

U.S.-China Economic and Security Review Commission

Economics and Trade Bulletin



April 30, 2021

Highlights of This Month’s Edition

- **U.S.-China Trade:** In February 2021, the U.S. trade deficit in goods with China expanded 53.9 percent year-on-year to \$24.6 billion, marking the largest year-on-year increase since February 2005; U.S. imports of Chinese goods grew 49.2 percent year-on-year to \$34 billion; China’s manufacturing sector continues to lead its domestic economic recovery.

In Focus: Two Sessions and 14th Five-Year Plan

- **Economic Vision for 2021–2025 and Beyond:** China’s policymakers shelve mandatory growth targets for the 14th Five-Year Plan period and emphasize economic security in the state’s approach to development. The plan is far-reaching in scope, but prospects for implementation remain unclear.
- **Technology and Innovation:** While the 14th Five-Year Plan targets sectors similar to those identified in previous national plans, it emphasizes achieving technological breakthroughs and proposes systemic changes to management, funding, and improvement of the research environment.
- **Environment and Climate:** Unambitious climate benchmarks and ongoing support for fossil fuel projects in the 14th Five-Year Plan cast doubt on China’s ability to meet its commitment to reach carbon neutrality by 2060, even as the plan also targets leadership in the next generation of clean and renewable technology.
- **Demographics and Urbanization:** China’s leaders seek to address a looming demographic crisis and shore up labor productivity and household consumption through changes to China’s *hukou* system, family support, retirement policy, and land administration. Urban planning goals focus on building economies of scale in social services provision and using cities to drive technological advancement.

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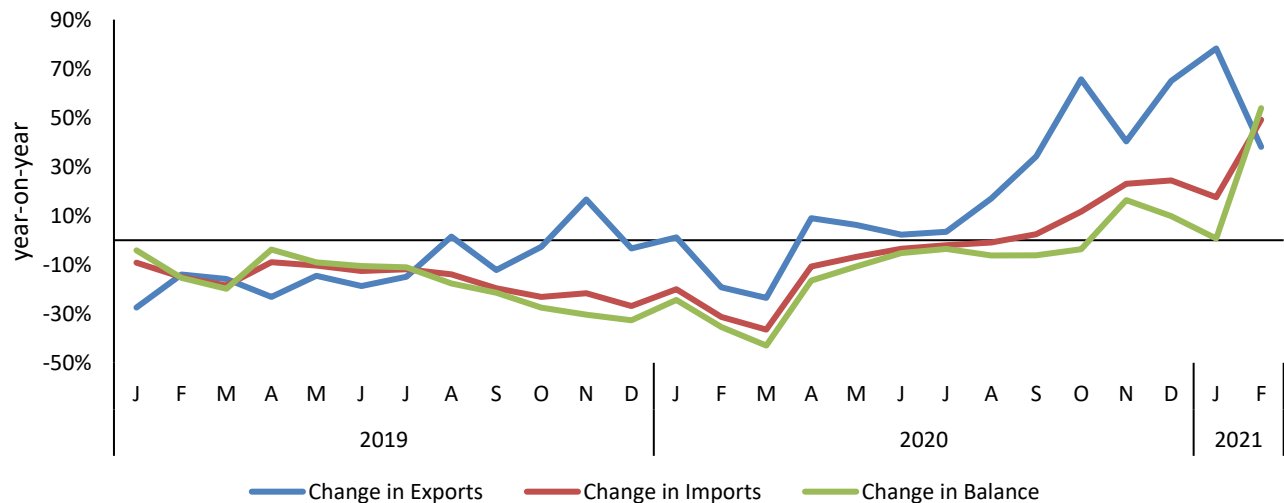
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This issue of the Economics and Trade Bulletin was prepared by Nargiza Salidjanova, Kendra Brock, Charles Horne, Kaj Malden, Leyton Nelson, Emma Rafaelof, and Taylore Roth. You may reach us at contact@uscc.gov.

February U.S. Goods Deficit with China Marks a 16-Year High

In February 2021, the U.S. trade deficit in goods with China expanded 53.9 percent year-on-year to \$24.6 billion (see Figure 1), marking the largest year-on-year increase since February 2005. The expanding U.S.-China trade deficit in goods was driven by a 49.2 percent year-on-year increase in U.S. imports of Chinese goods, which reached \$34 billion in February. This jump in imports is likely driven by increased U.S. consumption due to fiscal stimulus and gradual reopening of the U.S. economy.¹ U.S. goods exports to China reached \$9.4 billion in February, a 38 percent year-on-year increase but down \$3.5 billion from January 2021.²

Figure 1: Year-on-Year Change in U.S. Exports, Imports, Trade Balance with China, 2019–2021



Source: U.S. Census Bureau, *Trade in Goods with China*, April 7, 2021. <https://www.census.gov/foreign-trade/balance/c5700.html>.

As many of China’s trading partners continue to grapple with the novel coronavirus (COVID-19) pandemic, demand for Chinese manufactured goods such as work-from-home equipment and medical devices remains robust, buoying China’s manufacturing exports.³ Although partially distorted by the strong contractions to China’s economy last February amid nationwide COVID-19 lockdowns, China’s exports in February 2021 registered above-expected growth with an increase of 154.9 percent year-on-year.⁴ Due to domestic COVID-19 travel restrictions during this year’s Lunar New Year holiday, many of China’s estimated 290 million migrant workers did not travel to their hometowns, but rather continued to work through the holiday.⁵ As a result, many factories that traditionally close during the Lunar New Year stayed open this year and continued to fill orders ahead of schedule.⁶ China’s Purchasing Managers’ Index (PMI), which measures the direction of economic trends in the manufacturing sector, was 50.6 for the month of February, indicating modest growth. This represents an improvement over the past two years, where the PMI indicated contraction in February 2019 and 2020.⁷

14th Five-Year Plan Sets Vision for 2021–2025 and Beyond

At the annual “Two Sessions” legislative conference held from March 4 to March 12,* China’s leaders proclaimed the Chinese economy’s arrival at a post-pandemic era. Premier Li Keqiang extolled the Chinese Communist Party’s (CCP) “major strategic success” in containing the pandemic, while CCP General Secretary Xi Jinping told Party officials China is entering a time of opportunity with “the east rising and the west in decline.”⁸ The Chinese

* The “Two Sessions” refer to two parallel meetings of China’s policymakers, specifically the National People’s Congress (NPC) and the Chinese People’s Political Consultative Conference (CPPCC). The NPC acts as a national legislature with the authority to enact laws and ratify plans for national development, such as the 14th Five-Year Plan, while the CPPCC serves as an advisory body. The two bodies typically meet in the spring of each year to review the Chinese government’s work over the preceding year and outline top economic objectives and policy priorities for the coming year. The Two Sessions are largely viewed as formal, scripted procedures to approve the Party’s guidance. *NPC Observer*, “FAQs: The NPC and Its Annual Sessions,” March 12, 2021. <https://npcobserver.com/resources/faqs-the-npc-its-annual-sessions/>; June Teufel Dreyer, “China’s Two Sessions—And What They Mean for the United States,” *Foreign Policy Research Institute*, March 12, 2021. <https://www.fpri.org/article/2021/03/chinas-two-sessions-and-what-they-mean-for-the-united-states/>.

government's confidence was on display in its decision to cement its authoritarian grip over Hong Kong by introducing a new electoral system that eliminates any chance for democratic elections. Despite these assertive outward displays of resolve, official policy documents reveal the CCP's deeper concerns about China's uncertain economic future. Articulating an urgent drive to bolster China's technological development, address regional disparities, and guard against external risks, the 14th Five-Year Plan for National Economic and Social Development and the Long-Range Objectives through 2035 (14FYP) reveals China's leaders are attempting to grapple with the immense structural challenges the economy faces.

Major forthcoming milestones in China's political calendar, such as the 100th anniversary of the CCP's founding in July 2021, shape the Chinese leadership's views of priorities and success. Though the 14FYP focuses on development priorities for the next five years (2021–2025), its aspirations are farther reaching. According to the plan, by 2035 China's leaders envision the country will have effectively modernized in key areas and overcome various forms of economic inequality. The 2021–2025 period is also viewed as the beginning of the next phase of development toward 2049, which will mark the centennial of the founding of the People's Republic of China. According to Li Zhanshu, chairman of the Standing Committee of the National People's Congress, China has achieved the 13FYP's goal of creating a “moderately prosperous society.”⁹ The national vision for the 14FYP is to become a “modern socialist country,” a concept General Secretary Xi initially outlined in 2017 to include expansion of the middle class and reduction of income inequality.¹⁰

In remarks delivered during the Two Sessions, General Secretary Xi reportedly noted, “China can already view the world on an equal level” due to “self-confidence” in China's economic model and governance.¹¹ Party leaders' confidence in China's path extended to political and foreign policy considerations, with Foreign Minister Wang Yi claiming “2021 will be a year of epoch-making significance.”¹² Nowhere was this confidence more visible than in the CCP's decision to overhaul Hong Kong's electoral system, one made without any apparent regard for international opprobrium. Formally titled the “Decision on Improving the Electoral System of the Hong Kong Special Administrative Region,” this change reduces the number of directly elected seats in Hong Kong's legislature and allows Beijing to vet candidates for Hong Kong's Legislative Council and election committee, ensuring both are stacked with “patriots” loyal to the CCP.¹³

14FYP Highlights CCP Ambition, Exposes Longstanding Structural Problems

At the Two Sessions, the Chinese government formally unveiled the 14FYP, the broad outline of which was previewed at the October 2020 Fifth Plenary Session of the 19th Party Congress.^{*} While striking in its ambition, with 65 chapters covering topics such as technology and innovation, the digital economy, environmental sustainability, and rural development,¹⁴ the plan otherwise consolidates and confirms objectives long held by China's leaders. For example, the plan's emphasis on innovation and self-sufficiency in key technologies echoes the Chinese government's 2006 Medium- and Long-Term Plan for Science and Technology Development.¹⁵ The 2006 plan lamented China's “weak innovative capacity” and developmental deficiencies in science and technology.[†] ¹⁶ While China's leaders acknowledge that these challenges persist today, they also believe China faces an “important and strategic opportunity” because the world is undergoing “major changes unseen in a century.”¹⁷ The 14FYP accordingly calls for renewed focus and speed in transitioning China's economy to a more sustainable growth model, one underpinned by innovation and less vulnerable to external shocks and geopolitical tensions.[‡]

^{*} For more on the Fifth Plenum, see U.S.-China Economic and Security Review Commission, “Economic Self-Reliance to Dominate the Forthcoming 14th Five-Year Plan, as Growth Ebbs” in *Economics and Trade Bulletin*, November 2020, 4–6. https://www.uscc.gov/sites/default/files/2020-11/November_2020_Trade_Bulletin.pdf.

