition, late payers incur interest either according to at least the ongoing 1-year lending rate or if not agreed explicitly, 5/10 000 per day. While such clauses certainly ensure that payments are made, or if not, the debtor bears the consequences, they may also discourage potential procurers to purchase from SMEs, which could exacerbate their vulnerable situation. To avoid providing an advantage to larger firms, payments should be guaranteed to all firms and non-payment should be penalised, regardless of the nature or size of the creditor.

In the retail sector, a major source of discrimination for smaller firms is the requirement to leave products at the retail outlet on commission. Once the goods are sold, the supplier is paid, if they are not sold, the supplier has to collect them. As smaller firms operate with tighter liquidity and need faster turnover of funds, they can hardly afford placing their goods on commission in department stores, therefore limiting their distribution channels. The practice of requiring suppliers to place goods on commission should be abolished.

Gradually more welcoming environment for foreign firms, but much more to do

China is a favoured destination for foreign direct investment (FDI) in general, but its accumulated stock relative to GDP is still small at around 20%, compared to the OECD average of 45% (Figure 2.15). Restrictions on foreign investment – measured by the OECD FDI Regulatory Restrictiveness Index - are higher than in any OECD country or some major BRIICS economies such as Brazil or India, though lower than in Indonesia or Russia. The majority of the restrictions is in the form of limiting the shares that foreign firms are allowed to hold in a Chinese company, but to a lesser extent, there are restrictions on foreigners' filling in key positions, thereby reducing potential knowledge spillovers. Due to the caps on ownership of foreigners in Chinese firms in a number of industries, foreign investors are obliged to establish joint ventures with local partners. Such obligations are being abolished in some sectors such as gas exploration (as discussed above) and some financial services, but they should be abolished altogether to fully reap the benefits of having foreign firms in the market. Stronger protection of intellectual property rights would likely make foreign firms to bring more advanced technology. The practice of forced technology transfers should be abolished and parties soliciting such transfers should face deterring fines. Although such transfers have not been allowed by any government document, they used to be widespread practice as reported by foreign investors. The 2019 Foreign Direct Investment Law and its implementing regulations explicitly prohibit forced technology transfers.

Figure 2.15. Countries less restrictive towards FDI tend to be more attractive



Note: Index values are between 0 and 1 with higher values associated with greater restrictions. The overall index covers equity, screening, employment of foreign personnel in key positions and other restrictions. Outliers with very high FDI-to-GDP shares such as Ireland, Luxembourg and the Netherlands are deleted for better legibility.
Source: OECD FDI Statistics and OECD FDI Regulatory Restrictiveness Index databases.

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China is a top FDI destination owing to its vast market, high growth and good quality of its infrastructure. It is among the most favoured destinations for many economies, including large investors as well as OECD and G20 members (Table 2.2). Among economies that invested abroad cumulatively over USD 10 billion, China is the No 1 destination for six, including Korea, for which China accounts for 32%. China is the second most important destination for Japan with 11% and Indonesia with 4%. For some non-OECD small island states, the high share for China in their overall outward direct investment may be related to round tripping (Chinese investors re-investing in their country).

Table 2.2. China is a favoured direct investment destination for many economies

FDI stock to China, its share and ranking (2019)

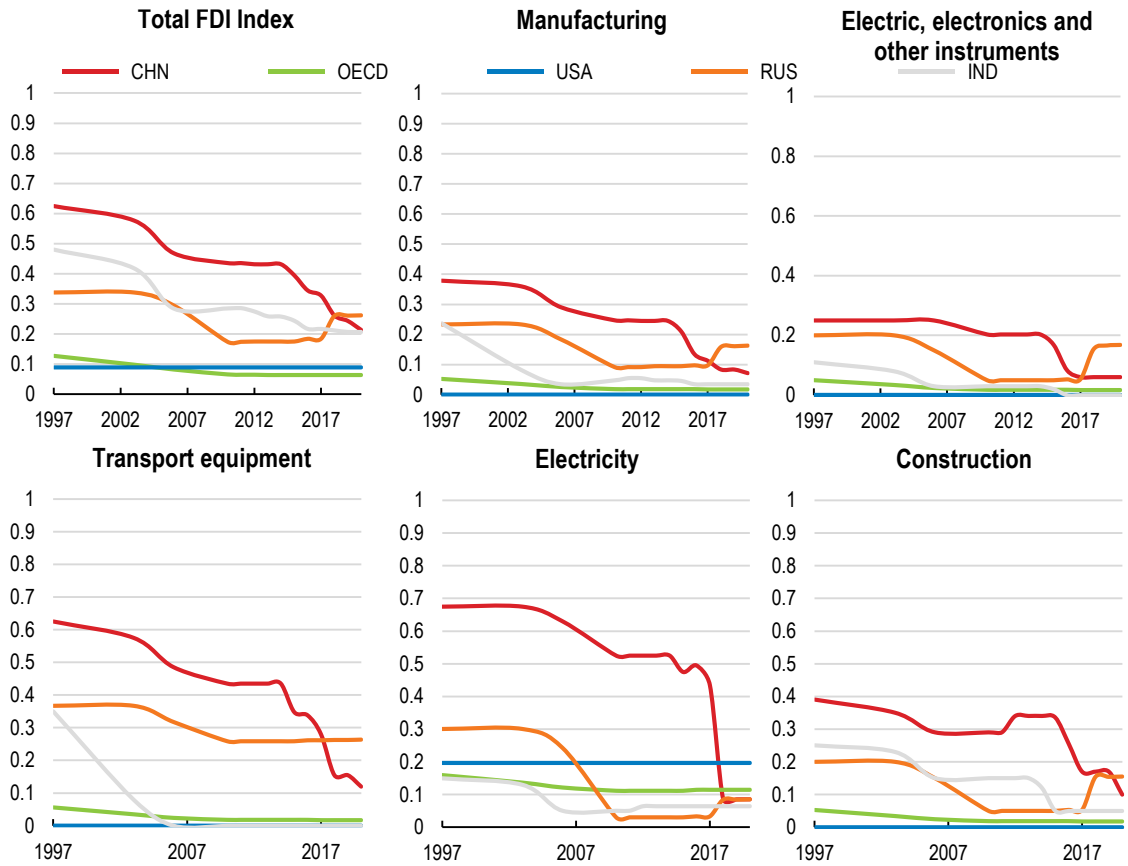
	Total FDI (USD billion)	FDI in China (USD billion)	China's share (%)	China's rank
Hong Kong, China	1,887.2	1,430.3	75.8	1
Singapore	641.7	102.5	16.0	1
Korea	243.9	64.0	26.2	1
Chinese Taipei	94.7	32.2	34.0	1
Samoa	28.8	27.2	94.4	1
Macao, China	18.5	12.0	65.2	1
British Virgin Islands	1,314.8	316.8	24.1	2
Japan	1,645.0	147.9	9.0	2
Mauritius	145.5	26.7	18.3	2
Indonesia	25.1	0.6	2.2	4

Note: The table is limited to economies that report to the IMF's Coordinated Direct Investment Survey and to FDI stock over USD 10 billion.
Source: IMF Coordinated Direct Investment Survey (CDIS).

Barriers to foreign investment have fallen significantly in particular following the enacting of the foreign direct investment law in January 2020 (China completed the negotiations with the European Union on an investment treaty in late December 2020). The Measures on Handling Complaints by Foreign-Invested Enterprises covers areas such as procurement, business secret protection, forced technology transfer and foreign capital transfer and its effective implementation is crucial for a greater opening up of the economy to foreign direct investment, which features as a target in the ongoing 14th Five Year Plan. In several industries, there is further room for removing the remaining ones. In manufacturing, as in most other countries, there are fewer restrictions than in services (Figure 2.16). Electronics and car manufacturing, industries tightly integrated into global value chains, saw a sharp removal of barriers in recent years. Easing of restrictions on foreign equity ownership in electricity (which comprises generation and transmission) has been impressive with the index value falling below the OECD average. In the construction industry, barriers were originally lower, but the extent of liberalisation is also more limited, hence leaving room for further reforms. Since 2018 restrictions on the share of foreign technical personnel in foreign construction firms located in free trade zones have been eased.