[†] For further discussion of how the Chinese government views technological self-sufficiency as core to its economic development and ability to outcompete the United States, see U.S.-China Economic and Security Review Commission, “A Global Contest for Power and Influence: China's View of Strategic Competition with the United States,” in *2020 Annual Report to Congress*, December 2020, 43–52.

[‡] Barry Naughton has argued the Chinese government's recognition of the exhaustion of China's traditional growth model together with the conviction that a new technological revolution is afoot are steeling policymakers' resolve to recalibrate China's growth model. Jude Blanchette, *Pekingology*, “Grand Steerage,” Podcast, February 11, 2021. <https://www.csis.org/node/59842>.

“Dual Circulation” Strategy Underpins 14FYP Goals

The 14FYP’s emphasis on securing China’s technological competitiveness and guarding against external risks affirms the CCP’s pursuit of “dual circulation” in the Chinese economy. First articulated by General Secretary Xi as a “new development pattern” for China’s economy at a May 2020 Politburo meeting,¹⁸ the dual circulation strategy seeks to strengthen China’s economic resilience by boosting domestic production and consumption while simultaneously maintaining strategic links with global markets to secure access to resources essential to China’s development, such as technology, commodities, and capital.¹⁹ In pursuing these domestic and global tracks in parallel, China’s policymakers hope to maintain selective access to the world economy while protecting and growing domestic economic activity to secure China’s growth.

Chinese policymakers are signaling a shift from discrete production targets to focus on an ill-defined notion of “high quality growth.”²⁰ Though the Chinese government set an annual gross domestic product (GDP) growth target of “about 6 percent” for the year 2021, the 14FYP otherwise drops mandated annual growth targets over the plan’s term (2021–2025),* indicating that growth targets will be assessed each year based on economic conditions.²¹ Hu Zucui, deputy head of the National Development and Reform Commission, framed the omission of growth targets as a positive development, claiming it will equip China’s policymakers with more flexibility to manage economic uncertainties and challenges.²² The shelving of growth targets, a long-held feature of China’s economic policymaking, marks an evolution in the government’s approach to longer-term economic planning and an implicit acknowledgement that sustained growth beyond 2021 is more uncertain. Accordingly, the plan instead emphasizes an array of softer, indicative targets aligned with specific policy priorities:

- *Digital economy*: The plan calls for the digital economy’s value added to GDP to reach 10 percent by 2025, up from an estimated 7.8 percent in 2020;²³
- *Technology and innovation*: The plan targets 7 percent annual growth in research and development (R&D) spending by 2025;^{† 24}
- *Green development*: The plan targets an 18 percent reduction in carbon dioxide intensity‡ by 2025;²⁵
- *Urban-rural integration*: The plan mandates that 65 percent of China’s population live in urban centers by 2025, up from 60.6 percent in 2020.²⁶

Overall, the plan sets 20 distinct developmental targets, down from 33 such targets in the 13FYP.²⁷ The targets are also subject to change each year based on economic conditions.²⁸ According to Scott Kennedy, expert on China’s economy with the Center for Strategic and International Studies (CSIS), the decrease in the number of targets relative to the previous five-year plan period reflects policymakers’ shift toward prioritizing the quality of China’s economic growth rather than how much output it produces.²⁹ Additionally, instead of mandating targets whose realization may be frustrated by external shocks or geopolitical uncertainties, the plan emphasizes flexibility as Beijing looks inward and focuses on building domestic economic self-sufficiency.³⁰

* In not setting an average annual GDP growth target for the 14FYP period, China’s government departed from standard practice in prior five-year plans, which set such targets. For example, the 13FYP (2016–2020) laid out a 6.5 percent average annual growth target in a bid to achieve a “moderately prosperous society” by 2020, while the 12FYP (2011–2015) set an average annual growth target of 7 percent. Expert on China’s economy Michael Pettis has argued Beijing’s setting of GDP growth targets transforms growth into an economic input rather than a measure of economic output. According to Mr. Pettis, in setting a GDP growth target, China’s leaders have guided economic activity in inefficient ways, often leading to increases in nonproductive investment and debt levels. Michael Pettis, “The GDP of Bridges to Nowhere,” *Carnegie Endowment for International Peace*, January 25, 2018. <https://carnegieendowment.org/chinafinancialmarkets/75355>.

† If realized, this would bring China’s annual R&D spending to \$580 billion by the end of the five-year plan period, more than the \$548 billion spent by all U.S. R&D performing entities (including business, government, higher education, and nonprofit entities) in 2018 (the latest year for which data are available). Tom Hancock, “By the Numbers: China Lays Out Ambitious Five-Year Targets,” *Bloomberg*, March 8, 2021. <https://www.bloomberg.com/news/articles/2021-03-09/by-the-numbers-china-lays-out-ambitious-five-year-targets?sref=mxblZFb4>.

‡ Carbon dioxide intensity measures the amount of carbon dioxide emitted per unit of GDP.

The plan's inclusion of a chapter dedicated to strengthening "national economic security" underscores the CCP's heightened emphasis on achieving self-sufficiency in essential economic resources amid perceptions of an unfavorable international environment. In contrast to the indicative targets outlined above, policymakers for the first time set mandatory minimum targets for grain and energy production. Specifically, by 2025 grain production should exceed 650 million tons annually, while energy production should exceed 4.6 billion tons of standard coal equivalent.*³¹ Comparing these targets to current trends in China's production and consumption of such resources suggests policymakers are trying to balance competing objectives. For example, though China's grain output surpassed 670 million tons in 2020,³² maintaining such a level of output may hinge on simultaneous policy efforts to protect and expand arable land.[†] Separately, China's energy consumption in 2020 (4.9 billion tons) and expected consumption in 2025 (5.6 billion tons) exceed the binding energy production floor of 4.6 billion tons of standard coal equivalent.³³ The modesty of the target suggests China's policymakers recognize complete energy self-sufficiency will be challenging to achieve and are instead seeking to ensure a baseline level of production.

In a reversal from the 13FYP's focus on cultivating service industries, the 14FYP recognizes China's centrality in global supply chains and prioritizes the protection of its comparative advantage in manufacturing.[‡]³⁴ Doing away with targets for the services sector's growth and instead calling for the share of manufacturing in the economy to remain "basically stable,"³⁵ the plan aims to protect China's strong supply chain position.³⁶ The plan's simultaneous calls for the development of digital industries and expanded use of big data, blockchain, and 5G technologies in transport and logistics suggest the development of China's digital economy will be utilized to consolidate China's strength as a nexus for global manufacturing.³⁷

The "New Frontiers" for Science and Technology Look Familiar

The Chinese government identified lack of domestic capacity in science and technology as a weakness as far back as the 1970s, with concerted efforts to modernize in this area beginning in 2006.[§] The 14FYP points to a clear intensification in the government's efforts to address this gap. In an important speech delivered in 2018 but published in 2021 to coincide with the release of the 14FYP, General Secretary Xi extolled China to "Strive to Become the World's Primary Center for Science and High Ground for Innovation." General Secretary Xi was deeply critical of China's deficiencies in the area of basic research, a weakness in China's science and technology environment that has persisted despite decades of targeted support in the field. The speech called for expanding the talent pool, building more national laboratories, and creating more policy mechanisms for research and development.³⁸ General Secretary Xi also underscored that science and technology are a key input to achieving a "modern economic system," without which China cannot achieve its goal of becoming an innovation "high ground" and world leader in science and technology.³⁹

Policymakers Envision Self-Reliance through Innovation

Rather than prioritizing numerical targets, the 14FYP emphasizes strengthening financial support for research and commercialization, consolidating research efforts across different projects, and more efficiently allocating resources in order to create a robust research environment.⁴⁰ The Chinese government aims to formulate and implement a ten-year action plan for basic research, with the goal of increasing funding for basic research to account for at least 8 percent of total R&D funding.⁴¹ The 14FYP notably has far fewer details on talent recruitment plans than the

* Standard coal equivalent offers a standardized measure of energy production that can be used across different types of energy products (e.g., coal, petroleum, natural gas) that individually produce different amounts of heat energy. American Physical Society, *Energy Units*, 2021. <https://www.aps.org/policy/reports/popa-reports/energy/units.cfm>.

† For example, in the *No. 1 Policy Document*—a key directive issued by China's government in February 2021—China's policymakers called for an additional 100 million mu (6.67 billion hectares) of "high quality" arable land to be available at all times to buffer food production against natural disasters and supply shocks. For more on Beijing's elevated attention on food security, see U.S.-China Economic and Security Review Commission, "In Focus: China's New Agriculture Policy Reflects Growing Food Security Concerns" in *Economics and Trade Bulletin*, March 2021, 9–14. https://www.uscc.gov/sites/default/files/2021-03/March_2021_Trade_Bulletin.pdf.

‡ For more on China's entrenched position in global supply chains and strength in manufacturing, see Kaj Malden and Ann Listerud, "Trends in U.S. Multinational Enterprise Activity, 2000–2017," *U.S.-China Economic and Security Review Commission*, July 1, 2020. <https://www.uscc.gov/research/trends-us-multinational-enterprise-activity-china-2000-2017>.

§ For more, see U.S.-China Economic and Security Review Commission, "A Global Contest for Power and Influence: China's View of Strategic Competition with the United States," *2020 Annual Report to Congress*, December 2020, 31–79.

13FYP, likely reflecting both the success of specific prior initiatives and the government’s discretion in publicizing talent recruitment plans that have come under increased foreign scrutiny.

Chinese policymakers are seeking to add value and achieve quality of life improvements through innovation, but they believe that to do so first requires greater centralization, leadership of the Party, and increased self-sufficiency. General Secretary Xi’s 2018 speech establishes a clear pattern of CCP thinking that innovation must “closely follow the real needs of society and people’s livelihood in the new era, as well as the needs of military-civilian integration.”⁴² At a September 2020 Scientists’ Forum, General Secretary Xi stressed that research should be driven by problems such as “economic and social development, improvement of the people’s livelihood, and national defense construction.”⁴³ General Secretary Xi outlined what has become a core theme of the 14FYP: science and technology development cannot be robust without key structural reforms within the government to better mobilize resources and centralize decisions to effectively target social development goals.⁴⁴

The 14FYP acknowledges Chinese breakthroughs and advancements in strategic emerging industries such as artificial intelligence (AI), 5G, energy storage, and construction of a global navigational satellite system (Beidou is China’s answer to GPS), while stressing the importance of technological self-sufficiency.⁴⁵ With lessons learned from numerous U.S. sanctions and pandemic-related trade disruption, China aims to strengthen itself against global shocks by reducing external dependencies, including through onshoring supply chains for critical technologies.

Chips: Going All In

There are only five explicit mentions of integrated circuits and chips throughout the 14FYP, but semiconductors are essential to all of the next-generation technologies China hopes to cultivate, including but not limited to AI, smart cities and smart transportation, the Internet of Things (IoT), and 5G deployment. Chinese policymakers have identified semiconductors as a core technology as far back as 2005, with various attempts to construct industrial policy that would carve out Chinese leadership in the sector. This has been unsuccessful due to poor management of funds and research initiatives as well as the extremely complex nature of semiconductor production. China does have some semiconductor production, but because of deficiencies in R&D, Chinese semiconductors are often nearly two generations behind world leaders and inadequate for meeting the needs and scale of China’s other cutting-edge technology developments.⁴⁶

After the United States introduced policies severely curtailing China’s access to semiconductors between 2019 and 2020, Chinese leaders dedicated more energy to reaching the Made in China 2025 goal of domestically producing 70 percent of chip needs at home by 2025, though it currently produces only 16 percent domestically.⁴⁷ Prior to the release of the 14FYP, Chinese policymakers had already set a number of measures in motion to achieve that goal:

- The National Integrated Circuits Fund launched in 2014 with the goal of Chinese leadership in the semiconductor industry by 2030, dedicating \$150 billion in funding to R&D along with supporting specific domestic enterprises. By October 2017, the Semiconductor Industry Association estimates China had raised \$80 billion of its goal.⁴⁸
- In October 2019, China announced another fund of \$29 billion for semiconductor production largely backed by Chinese state-owned enterprises (SOEs).⁴⁹
- In August 2020, the State Council introduced tax exemptions for chipmakers producing more advanced semiconductors. For the most advanced chips, producers will reap profits tax-free for ten years while the next most advanced category of production will earn producers a five-year tax exemption.⁵⁰
- In March 2021, China’s Ministry of Finance announced tax breaks through 2030 for chipmakers importing machinery and raw materials.⁵¹

On the Horizon of Innovation Frontiers

The 14FYP emphasizes increasing momentum for innovation and its application, capitalizing on the achievements of the 13FYP. As Dr. Kennedy notes, China met or was on track to meet all but two of its 33 goals from the 13FYP.⁵² The 14FYP stresses achieving breakthroughs in seven “frontiers of science and technology”: next-generation AI;

quantum information; integrated circuits; neuroscience; genetics and biotechnology; clinical medicine and health sciences; and deep space, sea, and polar exploration.⁵³

Emphasis on specific sectoral targets for innovation has not changed significantly between the eras of the 13th and 14th FYPs (see Table 1), reflecting both the importance of these sectors and China’s continued struggle to achieve desired domestic capability. Made in China 2025 was released just prior to the 13FYP and was incorporated into the plan’s implementation, making for a useful frame of reference in understanding the progress of Chinese industrial policy, or lack thereof. What differentiates the 14FYP, along with many other recent policy documents, is an approach that directly ties together innovation, development, and security. Innovation is viewed as an enabler for many other sectors that will support Chinese growth and help the government mitigate against domestic and international challenges. The Chinese government also intends to release a second edition of its National Medium- and Long-Term Plan for Science and Technology Development (2021–2035), which will further elaborate on specific measures and priorities.

Table 1: China’s Key Technology and Sectoral Targets Comparison

Made in China 2025 (2015)	14th Five-Year Plan
Next-Generation IT Integrated Circuits	Quantum Information Integrated Circuits Beidou* NavSat Industry
High-End Computerized Machines and Robots	Major Technical Equipment Smart Manufacturing and Robotics
Space and Aviation	Space and Aviation Airplane Engines and Gas Turbines
Maritime Equipment and High-Tech Ships	Ships and Maritime Equipment
Advanced Railway Transportation Equipment	Advanced Railway Transportation Equipment
New Energy and Energy-Saving Vehicles	New Energy Vehicles and Smart (Connected) Vehicles
Energy Equipment	Advanced Energy Equipment
Agricultural Machines	Agricultural Machinery and Equipment
New Materials	High-End New Materials
Biopharmaceuticals and High-Tech Medical Devices	High-End Medical Equipment and Innovative Drugs

Source: Simon Rabinovitch (@s_rabinovitch), “‘Made in China 2025’ is dead. Long live ‘Made in China 2025’! China’s new Five-Year Plan is not nearly as detailed as its controversial MiC 2025 plan, but it targets all the same sectors & technologies, plus a few more.” Twitter, March 11, 2021, 10:26 p.m. https://twitter.com/S_Rabinovitch/status/1370214528571514884.

China’s policymakers still envision a role for foreign companies in spite of the quest for self-sufficiency and increasing exercise of state influence across various areas of the market. U.S. companies continue to believe there is untapped opportunity from China’s enormous population, particularly when the government is clearly so interested in promoting greater consumption and “demand-driven supply.”⁵⁴ These opportunities may exist, however incremental, but U.S. companies may also face intensified competition from Chinese companies for the domestic Chinese market.⁵⁵ Extensive Chinese investments to develop and apply technology continue to pose

* Beidou is China’s global navigation satellite system and has achieved global coverage as of 2020 with 35 satellites worldwide. Beidou is operated by the China National Space Administration. Global Positioning System, *Other Global Navigation Satellite Systems*. <https://www.gps.gov/systems/gnss/>.

challenges to U.S. global competitiveness and leadership in cutting-edge technologies. Chinese policymakers are also seeking to strengthen Chinese domestic standards development and promotion of these standards globally. This is particularly important as Chinese policymakers are preparing to release and implement China Standards 2035, a yet-unpublished initiative promoting greater Chinese participation in international standards and promotion of Chinese standards in international standards-setting bodies, particularly in next-generation technologies.⁵⁶

Climate Targets Inadequate to Meet China's Climate Pledges

As the world's greatest emitter, China's cooperation is critical for the global community's ability to meet the Paris Agreement's target of keeping global warming below 2 °C: the country accounts for 28 percent of global emissions, as much as the United States, the EU, and India combined.⁵⁷ The Chinese government has sought to portray itself as a global champion for the environment and to increase China's dominance in renewable energy technologies. In September 2020, General Secretary Xi pledged to peak China's carbon emissions by 2030 and reach carbon neutrality by 2060. To date, however, the Chinese government has failed to implement and enforce policies necessary to meet its international commitments.