Figure 2.16. FDI restrictions in manufacturing, utilities and construction eased

OECD FDI Regulatory Restrictiveness Index, selected years 1997-2020



Note: Index values are between 0 and 1 with higher values associated with greater restrictions. The overall index covers equity, screening, employment of foreign personnel in key positions and other restrictions.
Source: OECD FDI Regulatory Restrictiveness Index database.

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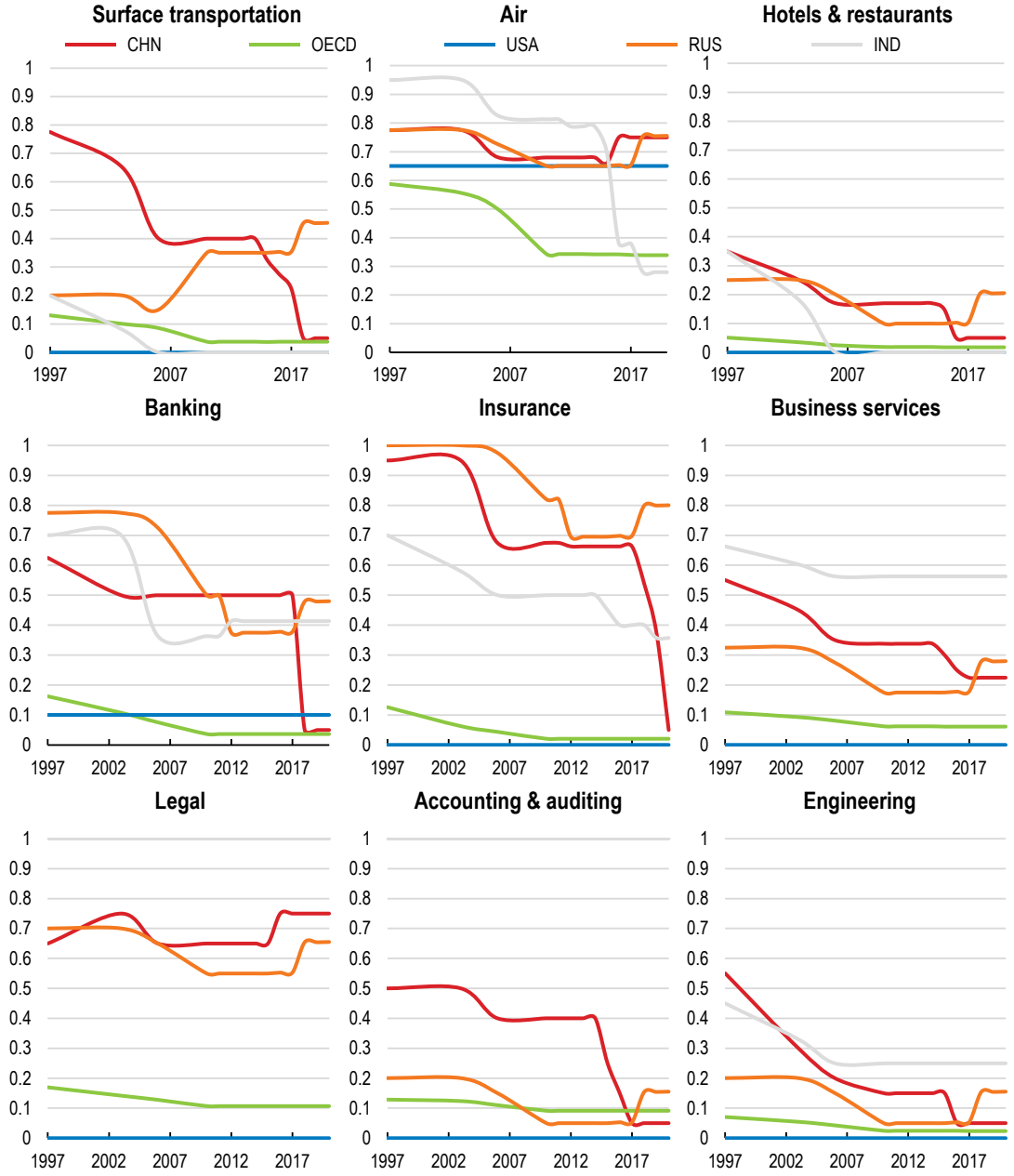
Barriers to foreign ownership tend to be much higher in services industries, as in OECD countries (Figure 2.17). It is now as easy for a foreign entity to own a road transport company as in an OECD country, but much more difficult to enter the airline business. Moreover, it became more difficult to enter air transport than it was five years ago owing to new screening regulations. The recent liberalisation wave in the financial sector made foreign entry to the banking sector easier than in the United States or major non-OECD economies, and since 2020 foreign firms are allowed 100% ownership in insurance companies. Reducing barriers to foreign entry to business services is particularly important as that industry produces inputs to many other sectors, thus has a large impact on overall productivity.

Figure 2.17. Room for easing FDI restrictions in several services industries

OECD FDI Regulatory Restrictiveness Index, selected years 1997-2020



Note: Index values are between 0 and 1 with higher values associated with greater restrictions. The overall index covers equity, screening, employment of foreign personnel in key positions and other restrictions.
Source: OECD FDI Regulatory Restrictiveness Index database.

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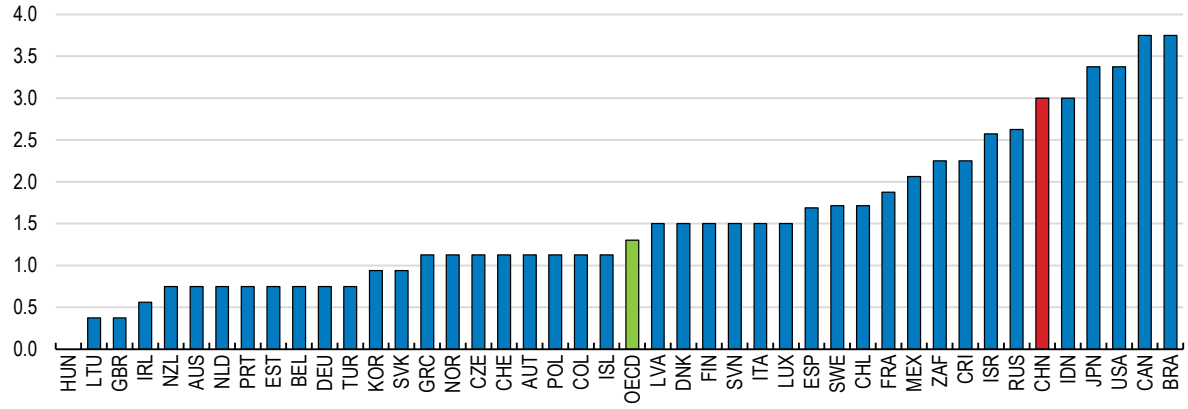
Professional service providers, including lawyers, accountants, architects and engineers also face unsurmountable barriers if they think of practicing in China. Lawyers and civil engineers must be Chinese nationals to be able to practice their profession. As China does not recognise multiple citizenship, effectively foreigners have no access to the market. Accountants do have the possibility to become Certified Public Accountants (CPAs), but they must have a couple of years' experience in China and be recommended by a Chinese accounting firm. Foreign lawyers, for instance, could bring a wealth of experience in areas where the domestic practice is nascent, such as intellectual property cases and could also contribute to strengthening the rule of law in general.

Restrictions on foreign firm conduct in China are not limited to equity participation (which have been lifted significantly in recent years), but especially in services industries, also cover the various aspects of service delivery. For instance, in the transport industry, cabotage is neither allowed for foreign road freight transport firms nor for long-distance passenger coaches. International evidence shows that airline liberalisation leads to lower fares not only due to the removal of monopoly rents but also to greater X-efficiency, (i.e. closer to optimal efficiency) (Button, 2019[26]). Open Sky Agreements (OSA) allowing airlines flying between any points of two economic areas are an important source of competitive pressure in passenger air transport. China has not signed such an agreement yet with the United States and the European Union. Further OSAs would bring about competitive pressure for domestic carriers and make them more efficient, including through the emergence of low-cost carriers, of which there are relatively few in China (Liu and Oum, 2018[27]). Freeing 8th and 9th freedoms (cabotage traffic between two points in a country when the carrier originates in a foreign country and cabotage between two domestic points by a foreign carrier, respectively) allows international carriers to operate between domestic locations, stiffening domestic competition. Further OSAs and cabotage rights would bring about similar benefits in the form of lower prices and better service, as they have in other countries.

Differential treatment of foreign suppliers is apparent in government procurement, where the PMR value is high (Figure 2.18). Procurement contracts are reserved to domestically registered firms and no matter whether it is delivering goods or services or undertaking public works, suppliers must at least partially use domestic content. As the 2019 Economic Survey pointed out, in local jurisdictions this goes a step further: firms are required to locally register to be able to bid for local procurement contracts. Excluding foreign or non-local domestic providers from the public procurement process foregoes the opportunity of efficiency gains through enhanced competition and may lead to the waste of public funds. Joining the WTO's Government Procurement Agreement and following OECD best practices in the field would help enhancing efficiency in the public procurement market and reduce costs.

Figure 2.18. Government procurement is subject to stringent regulations, 2018



Note: Data for the United States refer to January 2021, for China and Indonesia to 2020 and for Costa Rica and Estonia to 2019. Values of the indicator vary between 0 and 6 with a higher value indicating greater restriction.
Source: OECD Product Market Regulation database.

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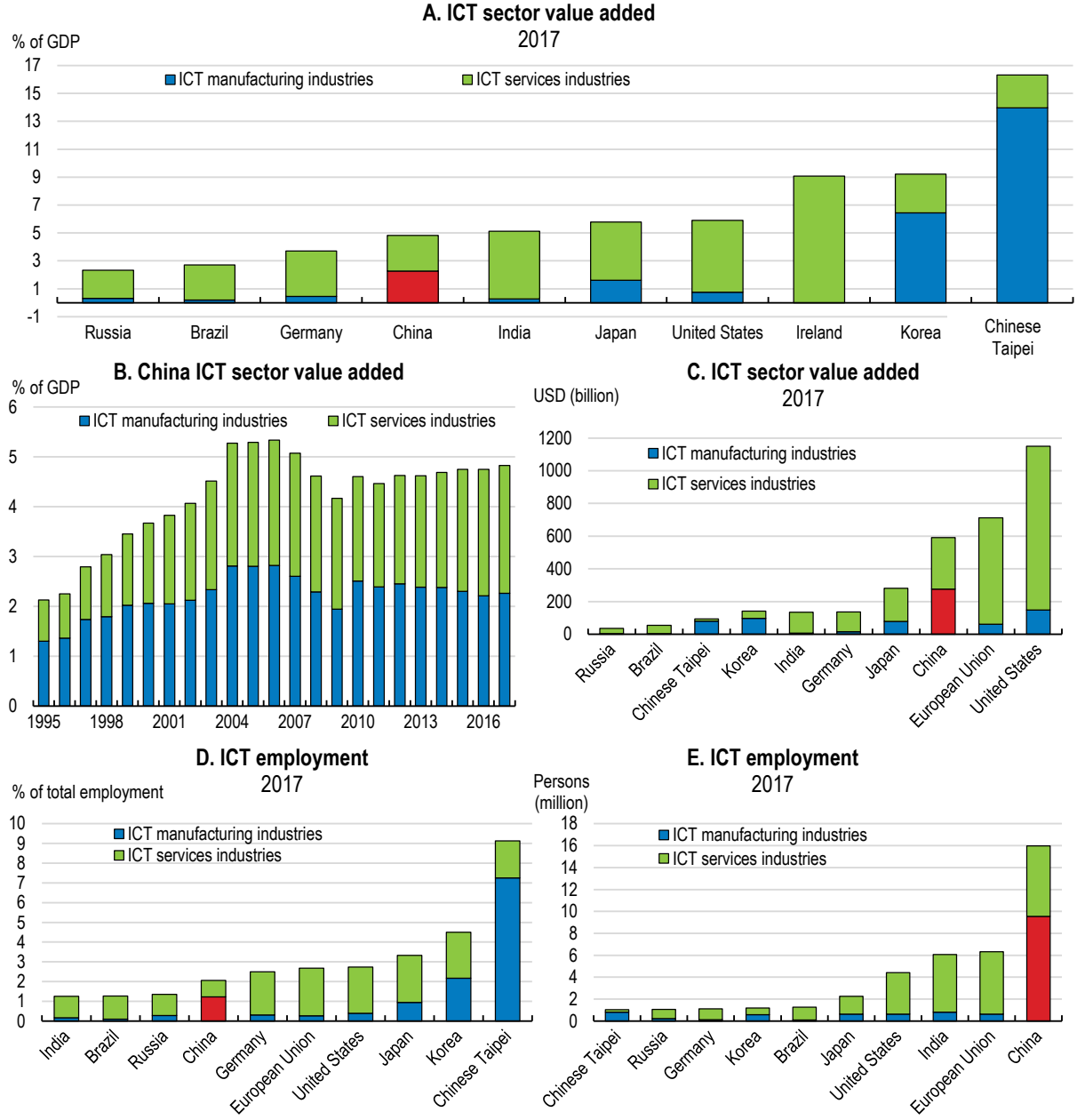
Foreign professional staff is subject to restrictions in practicing their activity, either as employees or independent service providers. Foreigners cannot fill key positions in nearly all industries, including in manufacturing, while in OECD countries, in manufacturing there are no restrictions at all. Limitations on foreign staff in transport services, in particular maritime transport, are more stringent than in other sectors (Transport Ministry Order No. 2018/28). Real estate is the most liberalised broader industry category, where no regulations govern the filling of key positions by foreign staff, as in OECD countries. Restrictions on the hiring of foreign staff for key positions reduce the opportunities to introduce new knowhow, in particular in management practices, and hence forego the chances to boost efficiency.

Innovation and digitalisation for a sustainable recovery

Digitalisation is a promising candidate to lift China's long-term growth potential. Digital technologies are shown to boost productivity (Gal et al., 2019[28]), which is the key to sustainable growth. At the current juncture, introducing digital technologies can help also jumpstarting the economy as it creates new jobs and meets new demand (OECD, 2018[29]). Indeed, in the first half of 2020, it was the IT and software sector growing at nearly 10% (in the first quarter over 13%) and the financial sector at over 9% (in the first quarter 6%, partly thanks to surging online payments), that held up services growth.

Figure 2.19. There is room for catching up with the ICT frontrunners



Note: The definition of the ICT sector used here takes into account the standard distinction between manufacturing and services, but does not include manufacture of magnetic and optical media and ICT trade industries. ICT services industries are grouped in two sub-sectors: telecommunications and computer and related activities.
Source: European Commission PREDICT 2020 database.