On the domestic front, environmental protection is a top concern for the CCP and a key test of its ability to address public dissatisfaction with high levels of pollution.⁵⁸ A readout from the March 2021 meeting of the Central Committee for Financial and Economic Affairs chaired by General Secretary Xi describes achieving the 2030 and 2060 goals as “a big test for our Party's governance capacity.”⁵⁹ Under General Secretary Xi, the Chinese government has promoted the concept of “ecological civilization,”* essentially a type of “environmentalism with Chinese characteristics” characterized by top-down governance.⁶⁰ This model is reflected in the 14FYP's emphasis on environmental redlines and reshaping land use to promote nature-based climate solutions.⁶¹ China's longer-term climate commitments have come into conflict with short-term economic stimulus: China was the only major economy to increase carbon dioxide emissions in 2020, as both central and provincial governments continued to rely on carbon-intensive industries like construction and coal to drive economic growth.⁶²

The 14FYP's unambitious climate benchmarks cast doubt on China's ability to meet its commitment to reach carbon neutrality by 2060. Because the goal to peak carbon emissions by 2030 does not include a carbon cap, China's government is not obligated to set interim goals to slow or reduce the country's growing emissions. Analysis by the Asia Society Policy Institute and Climate Analytics suggests China needs to reach peak emissions by 2025 in order to meet the Paris Climate Agreement.⁶³ Instead, the 14FYP plans for ongoing construction of fossil fuel-related infrastructure and allows for continued emissions growth, which would result in greater overall carbon emissions and potentially lock in carbon-centered infrastructure.⁶⁴

At the Leaders Summit on Climate, convened by President Joe Biden in April 2021, General Secretary Xi pledged to limit China's increase in coal consumption during the 14FYP and peak coal consumption by 2025.⁶⁵ The pledge is a necessary component of China's 2030 carbon peak target and potentially represents greater political commitment to this goal, but strict implementation will be key. There is no specific cap on carbon emissions or coal consumption; instead, the pledge only requires China to “strictly limit increasing coal consumption.”⁶⁶ In practice, this means China's government could continue tolerating increasing consumption of coal during the entire 14FYP period before trying to restrict it after a potentially high peak in 2025.⁶⁷

Official reporting shows China has typically met emissions targets defined in its FYPs. For example, China overperformed its emissions targets in the 12FYP and the 13FYP, according to data from the State Council.⁶⁸ However, the absence of hard caps on emissions in the 14FYP and a nonbinding target for renewable energy production suggest a lack of political commitment to the shift in energy and emission strategy necessary to meet both its climate commitments and the Paris Agreement.⁶⁹

* The ecological civilization model emphasizes the centrality of the CCP in achieving environmentally sustainable development and blends environmental and commercial interests. Heidi Wang-Kaeding, “What Does Xi Jinping's New Phrase ‘Ecological Civilization’ Mean?” *Diplomat*, March 6, 2018. <https://thediplomat.com/2018/03/what-does-xi-jinpings-new-phrase-ecological-civilization-mean/>.

Emissions and Energy Intensity

- *Rather than capping emissions, the 14FYP's energy-related binding targets for 2020–2025 are given as a percentage of GDP, which would allow overall emissions to grow as the economy expands.* The 14FYP targets a 13.5 percent reduction of energy intensity and an 18 percent reduction in carbon dioxide intensity by 2025, but it does not include a cap on emissions or the use of coal. GDP growth of 5.5 percent from 2021 to 2025 would result in a 1.1 percent annual rise in emissions, up from roughly 10 billion tons in 2020 to 10.6 billion tons in 2025.⁷⁰ Modeling by the Center for Research on Energy and Clear Air (CREA) indicates China needs to cap its carbon emissions at 8.75 billion tons by 2025 in order to be on a linear path to its 2060 goal.⁷¹
- *Energy and carbon dioxide intensity reduction targets do not represent an acceleration from previous trends, which experts have identified as necessary to meet the Paris Agreement.* The 14FYP targets a 13.5 percent reduction of energy intensity. This is down from the 15 percent reduction target in energy intensity under the 13FYP and below the 14 percent target recommended by the Tsinghua University Institute for Climate Change and Sustainable Development (ICCSA).⁷² The 14FYP targets 18 percent reduction in carbon dioxide intensity, which similarly does not represent an acceleration from previous trends—China's carbon dioxide intensity was down 18.8 percent from 2015 to 2020—and is below the ICCSD's recommended 19 percent reduction.⁷³ At the same time, the 14FYP calls for “basically eliminating” heavy air pollution days by 2025, which would require a 70 to 80 percent reduction in pollution, according to Peng Yingdeng, a researcher with the National Urban Pollution Control Technology Center.⁷⁴
- *The Chinese government's climate commitments continue to exclude the impact of Chinese-funded and -constructed fossil fuel projects overseas.* While the 14FYP notes the Belt and Road Initiative should be “green, open, and clean,” it does not contain any measurable commitments to reduce funding for fossil fuel projects overseas. China is a major funder for fossil fuel projects abroad, financing about 53 GW in coal power capacity since 2013.⁷⁵ The China-founded Asian Infrastructure Investment Bank pledged to end coal-related financing in September 2020, but the promise is not reflected in its energy sector strategy or environmental and social framework.⁷⁶ China Export-Import Bank and China Development Bank, which account for the majority of China's official overseas lending and provided more than \$251 billion in energy sector loans from 2000 to 2019, have yet to make any commitments on fossil fuel funding.⁷⁷ In contrast, the Japanese government has promised to scale back coal investments, and many major international financial bodies have ended funding for coal power plants.⁷⁸

Energy Production

- *The Chinese government's focus on achieving energy security through domestic energy production maintains focus on fossil fuels.* The 14FYP targets at least 4.6 billion tons of standard coal equivalent in domestic energy production, equivalent to 95 percent of China's overall energy consumption in 2019.⁷⁹ To achieve this target, the 14FYP supports the ongoing development of coal power and oil and gas production, despite the associated increase in emissions and the risk that these infrastructure projects could become stranded assets* if China transitions toward carbon neutrality in 2060.⁸⁰ China currently has 21,296 miles of oil and gas pipelines under construction domestically, more than any country, which could lead to 24 billion tons in lifetime carbon dioxide emissions.⁸¹ Any coal power plants constructed this year will have to be phased out by 2040 in order to achieve carbon neutrality by 2060.⁸² While the construction of some cleaner coal plants may be necessary to replace older and less efficient plants, the ongoing construction of coal plants is also reflective of an overall failure to translate national-level climate commitments into planning by provinces, power grids, and state-owned oil companies.⁸³

* In this case, stranded assets are fossil fuel projects decommissioned before the end of their anticipated lifespan or that are otherwise unable to earn an economic return due to a transition to a low-carbon economy. The potential costs of these stranded assets may pose a political obstacle to a transition away from fossil fuels: Global Energy Monitor estimates the oil and gas pipelines currently under construction in China could result in \$173 billion in stranded assets. Carbon Tracker, “Stranded Assets,” August 23, 2017. <https://carbontracker.org/terms/stranded-assets/>; James Browning et al., “Pipeline Bubble 2021: Tracking Global Oil and Gas Pipelines,” *Global Energy Monitor*, February 2021. <https://globalenergymonitor.org/wp-content/uploads/2021/02/Pipeline-Bubble-2021.pdf>.

- *The 14FYP lacks a coal consumption cap, which would have provided additional incentive to move away from coal production.* According to the Asia Society Policy Institute, coal should be reduced to 10 percent of China’s energy consumption by 2030 to meet the Paris Agreement.⁸⁴ Instead, climate pledges issued by China’s government after the release of the 14FYP leave plenty of room for increasing coal consumption: At the April 2021 Leaders Summit on Climate, General Secretary Xi pledged only to “strictly limit increasing coal consumption” during the 14FYP.⁸⁵ Lauri Myllyvirta, lead analyst at CREA, notes General Secretary Xi’s pledge “is a direct consequence of the target to peak CO2 emissions before 2030, so it is providing more clarity rather than increasing the level of ambition.”⁸⁶ Coal accounted for 56.8 percent of China’s total energy consumption in 2020 and is anticipated to fall to 50 percent by 2025, according to a research center associated with China’s State Grid.⁸⁷ If China’s overall energy use continues to increase, however, the use of coal could continue to climb in absolute terms even if its relative share in China’s energy mix declines.
- *The 14FYP sets a target for 20 percent nonfossil fuel usage, but it is nonbinding.* The 20 percent target is up 5 percent from 15.8 percent nonfossil fuel usage in 2020 but under the 25 percent target recommended by CREA to meet the 2060 carbon neutrality commitment.⁸⁸ While China could still meet the 2060 commitment with a rapid increase in the use of nonfossil fuels, a later transition to nonfossil fuel usage will result in greater emissions in the interim.
- *Specific targets for nuclear energy production position China to become the global leader in nuclear energy capacity.* The 14FYP targets 70 GW of nuclear energy capacity by 2025, up from 52 GW in current capacity, accounting for 4.8 percent of China’s overall energy production and 11.7 percent of global nuclear capacity.⁸⁹ The China Nuclear Energy Association predicts that nuclear power capacity will reach 340 GW by 2050, accounting for about 20 percent of China’s electricity.⁹⁰ China became the first country to commercialize a third-generation nuclear reactor in September 2020 and is expected to become the world’s largest nuclear generator in the next ten years.⁹¹

New Energy Technology

- *The 14FYP calls for development of new energy and new energy vehicles as well as the “intelligent transformation of power grid infrastructure,” but it does not include specific targets.* In foregoing clearly defined targets, China’s government provides a rhetorical direction for lower-level officials and a general indication of ongoing financial support for new energy companies in the forms of loans and subsidies, but it makes no commitment to the development and implementation of specific technologies. Chinese government support for its renewable sector has made China a leader in renewable technology: Chinese companies currently control “at least 60 percent of global capacity for every step in the [solar] supply chain,” according to Bloomberg.⁹² A recent report by the investment bank HSBC found “China [is] best-placed to make profits as the world moves toward a lower carbon future,” based on factors including China’s production scale in nuclear reactors, batteries, and renewable energy components.⁹³ Support for the renewable sector seems likely to continue. China’s Ministry of Finance increased renewable power subsidies to \$905.7 million for 2021, up 4.9 percent from 2020.⁹⁴

Dependency Ratio, Rural-Urban Divide Acquire New Urgency

To realize the broader socioeconomic goals articulated in the 14FYP, the Chinese government proposes a number of policy initiatives aimed at addressing legacy structural challenges in China’s economy, including deep and growing rural-urban inequality and a rapidly increasing dependency ratio, or the ratio measuring the number of dependents to the working age population. Many of the initiatives are not new but have taken on added urgency as China’s economic growth slows. For the CCP, an overriding imperative is rapidly increasing China’s overall urbanization by integrating rural residents into China’s cities where they can access better public service systems.