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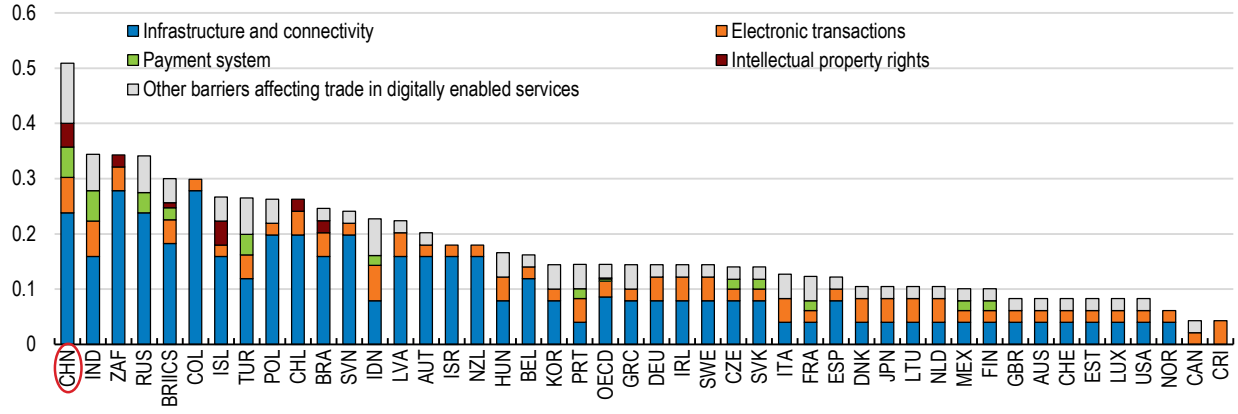
To capture the pace of digitalisation, an imperfect indicator, the size of the ICT sector is commonly used. China's ICT sector is only somewhat smaller in absolute size than that of the European Union, and relative to GDP is even greater, but still lags behind digital frontrunner economies such as the United States, Japan, Korea, Chinese Taipei or India (Figure 2.19, above). In terms of employment, it has the largest workforce engaged in digital industries and services, though they make up a small share of the total.

Barriers to digital trade

To fully reap the digital potential, in addition to channelling funds for transitioning to digital processes, also the framework conditions need to be established. Competition, in particular competitive pressure from foreign counterparts when there are few domestic players is an important source of efficiency gains. Restrictions on trade in digital services, which - measured by the OECD Digital Services Trade Restrictiveness Index (Digital STRI) (Ferencz, 2019[25]) - are higher than in OECD and G20 countries (Figure 2.20), act in the opposite direction. Digitalisation itself could boost trade as it enables formally non-tradeable services to be traded and by reducing entry costs, it also facilitates trade by small-scale producers, but to fully reap the benefits, no barriers should be erected.

Figure 2.20. Infrastructure, connectivity and other barriers restrict digital trade

OECD Digital Services Trade Restrictiveness Index, 2020



Note: STRI indices take the value from 0 to 1. Complete openness to trade and investment gives a score of zero, while being completely closed to foreign services providers yields a score of one.
Source: OECD Digital Services Trade Restrictiveness Index database.

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The details of the Digital STRI reveal that regulations limiting digital infrastructure and connectivity are more stringent in China than in OECD countries, with the exception of Colombia and about the same as in Indonesia, Russia or South Africa. Non-discriminatory internet traffic management is not mandated, while it is in 32 out of the 37 OECD countries and half of the BRIICS countries (Brazil, Indonesia and Russia). Cross-border personal data transfers are subject to cumbersome requirements, including case-by-case approvals for certain types of data such as personal information or important data. Moreover, other types of data, such as financial data, must be stored and processed locally. Cross-border transfers of data elsewhere are subjected to lighter conditions, such as pre-approval of transfers to countries that have an adequate data protection or authorising transfers subject to the implementation of private sector safeguards such as standard contractual clauses or binding corporate rules. The stringency of controls on data transfers in China are of a similar degree as those in Indonesia and Russia. The possibility to transfer digital information across borders is needed to fully reap the benefits of digitalisation that is evolving globally (OECD, 2019[30]). However, policy makers across the globe face the challenge of striking a balance between ensuring seamless cross-border data flows and pursuing other important policy objectives such as preserving privacy and protecting individual and public safety. Computable general equilibrium model

estimates show that in the medium-to-long term the restrictions on data flows China imposes cost it 0.55% of GDP (Bauer, Ferracane and Van Der Marel, 2016[31]). As the Chinese economy is becoming more data-intensive, the losses grow.

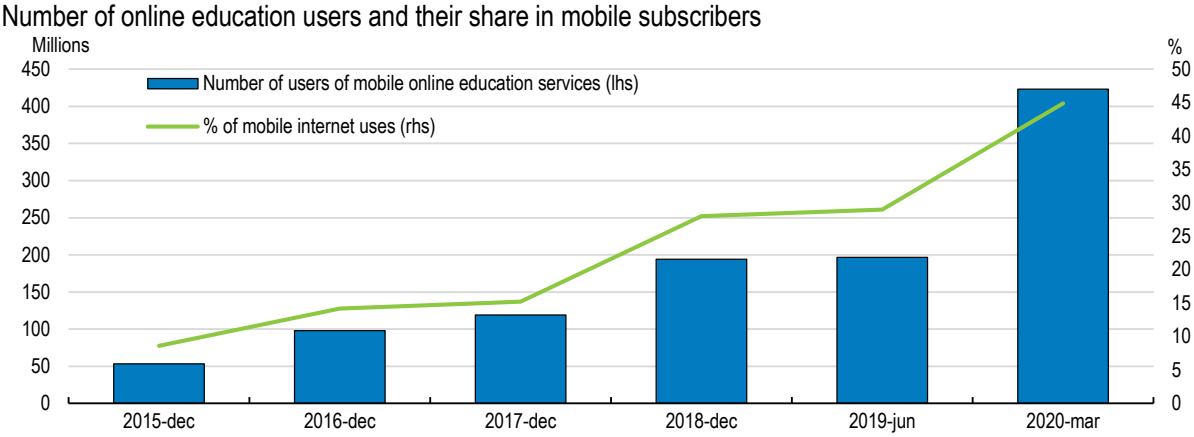
Electronic transactions are also more regulated than in any OECD country, and to the same extent as in Brazil, India or Indonesia. An additional license, on the top of a business license, is required to engage in e-commerce, which is not necessary in other countries, with the exception of Italy, India and Indonesia. Moreover, an Internet Content Provider (ICP) license is required for anyone wishing to set up a website located on a Chinese server and for commercial activities, it needs to be a Commercial Internet Content Provider license. This latter type can be obtained by joint ventures only, with non-majority foreign participation and a Chinese CEO. A fully foreign-owned firm could obtain such a license if it is registered in a free-trade zone, from where it can serve the whole country. The payment system is also most restricted among G20 countries alongside India's. In particular, third party payment providers must hold a payment services operator (PSO) license issued by the People's Bank of China. So far, only one foreign entity, a US firm, has obtained such a license for online payment purposes. The intellectual property right component of the Digital STRI indicator is not specific to digital transactions, it refers to the 'first-to-file' system, i.e. the first person filing for a trademark will be the one protected. In addition to the 2016 online publishing regulations, foreign firms cannot publish online content, including text, pictures, maps, games, animations, audios and videos, with the exception of cooperative projects on a case-by-case basis and subject to the initial approval of the State Administration of Press, Publication, Radio, Film and Television (SARFT).

Business sector in the leader seat of digitalisation

The outbreak gave a new impetus to digitalisation as there emerged insatiable demand for contactless solutions to reduce the risk of infection. The government called for the use of mobile payments to avoid spreading the disease through cash circulation as the virus was identified on banknotes and coins. To avoid the spread of virus through banknotes and coins, all those received by hospitals were not put back in circulation and the rest underwent thorough disinfection before returning to circulation. Mobile payment had been common even before, but the outbreak pushed up its growth into double digits. In addition, a large number of new apps has been launched to meet new demand. The number of mini-programs (which are embedded in mega platforms such as WeChat and AliPay), a useful yardstick to gauge the emergence of new apps, jumped by 700 000, while the number of daily average users rose by 120 million, over a third, in a matter of two months. The content of the programs was affected by COVID-19, those related to education and health increased significantly (Figure 2.21).