The Chinese government believes that mass rural to urban migration will trigger creation of more high-skilled manufacturing and service jobs in urban centers while also freeing up farmland for more efficient, large-scale agricultural operations. Additionally, the government hopes better access to social welfare would boost China’s

domestic consumption by enabling rural migrants to save less to cover contingent medical, education, and other costs. Improving labor productivity and boosting household spending are key objectives in the dual circulation strategy, though hurdles to implementation are high. The Chinese government has struggled for decades to shift toward a more consumption-driven growth model, while the contribution of productivity growth to aggregate GDP growth* has stalled since the global financial crisis.⁹⁵

Proposed Hukou and Labor Reforms Too Limited to Address Demographic Decline

China's 14FYP includes several policies intended to improve labor markets through increased labor mobility, improved public services for low-income and rural populations, and policies intended to ease the economic impact of China's shrinking labor force. Under the "one-child policy," which was in force between the late 1970s and 2016, China's fertility rates fell significantly, with the size of China's population projected to decrease by almost half over the next 80 years.⁹⁶ While China's abundant labor has been a key driver of economic growth over the last several decades, this source of growth is projected to lose steam unless China significantly improves labor productivity through human capital investment and increased labor market efficiency. In tandem with its urbanization strategy, China's government is also promoting poverty alleviation and rural revitalization, which focus on improving labor productivity, raising household incomes, and supporting growth and innovation within key sectors like agriculture.

Reform of the *hukou*—or household registration—system is a major component of China's labor market reforms.[†] Because China's *hukou* system ties access to public services to an individual's location of registration, which for many migrants is their place of birth, it is a significant barrier to labor mobility. It has also generated stark economic inequalities within China's cities, as over 200 million migrant workers currently reside in China's cities without *hukou* status, leaving them unable to access public services.⁹⁷ The CCP hopes to address these problems by lifting registration restrictions for small or lower-tier cities[‡] while relaxing restrictions for mid-tier cities. This policy may allow currently unregistered migrant workers to gain *hukou* and is likely to attract additional migrants to mid- and lower tier cities, but it risks exacerbating existing fiscal pressures on local governments to provide public services to an influx of new *hukou* holders.

A clear limitation of Chinese government's *hukou* policies to date is that although they help rural residents get an urban *hukou*, they do not entail corresponding increases in public service provision to meet the needs of new residents.⁹⁸ The problem is particularly pronounced in inland cities that China hopes can draw more migrants. For example, officially registered households in 16 prefecture-level and above cities around the Chengdu and Chongqing area in central China grew by 0.5 percent from 2013 to 2016, but urban pension and medical coverage

* Productivity growth is measured in the incremental capital-output ratio, or "the amount of capital it takes to produce an additional unit of output in value terms." In contrast to 1978–2007, during which upward of 70 percent of China's GDP growth per capita was due to sectoral improvements and reallocation of resources from low- to high-efficiency sectors and firms, GDP growth has mostly been driven by extensive investment in property and infrastructure since 2007. Loren Brandt, written testimony for the U.S.-China Economic and Security Review Commission, Hearing on *An Assessment of the CCP's Economic Ambitions, Plans, and Metrics of Success*, April 15, 2021, 3–4, 14. https://www.uscc.gov/sites/default/files/2021-04/Loren_Brandt_Testimony.pdf.

† Dating to 1958, the *hukou* system effectively constrains internal mobility of citizens between localities within China. A person's *hukou* essentially functions as an internal passport mechanism, creating by default two classes of citizens: those with urban *hukou* who enjoy access to far better public services, particularly in more developed cities, and those with rural *hukou* who can only access the limited public services of China's poorer localities.

‡ Chinese cities are unofficially but widely grouped into four "tiers" based on population, affluence, and whether they are governed at a provincial level (e.g., Shanghai, Chongqing, Beijing, and Tianjin are provincial-level municipalities), as provincial capitals, or at lower echelons of administrative hierarchy. For example, Shanghai is a first-tier city; Chengdu, the populous capital of Sichuan and a regional hub in the southwest, is a second-tier city; Wenzhou, a prefecture-level port city and tourist destination on the coast of Zhejiang Province, is a third-tier city; and Xiangcheng, a county-level city in Henan Province famous foremost as the birthplace of the first president of the Republic of China, Yuan Shikai, is a fourth-tier city. Dorcas Wong, "China's City-Tier Classification: How Does It Work?" *China Briefing*, February 27, 2019. <https://www.china-briefing.com/news/chinas-city-tier-classification-defined/>.

shrank by 5.4 and 3.1 percent, respectively, over the same period.*⁹⁹ The 14FYP does not introduce extensive measures to ease migration restrictions in top-tier cities, simply instructing them to improve the inclusivity of their registration systems by increasing the weight given to length of residency and the duration of social insurance payments made to local governments when considering applicants' hukou eligibility.[†] At the same time, however, China's government plans to conjoin the public service systems of top-tier cities with adjacent lower-tier cities and towns through regionally integrated urban hubs. In establishing regionally integrated service infrastructure, Chinese policymakers hope to achieve economies of scale in public service provision while also relieving pressure in already strained metropolitan centers like Beijing and Shanghai.¹⁰⁰

In addition to hukou reform, the 14FYP includes numerous reforms intended to address economic inequality and China's demographic decline, including:

- *Poverty alleviation and rural revitalization.* China's 14FYP emphasizes the long-term solidification and expansion of General Secretary Xi's antipoverty campaign, which he declared a success in February 2021.¹⁰¹ China plans to create a "rapid detection and response" mechanism to monitor individuals and localities at risk of backsliding into poverty, while simultaneously improving the provision of rural public services and social insurance to China's poorest populations.¹⁰² Specifically, the 14FYP mandates improvements to the *dibao* system, China's rural low-income cash transfer system, as well as improvements to the in-kind benefits targeted to *dibao* recipients, such as education, housing, and medical support.¹⁰³ The CCP's poverty alleviation campaign will further expand into a broader campaign for rural revitalization, whereby rural employment is increasingly tied to the development of emerging national industries, such as the seed industry.[‡]
- *Preparing for a shrinking workforce and aging population.* China is in the midst of a profound demographic decline, with the working population poised to shrink while the dependency ratio rises. The 14FYP makes an attempt at addressing this challenge from one end by introducing measures intended to increase fertility rates by reducing the costs of childcare and education for large families, expanding access to parental leave, and potentially relaxing family planning restrictions such as the current "two-child policy."¹⁰⁴ The 14FYP also mandates a gradual increase in China's retirement age, which has remained at 60 for men and 50 for most women since 1980, in an effort to address the other end of the dependency ratio by delaying the age at which individuals transition from the workforce to become part of China's expanding population of retirees.¹⁰⁵ Without any changes to the retirement age, the number of workers supporting each dependent would decrease from 2.13 in 2019 to 1.04 in 2050, while the number of retirees would increase by 172 percent.¹⁰⁶

Land Policy Repeats Promises to Address Political Bottlenecks

China's 14FYP proposes several critical changes to ownership and management of land, including reducing the scope of land seizures by local governments and increasing the transferability of rural land.¹⁰⁷ The government is also considering legislation to establish a real estate tax on urban residential property, which has been proposed several times but never advanced beyond inclusion in the annual legislative agenda.¹⁰⁸ None of these policy

* Low growth in registered households further highlights the limitations in public service provision, as Chongqing and Chengdu both have large migrant populations. Chongqing's urban population without local household registration grew from 3.9 million to 5 million between 2013 to 2016, according to local government statistics. Its total urban population was 17.3 million in 2013 and 19.1 million in 2016, so the unregistered population grew from 22.4 percent to 26.2 percent of the urban population. Official data are unavailable for Chengdu in 2013, but in 2016 the urban population without local household registration was 3.4 million, or 30.2 percent out of the total urban population of 11.2 million. Chongqing Municipal Statistics Bureau, *Statistical Communiqué of Chongqing on the 2016 National Economic and Social Development* (2016 年重庆市国民经济和社会发展统计公报), May 29, 2019. Translation; Chongqing Municipal Statistics Bureau, *Statistical Communiqué of Chongqing on the 2013 National Economic and Social Development* (2013 年重庆市国民经济和社会发展统计公报), May 29, 2019. Translation; Chengdu Municipal Statistics Bureau, *Statistical Communiqué of Chengdu on the 2013 National Economic and Social Development* (2016 年成都市国民经济和社会发展统计公报), May 24, 2017. Translation.