Figure 2.21. Online education has soared

Number of online education users and their share in mobile subscribers



Source: China Academy of Information and Telecommunications.

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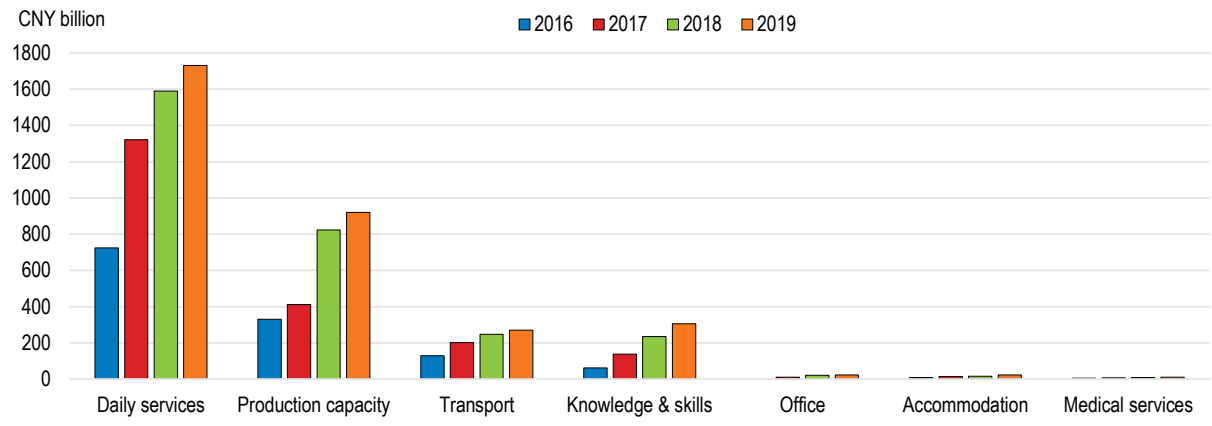
A main feature of this innovation boom is that it meets demand for solutions, therefore it will likely have a marked impact on productivity. This is different from the past when the high number of innovation outputs was not matched by productivity increases. The quality and relevance of innovation outputs was a major factor behind the limited link between innovation output and productivity growth (Molnar and Xu, 2019[32]). As the 2015 and the 2017 Economic Surveys highlighted, commercialisation of innovation outputs is particularly low for universities and research institutions, where the major motivation may be promotion, tenure or other performance evaluation-related objectives. COVID-19 triggered a new wave of innovation throughout the economy, medicine is a focal area where the government pledged to invest more in R&D, but this time innovation is more inclusive as it meets demand by hundreds of millions. E-commerce is already more developed in China than elsewhere, but the fear of contact with other people further increased its share. E-commerce further thrived, as even deliveries became contactless thanks to delivering and picking up at unmanned neighbourhood collection points.

Not all digital-based services benefit from the COVID-19 outbreak. Parts of the sharing economy, which made up 3.2% of GDP in 2019 (State Information Centre, 2020[33]) and has been dynamic in recent years (Figure 2.22), will likely shrink due to increased wariness of physically sharing housing, cars, household machines and other objects.

Figure 2.22. The sharing economy has been growing at high rates

Sales by selected services



Note: Daily services include catering, housekeeping, cosmetics services, delivery and the automotive aftermarket.
Source: State Information Centre Sharing Economy Research Centre (2018, 2019 and 2020), Gongxiang Jingji Fazhan Niandu Baogao, in Chinese, Annual Report on the Development of the Sharing Economy.

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E-government to jumpstart

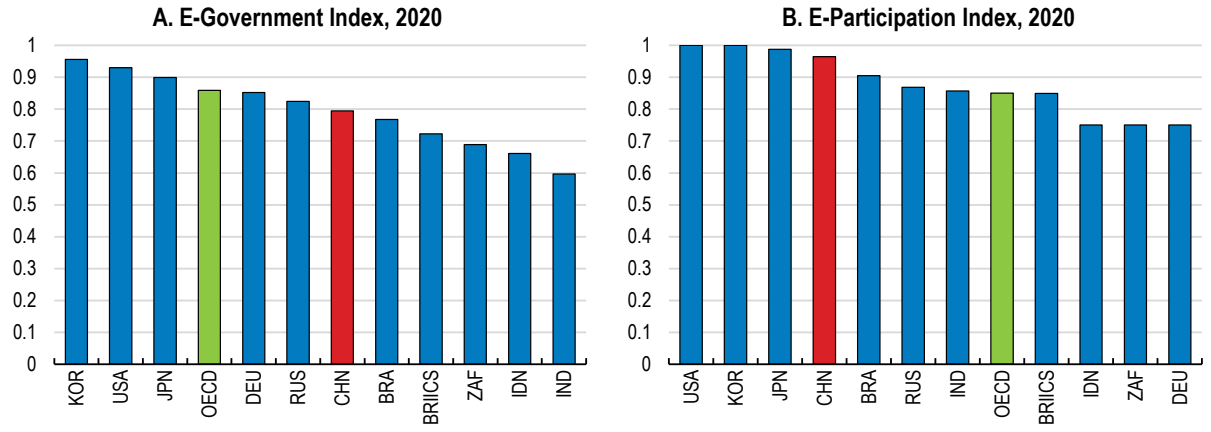
China has been a frontrunner in business digitalisation for a while already, but the outbreak accelerated also the provision of e-government services. Indeed, the health QR code (assessing one's degree of potential contagiousness) is instrumental in tracking the health status of individuals and determining their permitted scope of activities, for instance to use public transport, purchase a rail ticket, one needs a green code. However, as such codes are issued by provincial and municipal governments, for frequent travellers it is an extra burden to download the app in each place they go. Health QR codes should be mutually recognised all over the country, as is the case in the Yangtze River Delta region.

A major breakthrough in tax administration is the online payment of taxes in an effort to contain the spread of the virus. Pilot projects for e-taxation were introduced in four provinces and Qingdao city starting from the beginning of last year. In the very near future, it will be available in the whole country. The State

Administration of Taxation has called for reducing person-to-person contact in tax administration to the minimum level. As of end-August 2020, corporate taxpayers can handle more than 90% of tax-related businesses online. Furthermore, from 11 September 2020, customs inspection and quarantine declaration has gone online, it is now being done through the one-stop-shop platform. Tendering procedures in construction will also increasingly go online and so will healthcare services. Furthermore, in some hospitals in Wuhan, the epicentre of the COVID-19 outbreak, robots were not only delivering medical supplies, but also helped tracking patients' critical readings while avoiding physical contact (Lim, 2020). Shanghai and Wuhan introduced online medical counselling and follow up services online for insured patients with common and chronic illnesses.

China is a frontrunner in e-participation, only behind the United States, Korea and Japan among OECD and BRIICS countries according to the UN E-Government Knowledgebase (Figure 2.23), meaning that citizens are highly engaged in decision making and public services. According to the e-government index, of which e-participation is a subset, many more OECD countries as well as Russia are ahead of China. This composite index also includes transparency and inclusion, where China fares less favourably. Computer skills need to be upgraded and provided to a wider population to narrow the digital divide as computer skills is the area where the skill deficit is the greatest (Molnar, Wang and Gao, 2015[34]).

Figure 2.23. China lags somewhat in e-government but is ahead in e-participation



Note: The E-Participation Index is a subset of the E-Government index.
Source: UN E-Government Knowledgebase 2020.