† China's most prosperous cities currently have highly restrictive hukou eligibility criteria, scoring applicants on socioeconomic factors such as educational attainment and sought-after skills. *Xinhua*, "Beijing's Hukou Reform Brings 1st Group Beneficiaries," October 17, 2018. http://www.xinhuanet.com/english/2018-10/17/c_137537183.htm.

‡ For more information on the Chinese seed industry and food security, see U.S.-China Economic and Security Review Commission, "In Focus: China's New Agriculture Policy Reflects Growing Food Security Concerns," in *March 2021 Economics and Trade Bulletin*, March 9, 2021. https://www.uscc.gov/sites/default/files/2021-03/March_2021_Trade_Bulletin.pdf.

proposals are new, but all of have proven difficult to implement due to both political resistance and the potential economic disruption they could cause when implemented at a national scale.¹⁰⁹

The transition to private leasing of property from communal ownership in China's cities during the 1990s created tremendous pockets of household wealth and strong political resistance against changes that could impact property values.¹¹⁰ China's villagers likewise view their right to farm and live on land as an economic lifeline, even though the communally owned land has not enabled private accumulation of wealth.¹¹¹ Because land ownership policies are at the heart of China's hukou system and urban-rural inequality, however, devising a more equitable land ownership regime is increasingly tied to CCP legitimacy.¹¹² The uneven economic recovery during 2020, in which urban households rebounded far faster than those of rural households, further underscores the need to reduce the urban-rural wealth gap.¹¹³ Each change to China's land ownership regime and the corresponding challenges in implementation are detailed below.

- *Reducing forced land transfers.* Lacking sufficient tax revenue to meet their expenditure obligations, many local governments in China generate a substantial portion of their revenue through land expropriation: the governments compel farmers to sell rights to their land* to the government far below market value, rezone this land as “urban,” and then lease it to property developers at a significant return.[†]¹¹⁴ While the widespread practice has generated immense civil unrest, China's central government has struggled to reign in forced transfers for fear of squeezing already heavily indebted local governments.¹¹⁵ The 14FYP pledges to “reduce the scope of land expropriation” and to “establish a public interest recognition mechanism for land expropriation.”¹¹⁶ November 2020 trial regulations from China's Ministry of Land and Resources outlining the basis of such a mechanism would grant rural collectives the right to veto proposed rural-to-urban land conversions unless the conversions garner a two-thirds majority approval from the collective.[‡]¹¹⁷
- *Increasing rural land transferability.* Many of China's rural migrants view their right to use rural land as a last resort if they are unable to find employment in cities and are reluctant to transfer or cede these rights. A substantial portion of fragmented rural plots consequently sit idle and farms are therefore unable to establish large-scale mechanized agricultural operations, a tenet of both Chinese food security and industrial strategy.¹¹⁸ The 14FYP lists several objectives to increase the transferability and value of rural residents' use rights and streamline farmland use, including enabling rural households to sell the use rights to idle plots. Policymakers hope these changes incentivize rural migrants to view transferring these rights as an opportunity for economic gain, rather than treating land use rights as a fallback.¹¹⁹ China's government confronts a number of barriers to implementation, however. The basic elements of China's land administration are still fragmented at a national level, while rural hukou holders also deeply distrust local governments after decades of forced land transfers.

* While village collectives own land, individual households have “homestead” rights to farm and build houses on parcels of land. Though households cannot sell parcels owned by the village collective, they can transfer them, use them as collateral, or in some cases exchange them with local governments for housing in nearby cities. In forced transfers, local governments often compel villagers to move into nearby housing. Qiujie Zheng et al., “Chinese Farmers' Preference for Rural Homestead Land Use: Mechanism, Knowledge, and Perception,” *2020 Agricultural and Applied Economics Association Virtual Meeting*, August 2020, 2–4; Meg Rithmire, “Land Institutions and Chinese Political Economy: Institutional Complementarities and Macroeconomic Management,” *Politics & Society* 45:1 (2017), 123–153, 135, 142. https://www.hbs.edu/ris/Publication%20Files/PoliticsSociety2017_69188ed6-01c7-481e-90a5-24d705acb8e5.pdf.

† Rural land is owned by village collectives, while the state owns all urban land in China and leases it to property holders for varying durations depending on the land use—70 years for residential use, 50 years for commercial use, and 40 years for industrial use. Local governments also frequently raise capital through loans from quasigovernment investment vehicles using converted land as collateral. Meg Rithmire, “Land Institutions and Chinese Political Economy: Institutional Complementarities and Macroeconomic Management,” *Politics & Society* 45:1 (2017), 123–153, 126, 135; *China Economic Review*, “If Beijing Is Your Landlord, What Happens When the Lease Is Up?” June 17, 2013. <https://chinaeconomicreview.com/china-land-lease-property-law-ownership-rights/>.

‡ Chinese law permits the state to seize land in the interest of “public welfare,” a term local governments have interpreted loosely. The trial measures seek to clarify implementation of the 2019 revision of China's Land Administration Law, which for the first time defined public welfare but was weak on prescriptions to adjudicate disputes in interpretation. Huang Xiaofang, “Land Expropriation and Development Have New Regulations, Farmers' Rights and Interests to Be Better Protected” 土地征收成片开发有新规 农民权益将获得更多保护, *Economic Daily*, November 10, 2020. Translation. [http://webcache.googleusercontent.com/search?q=cache:NN2CVRcyc_wJ:views.ce.cn/view/ent/202009/24/t20200924_35808886.shtml](http://webcache.googleusercontent.com/search?q=cache:biW9ITGoqEAJ:www.gov.cn/xinwen/2020-11/10/content_5560113.htm; Duan Wenji and Song Jiqing, “Discussion on a Preliminary Definition of Public Interests and Dispute Resolution Mechanisms in Land Acquisition” 土地征收中公共利益前置界定及争议裁决机制探讨, <i>China Economic Net</i>, September 24, 2020. Translation. <a href=).

Certificates to farm, live on, or transfer rural land, required by China’s State Council since 1990, still have not been universally adopted by Chinese villages.*¹²⁰ Even assuming these hurdles are overcome and villagers willingly transfer their land, there is no guarantee that farms will rent the use rights and a rural land market will form.¹²¹ For instance, in a land transfer pilot program in Shandong, China’s largest agricultural province by value of output, large grain growers returned land to rural hukou holders or simply abandoned multiyear rental agreements without paying villagers after grain prices fell in 2015 and 2016.¹²²

- *Advancing real estate tax legislation.* A tax on real estate holdings could provide a vital source of fiscal revenue for cash-strapped local governments.¹²³ Municipal governments in China currently assess a tax on property transactions but not a recurring tax on property ownership. By imposing a cost on holding property, a real estate tax would act to curb rampant speculation in the property market, which is currently a primary avenue for investment by wealthy Chinese households.¹²⁴ China’s government faces significant hurdles in implementing a real estate tax, including longstanding concerns among policymakers that introducing the tax too abruptly could cause housing prices to tumble and chill demand for new property construction—a substantial driver of economic activity in China.¹²⁵ Although proposals for the real estate tax have been made at the highest level—notably in the sweeping November 2013 Third Plenum decision, which captured General Secretary Xi’s policy priorities[†]—implementation has not progressed beyond small trials in Shanghai and Chongqing predating the Third Plenum decision.¹²⁶ The National People’s Congress (NPC) last addressed the real estate tax in 2019, which prompted an immediate drop in property developer stock prices; no mention of the tax was made in subsequent years, including in 2021 as the government was gearing up to float the proposal in the 14FYP.¹²⁷

Urban Planning Seeks to Advance Broader Economic Policy Goals

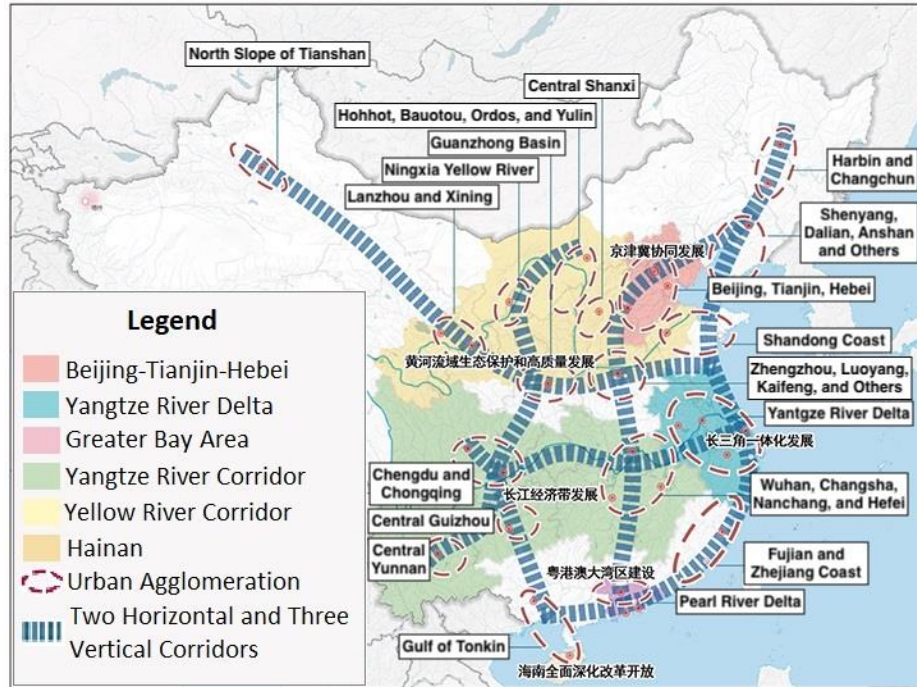
Integral to the urbanization drive envisioned under the 14FYP is a focus on integrating large metropolitan areas with surrounding towns and suburbs.¹²⁸ These regional hubs, called “urban agglomerations” or “urban clusters” in the language of the plan, build on past policy initiatives and pilots, in particular the Beijing-Tianjin-Hebei integration and Greater Bay Area (see Figure 2).[‡] Compared to past urbanization policies such as the New Type Urbanization Plan, however, urban agglomeration is a clear priority over other city planning objectives, such as bolstering the population of smaller cities and towns. Increased emphasis on urban planning reflects its centrality in the broad economic vision articulated in the 14FYP.¹²⁹ Supporting the dual circulation strategy, China’s industrial policy plans to equip growing, highly connected smart cities with next-generation information and communications technologies (ICT), which are intended to lead the transition toward a more consumption-driven economy.¹³⁰ China’s urbanization strategy reflects yet another supply-side push to address longstanding economic issues, yet it is unlikely urban planning alone can generate enough downstream demand to solve underlying structural imbalances such as lackluster consumption.