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There is considerable variation across provinces in terms of the adoption of e-government services, with larger provinces and municipalities being the frontrunners. There are exceptions, however, Guizhou and Fujian perform better and Hubei and Hunan worse than what their ranking in GDP would suggest. In Beijing, for instance, residents can apply online for 90% of e-government services and 895 municipality-level processes can fully be completed online. Greater access to government services online would further enhance efficiency and reduce costs.

Industry support not just for survival but upgrading

Industry support was stepped up following the COVID-19 outbreak, not only to provide a lifeline to struggling firms, but also to upgrade key strategic industries, including semiconductors. The global semiconductor value chain is unbalanced across regions with a few developed economies such as the United States, Korea and Chinese Taipei controlling most of the intellectual property and higher value added functions, and China accommodating lower value-added functions such as assembly and testing (Box 2.3). Due to the specificities of the industry such as a high degree of specialisation by segment, oligopolistic markets, a highly cumulative nature of technological and organisational knowledge and very high capital investment requirements, latecomers find it hard to catch up (Grimes and Du, 2020[35]). Attempting to narrow the gap, the Chinese government issued a series of policies and set up funds to support the industry over the past two decades. As a result of the semiconductor industrial policy drive, including the adoption of the National Semiconductor Industry Guidelines in June 2014 and with the industry also featuring in Made in China 2025 published in May 2015, Chinese companies have gained a strong foothold in back-end manufacturing and assembly and testing (Ernst, 2016[36]). The United States and China represent a symbiotic relationship in the global market, with the former being the biggest supplier and the latter the largest market for semiconductors. Moreover, semiconductors are the fifth most important export product for the United States (behind only airplanes, refined oil, crude oil, and cars) and the single most important import item for China is integrated circuits.

Box 2.3. Market structure of the semiconductor industry

The production of semiconductors involves four main stages: design, manufacturing, assembly, and testing and packaging. Depending on whether a maker integrates all those four processes or all processes but manufacturing, they are integrated device manufacturers (IDM) or fabless-foundry companies. Globally the two largest IDM are Intel and Samsung Electronics. Top designers - that contract out the fabrication part - include Broadcom, Qualcomm, Nvidia and MediaTek. Design companies (which include both IDMs and fabless) command a three-quarter share of revenues of the whole industry, followed by foundries (in charge of manufacturing) at 11% (Grimes and Du, 2020[35]). Assembly and testing's share is just 6%.

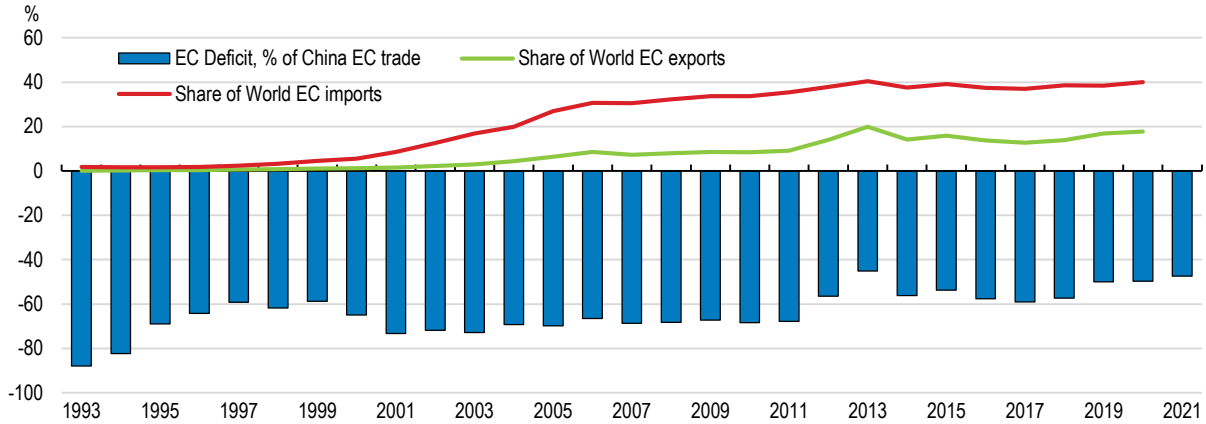
US companies dominate the design segment, while Korean ones the memory chip production. Taiwan Semiconductor Manufacturing Corporation (TSMC) from Chinese Taipei is the world's largest foundry with over a half of global market share. Chinese Taipei also commands over half of global assembly and testing market, followed by the United States, China and Singapore.

The market is characterised by oligopolistic competition in most segments, though in some product segments there is sometime a single dominant firm. For instance, Intel is the dominant chip producer for PCs and servers, Qualcomm for Wi-Fi chips and Broadcom for Ethernet switch chips for smartphones. In the NAND (flash memory) segment, competition between Samsung, Toshiba, Micron, WDC and SK Hynix is stiff with each commanding over 10% of the market (Grimes and Du, 2020[35]).

Source: Grimes and Du (2020) and industry reports.

China's is the world's largest market for integrated circuits, accounting for over 58% of global consumption, 40% of imports and 18-20% of exports (Figure 2.24). Imports are about three times of domestic production (as of the second quarter of 2020), indicating limited domestic production capacity. Moreover, foreign-invested companies deliver most of its domestic production. China spends roughly the same on R&D relative to sales as Korea, but only slightly more than half of what the United States spends (Semiconductor Industry Association, 2020[37]).

Figure 2.24. Electronic integrated circuits are intensely traded



Note: Electronic integrated circuits include processors, controllers, and amplifiers under category code 8542 in the HS2017 classification. The deficit is the difference between exports and imports and is expressed as the percentage of electronic integrated circuit trade.
Source: OECD calculations based on the UN Comtrade and CEIC databases.

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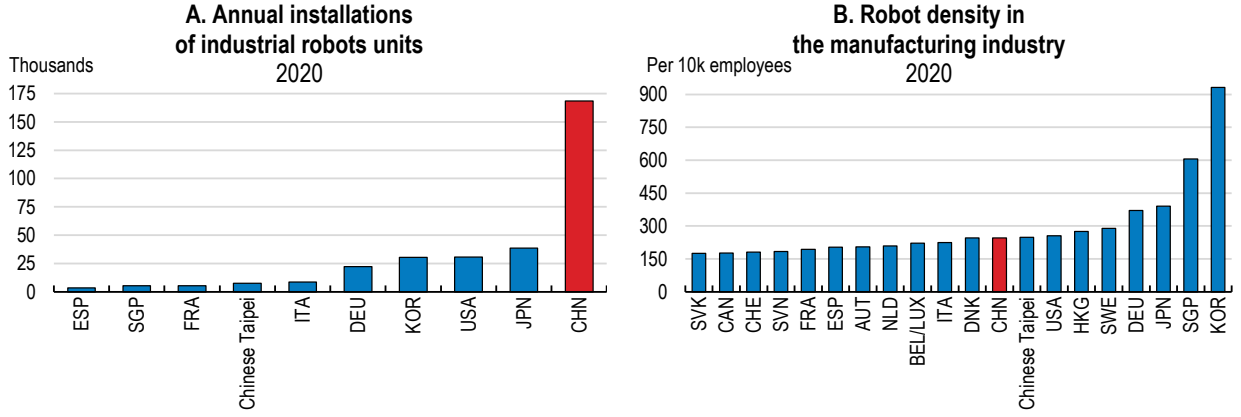
The recently issued Notice on policies to support the high-quality development of the integrated circuit and software industries by the State Council (Guofa 2020/8) puts forward policies in eight areas on an equal footing regardless of firm ownership. It specifies measures in the areas of tax, financing, R&D, trade, staffing, intellectual property (IP), market use and international cooperation. Potential beneficiaries of full corporate income tax exemption must be producing integrated circuits of the size of at most 28 nm and the firm or the project must be operating for at least 15 years, reflecting that experience matters more in the semiconductors industry than in most others. Somewhat less generous income tax exemption policies apply for producers of larger integrated circuits up to 130 nm and all those can also benefit from carryover of loss for 10 years. Key integrated circuit designers and software companies pay corporate taxes at a 10% rate once the ten-year exemption is over. VAT reductions also apply and equipment and inputs are exempt from import duties. To alleviate funding difficulties, the Notice stresses the use of government funds, encourages local governments to establish a lending risk compensation mechanism and collateralising of intellectual property rights (IPRs), shares and receivables to obtain loans from commercial banks. The Notice also calls for establishing a major at the tertiary education level for integrated circuits and software and creating model microelectronics institutes. Pilot enterprises that invest in specialised education in the field can benefit from reduced education and local education surcharges. An important measure foreshadowed by the Notice is the strengthening of IPR protection and more deterring fines for violation. Pre-installed software in all computers in the Chinese market must be legal copies and so must be software installed on government computers countrywide.

While strengthening of IPR protection and promoting innovative ways of financing are welcome steps, generous tax exemptions – which by OECD standards do not constitute good tax policy - reduce the availability of public funds for other priority areas such as education, health and social security. Moreover, open-ended tax holidays for circuit makers of the size of 28 nm or below will result in large foregone tax revenues as the industry trend is to produce smaller and smaller circuits. Cost-based instead of profit-based tax incentives would be a more efficient way of subsidising investment as cost-based incentives are less biased toward firms that are already profitable compared to profit-based incentives. Furthermore, cost-based are linked to the size of the investment or its use toward certain activities, therefore are more likely to encourage new business and specific policy objectives. The use of public funds for either tax expenditure or investing in firms should be subject to the Fair Competition Review Mechanism as well as rigorous cost-benefit analysis and third-party evaluation. Subsidies should be more transparent and related data published. The Notice clearly states that low-level and repetitive investment should be avoided, but recent

project failures in the industry call for caution when using government funds. Indeed, as the previous couple of Economic Surveys discussed through the example of renewable energy projects, when localities across the country are vying with each other to undertake projects in designated priority areas, they outcome can often be indeed repetitious low-level investment wasting public funds. Recent regulations to improve budgetary transparency (discussed in details in the Key Policy Insights chapter) require industrial parks to embed their budgets in the corresponding government level's budget, instead of compiling a separate budget, which will help gauging the costs of government investment projects and the risk they represent to the budget.

In contrast to semiconductors, another beneficiary of generous industrial policies, the robotics industry has been hard hit by COVID-19. In fact, the slowing of installations already started before, owing mainly to weaknesses in major user industries. As 30% of robots manufacture automobiles and another 25% electrical machinery and electronics, demand is likely to remain weak in the short term. China accounted for 72.3% of worldwide installations in 2020 (International Federation of Robotics). Domestically-made devices made up 10% of worldwide and 27% of domestic installations, implying heavy reliance on imports. China also exports robots and in the lower categories, where there appears to be overcapacity (the Ministry of Industry and Information Technology issued warnings of the risk of overproduction of low-quality robots and substitution of high-quality ones with them as early as in 2017), created by policies, including generous subsidies, to develop the industry. The Robotics Industry Development Plan 2016-20 charted the directions and several related regulations were adopted thereafter, both at the national and local levels. Even though China has been the largest market for industrial robots, there is still room for robot use intensity to catch up with the frontrunners (Figure 2.25). As in the case of semiconductors, a better screening of subsidies would use public funds more efficiently and would help avoiding overcapacity. In addition, the allocation of subsidies across industries should be more even to reward genuine inventions and avoid wasting funds for repetitive low quality projects.

Figure 2.25. China is the largest market for robots and density is still low



Source: International Robotics Federation.

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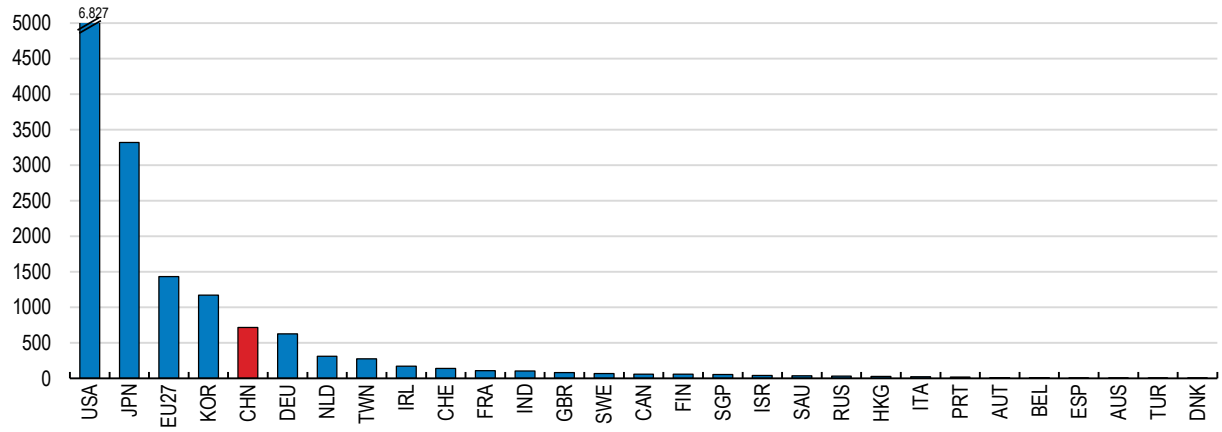
Due its large-scale industry support and its large size, China is among the countries, whose support of firms, in particular of SOEs, is considered to be market distorting by competitors in global markets. Global players in steel, aluminium, shipbuilding and more recently also in semiconductor markets have reported market-distorting subsidies ((OECD, 2021[38])). The 21 largest semiconductor firms are reported to have received government support exceeding USD 50 billion over 2014-28 (OECD, 2021[38]).

Leapfrogging in emerging fields

China has successfully leapfrogged in newly emerging fields where newcomers are not disadvantaged by not having decades of accumulated experience. It has excelled in digitalisation and shared services (both discussed above), as well as AI and is rapidly adopting blockchain technologies. Massive investment in R&D is manifest in leading places among patenters in both AI and blockchain. China is the fifth largest economic entity after only the United States, Japan, the European Union and Korea in terms of the number of AI-related patents (Figure 2.26). China is the largest producer of AI-related scientific publications (OECD, 2020) exploiting the abundant data available, which put Chinese developers in an advantageous position when training AI algorithms.

Figure 2.26. China is a frontrunner in AI-related patents

Number of AI-related patents, 2019



Note: Patents resulting from international collaboration are accounted for in all participating countries as a fraction, evenly split across them, that is how the patent counts are not integers.
Source: OECD.AI (2020), visualisations powered by JSI using data from MAG, version of 29/05/2020, accessed on 31/8/2020, www.oecd.ai.

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Blockchain technologies have a great potential to enhance efficiency. The first blockchain-based letter of credit transaction using CNY in September 2019 showed that the exchange of documents can be reduced from the usual 5-10 days to a single day. The first central government agency to establish a block-chain based platform was the State Administration of Foreign Exchange in March 2019 to help SMEs to collateralise overseas receivables. The Smart City Development Research Centre under the State Information Centre is working with China Mobile and China UnionPay to launch a reliable and controllable blockchain-based network. China ranks second in the world in blockchain-related patents, behind only the United States. Regulations are also catching up. In July 2020, the People's Bank of China issued the Notice on financial industry standards to promote the application of blockchain technology specifications requiring financial institutions that use blockchain technologies to systematically apply an evaluation ruleset (the Rules on evaluation of using blockchain technologies in finance). In the same month, the Beijing Certificate Authority, the only one so far to work in the financial sector, launched a blockchain security assessment service, auditing the nodes, ledgers and encryption mechanisms used. Encryption technologies must be domestically developed and registered, which slows the application of foreign technologies and thus limits efficiency gains.