* Civic education regarding rural hukou holders’ rights and limitations is also lacking, with one survey finding only 3.7 percent of 405 rural respondents could correctly answer the question “who owns rural homestead land?” Qiuji Zheng et al., “Chinese Farmers’ Preference for Rural Homestead Land Use: Mechanism, Knowledge, and Perception,” *2020 Agricultural and Applied Economics Association Virtual Meeting*, August 2020, 10–11, 29.

† Many changes to public finance proposed by the decision were implemented swiftly after the document’s release, including allowing provinces to issue their own debt, but property tax implementation remains a key exception. Philippe Wingender, “Intergovernmental Fiscal Reform in China,” *International Monetary Fund Working Paper* 18/88, April 2018, 4–5; Daniel Rosen, “China’s Fiscal and Tax Reforms: A Critical Move on the Chessboard,” *Rhodium Group*, July 11, 2014. <https://rhg.com/research/chinas-fiscal-and-tax-reforms-a-critical-move-on-the-chessboard/>.

‡ The Beijing-Tianjin-Hebei (京津冀) urban cluster is an urban planning initiative that aims to link China’s capitol of Beijing with the surrounding Hebei Province and the adjacent coastal city of Tianjin. Similarly, the “Greater Bay Area” links Hong Kong and Shenzhen, immediately north of Hong Kong, with surrounding factory towns of the Pearl River Delta, aiming to boost the economic dynamism of the region. Hong Kong Constitutional and Mainland Affairs Bureau, *Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area* (Courtesy Translation), February 18, 2018. https://www.bayarea.gov.hk/filemanager/en/share/pdf/Outline_Development_Plan.pdf; Nicolas Douay and Wei Qi, “China’s Spatial Planning during the Transition: Towards a More Integrated Model,” *Achieving Territory Becomes Matter of State Importance: Essentials for Coordination of Spatial Planning Policies* (Tirant Humanidades, 2018), 731–758, 747–748.

Figure 2: Urban Agglomerations Designated in the 14FYP



Note: The 14FYP outlines 19 urban clusters and six integrated interprovincial regions (color-coded as indicated in the figure legend) along “two horizontal and three vertical” corridors, a geographic concept first proposed in 2010 that sought to develop China’s inland cities through links to its developed eastern seaboard.¹³¹

Source: State Council of the People’s Republic of China, *The Fourteenth Five-Year Plan for National Economic and Social Development of the People’s Republic of China and the Outline of Long-Term Goals for 2035* (中华人民共和国国民经济和社会发展第十四个五年规划和2035年远景目标纲要), March 12, 2021. Translation.

- *Urbanization as industrial policy.* China’s government has earmarked between \$1.4 trillion and \$2.5 trillion over the next five years to upgrade cities’ digital infrastructure with key next-generation technologies such as 5G, IoT, and electric vehicles.¹³² This could serve multiple purposes, including building a domestic market for Chinese providers of these technologies, giving a boost to China’s reach for global technological leadership, and increasing the government’s domestic data collection and surveillance capabilities. The CCP has long favored infrastructure investment to address economic challenges, yet enormous capital outlays for domestic infrastructure may perpetuate excess capacity problems while investments in 5G network architecture may not even see commercial returns until 2027, according to an estimate cited by *Caixin*.¹³³ For Chinese policymakers, however, these near-term costs are outweighed by the prospect of long-term impact from cultivating internationally competitive companies that might export China’s smart city model abroad. This is exemplified by the Alibaba City Brain, which was first implemented in Hangzhou before being exported to the Malaysian capital of Kuala Lumpur.*¹³⁴ As of January 2020, at least 34 Chinese companies were involved in smart city projects in 106 countries—many of which involved the implementation of higher-value-added smart city packages with integrated solutions rather than individual ICT components or parts.¹³⁵
- *Urbanization as social policy.* Indicating China’s intention to use urbanization as a vehicle for social policy, the 14FYP emphasizes urbanization with “people at the core.”¹³⁶ By encouraging urban agglomeration, China plans to leverage economies of scale to enable greater access to social services while relieving pressure on the overall social services infrastructure. Furthermore, by expanding the urban social safety net to newly registered migrant workers, China aims to increase migrants’ disposable incomes, which has been a key stumbling block

* Smart cities systems employ networked technologies like cameras, sensors, and location devices to collect a wide variety of data for urban management, including traffic flow, energy usage, and crime. Katherine Atha et al., “China’s Smart Cities Development,” *SOSi’s Special Programs Division* (prepared for the U.S.-China Economic and Security Review Commission), April 29, 2020. <https://www.uscc.gov/research/chinas-smart-cities-development>.

in shifting China's economy toward consumption-led growth. The 14FYP also stresses the need to rationalize central government fiscal transfers to local governments with increased migrant flows, particularly in funding affordable housing construction and renovation as well as expanded public services.¹³⁷

The New Type Urbanization Plan and “Small Town Development”

The most recent iteration of Chinese government's urbanization policy is captured in the New Type Urbanization Plan, introduced in April 2014. The plan focused on increasing the population of China's smaller cities—an unsuccessful approach policymakers have quietly deemphasized in the 14th FYP. Central to the plan's vision was “optimizing the pattern of urbanization,” or encouraging further development of inland cities towns to relieve environmental pressure on China's eastern seaboard and strain on more populous coastal cities' public service infrastructure.¹³⁸ The New Type Urbanization Plan emphasized “large, medium, and small city development” and “small town development” in an attempt to increase the urban population in China's lower-tier cities and direct migration away from larger, economically vibrant metropolitan centers.¹³⁹ In addition to deflecting pressure on social services in large cities from migrant influx, “small town development” aimed to sell off housing oversupply in China's “ghost cities.”¹⁴⁰

The policy was criticized as unrealistic, as population influx alone is unlikely to create self-sustaining economic growth and employment opportunities for new residents of lower-tier cities.¹⁴¹ The intended outcome of shifting both economic activity and rural-urban migration inland has largely failed to materialize, as migrants remain drawn to China's most prosperous eastern seaboard cities.¹⁴² On the surface, the plan did achieve topline numerical goals of increasing the share of China's urban population from 53.7 percent in 2014 to 60 percent by 2020 and converting approximately 100 million migrants with rural hukou into urban residents.¹⁴³ Other pillars of the plan, however, remain incomplete, including extending the urban social safety net to new migrants and improving rural livelihoods for those who stayed behind. Notably, the 14th FYP marks a recalibration of urbanization policy. While it continues to emphasize developing lower-tier cities, the plan focuses on facilitating their integration with nearby cities, where the New Style Urbanization Plan explicitly sought to “guide the evacuation and transfer of [the urban] population ... from primary metropolitan areas and megacities to neighboring [areas] and other cities and towns.”¹⁴⁴

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¹ Gavin Bade, “U.S. Trade Deficit Hits Record in February,” *PoliticoPro*, April 7, 2021.

<https://subscriber.politicopro.com/article/2021/04/us-trade-deficit-hits-record-in-february-3988073>.

² U.S. Census Bureau, *Trade in Goods with China*, April 7, 2021. <https://www.census.gov/foreign-trade/balance/c5700.html>.

³ Stella Qiu and Gabriel Crossley, “China's Export Growth Beats Expectations on Resilient Global Demand,” *Reuters*, January 13, 2021.

<https://www.reuters.com/article/us-china-economy-trade/chinas-export-growth-beats-expectations-on-resilient-global-demand-idUSKBN29J094>.

⁴ Yihan Ma, “Annual Change in the Value of Monthly Exports in China from February 2018 to February 2021,” *Statista*, March 22, 2021.

<https://www.statista.com/statistics/271617/change-in-monthly-exports-from-china/#:~:text=In%20February%202021%2C%20the%20export,trade%20saw%20a%20swift%20recovery;Reuters,“China’s>

Factories, Consumers Drive Recovery into 2021,” March 14, 2021. <https://www.reuters.com/article/us-china-economy-activity/chinas-factories-consumers-drive-recovery-into-2021-idUSKBN2B7062>.

⁵ Tianlei Huang, “China's Migrant Workers Need Help in the Economic Downturn,” *Peterson Institute for International Economics*, March 14, 2020. <https://www.piie.com/blogs/china-economic-watch/chinas-migrant-workers-need-help-economic-downturn>.