China has also become a frontrunner in some emerging manufacturing industries such as commercial drone manufacturing. A Chinese firm currently commands 70% of the global drone market, which is forecasted to grow 30-fold by 2023 vs. 2018 (Frost & Sullivan). The summer locust invasion in Southern China in 2020 provided a boost to the spread of the use of drones in controlling pests. Drones can cover

50-60 times more ground than humans can in a given time. However, a common point of the drone, industrial robot and semiconductor industries is that they rely on imported components, partly from the United States. Thus, a swift resolution of trade disputes is a precondition to fostering industries in those sectors. Moreover, economic sanctions may well have the impact of accelerated development of indigenous industries as well as the undesired decoupling in multiple areas, which may be hard to reverse.

Policy recommendations

MAIN FINDINGS	RECOMMENDATIONS (key recommendations are bolded)
Cutting red tape	
The administrative burden on start-ups have fallen significantly in the past decade, but still only part of the procedures can be done online.	Reduce further the administrative burden on start-ups and **implement a one-stop shop all over the country. Move more procedures online.**
Administrative simplification is ongoing but there is still no one-stop shop everywhere, moreover, requirements vary across the country.	**Unify market regulations across the country to create a single market.**
There are still some irrelevant licensing requirements and there is no database of the entire list of licenses and permits.	Further reduce licensing requirements and publish the list of all licenses and permits.
SOE reforms	
Natural disasters and emergency situations oblige SOEs to provide support without adequate remuneration.	**Implement accounting separation and pay fair compensation for SOEs for their services in emergency situations and make them face a level playing field. Adopt the OECD guidelines on SOE governance.**
It is unknown how large burden emergency calls impose and in general disclosure of SOE-related data is more limited than in the case of listed firms.	Fund the costs related to public policy objectives from the government budget and disclose such costs.
Many SOEs provide public services and goods and services in competitive markets, but those two types of services are not in separate accounts.	Accounting separation should be implemented whenever SOEs provide both public services and other services/ goods in competition with other firms.
State ownership is significant even in commercially-oriented industries.	Reduce state ownership in commercially-oriented industries such as accommodation, catering, wholesale and retail.
State-owned enterprises and other public entities enjoy implicit guarantees and other preferential treatment. They accumulated large amounts of debt.	**Gradually phase out implicit guarantees to SOEs and other public entities by not bailing them out upon their default.**
Limited SOE-related data are disclosed for non-listed firms, in particular for firms belonging to government agencies.	Enhance disclosure and transparency of SOE data regardless of the government agency that controls them. SOEs' overseas activities should be disclosed and audited to prevent loss of state assets.
Network industries	
Potentially competitive segments of the electricity market are being liberalised, but incumbents still dominate. Renewables producers have no guarantee that they can sell their surplus electricity.	Ensure fair competition in all segments of the electricity market and allow renewables producers to sell the electricity they produce through the grid.
Demand response has been introduced a while ago as a pilot programme, but it is unclear which pilot scheme is the most efficient.	Establish a mechanism for the operation of demand response, including for its funding and pricing, to reduce peak load demand and enhance network security.
Oil and gas exploration is no longer subject to joint venture requirements, but potential foreign entrants have no sufficient access to data needed for feasibility studies.	Implement open tenders for oil and gas blocks and disclose sufficient data for feasibility studies by prospective entrants.
Prices and user charges in most segments of the natural gas sector are regulated.	Gradually allow the user charges for liquefied natural gas terminal and gasification facilities to be set by the market.
Single domestic market	
Administrative monopolies inhibit fair competition across sectors and across regions protecting local incumbents.	**Strengthen the rule of law and restrict the power of administrative departments to prevent the creation of administrative monopolies.**
Laws and regulations are often vague, allowing for discretion in interpretation.	Provide clear and detailed implementation rules to limit the discretionary power of administrative departments.
The Fair Competition Review Mechanism was introduced in 2016, but its implementation varies across the country. Moreover, there is no mechanism for the dismantling of administrative monopolies.	**Dismantle existing administrative monopolies and apply the Fair Competition Review Mechanism rigorously**. Establish a mechanism for dismantling administrative monopolies.
Local governments often require firms to register in their locality to be able to participate in local tenders.	Enforce the prohibition of the requirement to establish a local subsidiary to be able to participate in local public tenders.

Tender documents are often written in a way so that only the favoured firm meets the requirements.	Subject tender documents to the review of competition authorities to avoid any potential competition-hindering clause.
Private sector	
New regulations intend to protect private suppliers by imposing fines for non-payment. This could turn away potential buyers of private sector goods and services.	Guarantees of payment and fines for non-payment should protect all creditors, regardless of the size of the firm.
Retail stores have a practice of requiring producers to place their goods on commission.	The practice of requiring suppliers to place goods on commission in retail stores should be abolished.
Recent regulations require exploring ways of splitting infrastructure contracts so that smaller bidders can participate.	Extend the practice of splitting up project contracts into lots so that smaller-scale private firms can also participate in the bid.
Foreign firms	
Market access for foreign companies improved, though joint-venture requirements still exist in some sectors and intellectual property rights are not well protected.	**Open up further sectors to foreign investment and abolish the requirement for joint ventures.**
Many firms do nothing when their intellectual property rights are violated as the costs of going to court are high and the procedure is long.	**Strengthen further intellectual property right protection** to attract more foreign investors with advanced technologies.
Only firms registered in China can participate in public procurement tenders.	Accelerate the process of joining the WTO's Government Procurement Agreement and allow foreign firms access to the domestic procurement market for goods and services.
Paving the path for long-term growth by innovating and digitalising	
Local governments blindly compete in directing public funds to favoured industries by taking advantage of industrial policy priorities, often leading to low-quality, repetitious investment, overcapacity or project failure.	**Apply the competitive neutrality principle in the allocation of subsidies and subject the use of public funds to rigorous cost-benefit analysis and third-party evaluation**.
Profit-based incentives such as tax exemptions and reductions are biased towards firms that are already profitable and are not linked to the size of the investment.	Instead of profit-based, use cost-based tax incentives to subsidise investment.
Large amounts of public money, especially at the local level, are spent on priority projects, which led to excess capacity and waste of public money.	Avoid low-quality, repetitive investment by greater transparency of public spending, including at the project and the local level.
Competitors are often not aware of subsidies benefitting some firms and such information is hard to come by.	Make subsidies more transparent and publish related data.
Firms belonging to priority sectors can easily get subsidies than others.	Spread innovation-related subsidies across industries more evenly so that they reward innovation outputs for their quality and not by the priority of the sector.

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CHINA

China's economy has strongly rebounded from the deep dive following the COVID-19 outbreak and has returned to its gradually slowing path. The rebalancing from investment to consumption, from manufacturing to services, and from rural to urban migration have all been set back by the pandemic, but need to restart to make growth sustainable and inclusive. The investment-driven recovery kept investment efficiency low, indicating continued capital misallocation. Corporate debt climbed to pre-pandemic highs: borrowing has been fuelled by crisis-related and more long-standing factors, including implicit guarantees for state-owned enterprises and other public entities. Slowing growth and continuing tax cuts will imply lower fiscal resources to make growth more inclusive, thus stable revenue sources from personal income taxes and dividends from state-owned enterprises are needed. Although the population is aging rapidly, China can still reap the "reform dividend" with measures to keep up the sustained growth of productivity. Reforms that enhance competition in product markets are among those that can potentially bring about significant productivity gains.

The Economic Survey of China assesses recent macroeconomic performance and proposes policy measures to promote higher-quality growth such as product market reforms.

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