- ⁶ Reuters, “China February Exports Post Record Surge from COVID-19-Depressed 2020 Levels,” March 6, 2021. <https://www.reuters.com/article/us-china-economy-trade/china-february-exports-post-record-surge-from-covid-19-depressed-2020-levels-idUSKBN2AZ02I>.
- ⁷ Investopedia, “Purchasing Managers’ Index (PMI),” March 27, 2020. [https://www.investopedia.com/terms/p/pmi.asp#:~:text=The%20Purchasing%20Managers%20Index%20\(PMI,both%20upstream%20and%20downstream%20activity](https://www.investopedia.com/terms/p/pmi.asp#:~:text=The%20Purchasing%20Managers%20Index%20(PMI,both%20upstream%20and%20downstream%20activity); Investing.com, “China Manufacturing Purchasing Managers Index (PMI),” March 31, 2020. <https://www.investing.com/economic-calendar/chinese-manufacturing-pmi-594>.
- ⁸ Keith Bradsher, Chris Buckley, and Vivian Wang, “A Confident China Promises Robust Growth and a Hard Line on Hong Kong,” *New York Times*, March 4, 2021. <https://www.nytimes.com/2021/03/04/world/asia/china-economy.html>.
- ⁹ Li Zhanshu, “Report on the Work of the Standing Committee of the National People’s Congress,” March 8, 2021, 2-12.
- ¹⁰ Oki Nagai, “China’s Xi Outlines Vision of ‘Great Modern Socialist Country,’” October 18, 2017. <https://asia.nikkei.com/Economy/China-s-Xi-outlines-vision-of-great-modern-socialist-country>.
- ¹¹ Stephen Silver, “China Is Making Big Plans to Compete against the United States,” *National Interest*, March 11, 2021. <https://nationalinterest.org/blog/buzz/china-making-big-plans-compete-against-united-states-179972>.
- ¹² Stephen Silver, “China Is Making Big Plans to Compete against the United States,” *National Interest*, March 11, 2021. <https://nationalinterest.org/blog/buzz/china-making-big-plans-compete-against-united-states-179972>.
- ¹³ Austin Ramzy and Tiffany May, “How China Plans to Control Hong Kong’s Elections,” *New York Times*, March 30, 2021. <https://www.nytimes.com/2021/03/30/world/asia/china-hong-kong-elections.html>; National People’s Congress of the People’s Republic of China, *Decision of the National People’s Congress on Improving the Electoral System of the Hong Kong Special Administrative Region* (全国人民代表大会关于完善香港特别行政区选举制度的决定), March 11, 2021. Translation. <http://www.npc.gov.cn/npc/kgfb/202103/e546427083c944d484fef5482c56f9fb.shtml>; BBC, “Hong Kong: China Approves ‘Patriotic’ Plan to Control Elections,” March 11, 2021. <https://www.bbc.com/news/world-asia-china-56356046>.
- ¹⁴ Xinhua, “(Two Sessions Authorized Release) The 14th Five-Year Plan for National Economic and Social Development and the Long-Range Objectives through 2035” ([两会授权发布] 中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm.
- ¹⁵ State Council of the People’s Republic of China, *The National Medium- and Long-Term Program for Science and Technology Development (2006–2020): An Outline*, 8.
- ¹⁶ State Council of the People’s Republic of China, *The National Medium- and Long-Term Program for Science and Technology Development (2006–2020): An Outline*, 8.
- ¹⁷ Xinhua, “(Two Sessions Authorized Release) The 14th Five-Year Plan for National Economic and Social Development and the Long-Range Objectives through 2035” ([两会授权发布] 中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm.
- ¹⁸ *People’s Daily*, “General Secretary of the CCP Xi Jinping Presides over Politburo Standing Committee Meeting (中共中央政治局常务委员会召开会议 中共中央总书记习近平主持会议),” May 15, 2020. Translation. <http://cpc.people.com.cn/n1/2020/0515/c64094-31709627.html>.
- ¹⁹ Karen Sutter and Michael D. Sutherland, “China’s 14th Five-Year Plan: A First Look,” *Congressional Research Service*, January 5, 2021. <https://crsreports.congress.gov/product/pdf/IF/IF11684>; Jude Blanchette and Andrew Polk, “Dual Circulation and China’s New Hedged Integration Strategy,” *Center for Strategic and International Studies*, August 24, 2020. <https://www.csis.org/analysis/dual-circulation-and-chinas-new-hedged-integration-strategy>.
- ²⁰ *Global Times*, “14th Five-Year Plan, Long-Term Devt Goals Top Agenda at This Year’s Two Sessions,” March 5, 2021.
- ²¹ Xinhua, “(Two Sessions Authorized Release) The 14th Five-Year Plan for National Economic and Social Development and the Long-Range Objectives through 2035” ([两会授权发布] 中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm.
- ²² Guo Yingzhe and Cheng Siwei, “China Isn’t Scrapping GDP Targets, Planner Says,” *Caixin*, March 9, 2021. <https://www.caixinglobal.com/2021-03-09/china-isnt-scrapping-gdp-targets-planner-says-101673190.html>.
- ²³ Xinhua, “(Two Sessions Authorized Release) The 14th Five-Year Plan for National Economic and Social Development and the Long-Range Objectives through 2035” ([两会授权发布] 中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm.
- ²⁴ Xinhua, “(Two Sessions Authorized Release) The 14th Five-Year Plan for National Economic and Social Development and the Long-Range Objectives through 2035” ([两会授权发布] 中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm.
- ²⁵ Xinhua, “(Two Sessions Authorized Release) The 14th Five-Year Plan for National Economic and Social Development and the Long-Range Objectives through 2035” ([两会授权发布] 中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm.
- ²⁶ Xinhua, “(Two Sessions Authorized Release) The 14th Five-Year Plan for National Economic and Social Development and the Long-Range Objectives through 2035” ([两会授权发布] 中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm.
- ²⁷ Scott Kennedy, “China’s New Legislative Agenda: Unpacking China’s ‘Two Meetings,’” *Center for Strategic and International Studies*, Washington, DC, March 22, 2021. <https://www.csis.org/events/chinas-new-legislative-agenda-unpacking-chinas-two-meetings>.

- ²⁸ *Xinhua*, “(Two Sessions Authorized Release) The 14th Five-Year Plan for National Economic and Social Development and the Long-Range Objectives through 2035” ([两会授权发布] 中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm.
- ²⁹ Scott Kennedy, “China’s New Legislative Agenda: Unpacking China’s ‘Two Meetings,’” *Center for Strategic and International Studies*, Washington, DC, March 22, 2021. <https://www.csis.org/events/chinas-new-legislative-agenda-unpacking-chinas-two-meetings>.
- ³⁰ *Economist*, “A Confident China Seeks to Insulate Itself from the World,” March 13, 2021. <https://www.economist.com/china/2021/03/11/a-confident-china-seeks-to-insulate-itself-from-the-world>.
- ³¹ *Xinhua*, “(Two Sessions Authorized Release) The 14th Five-Year Plan for National Economic and Social Development and the Long-Range Objectives through 2035” ([两会授权发布] 中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm.
- ³² *Trivium China Markets Dispatch*, “A Global Shopping Spree,” March 10, 2021.
- ³³ Muyu Xu and Chen Aizhu, “China’s Primary Energy Use to Peak in 2035 – CNPC Research,” *Reuters*, December 17, 2020. <https://www.reuters.com/article/us-china-energy-cnpc-forecast/chinas-primary-energy-use-to-peak-in-2035-cnpc-research-idUSKBN28R0SE>; Muyu Xu and Chen Aizhu, “China’s Primary Energy Use to Peak in 2035 – CNPC Research,” *Reuters*, December 17, 2020. <https://www.reuters.com/article/us-china-energy-cnpc-forecast/chinas-primary-energy-use-to-peak-in-2035-cnpc-research-idUSKBN28R0SE>.
- ³⁴ Economist Intelligence Unit, “Manufacturing Makes a Comeback in the 14th Five-Year Plan,” March 17, 2021. <https://onesite.eiu.com/manufacturing-makes-a-comeback-in-the-14th-five-year-plan/>; *Xinhua*, “(Two Sessions Authorized Release) The 14th Five-Year Plan for National Economic and Social Development and the Long-Range Objectives through 2035” ([两会授权发布] 中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm.
- ³⁵ *Xinhua*, “(Two Sessions Authorized Release) The 14th Five-Year Plan for National Economic and Social Development and the Long-Range Objectives through 2035” ([两会授权发布] 中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm.
- ³⁶ Economist Intelligence Unit, “Manufacturing Makes a Comeback in the 14th Five-Year Plan,” March 17, 2021. <https://onesite.eiu.com/manufacturing-makes-a-comeback-in-the-14th-five-year-plan/>.
- ³⁷ *Xinhua*, “(Two Sessions Authorized Release) The 14th Five-Year Plan for National Economic and Social Development and the Long-Range Objectives through 2035” ([两会授权发布] 中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm; Iris Deng and Xinmei Shen, “China’s ‘Two Sessions’ 2021: Plans for ‘Digital China’ Transformation Come with Increased Regulations for Personal Data,” *South China Morning Post*, March 6, 2021. <https://www.scmp.com/tech/big-tech/article/3124305/chinas-two-sessions-2021-plans-digital-china-transformation-come>.
- ³⁸ Graham Webster, “Xi Jinping: ‘Strive to Become the World’s Primary Center for Science and High Ground for Innovation,’” March 18, 2021. <https://digichina.stanford.edu/news/xi-jinping-strive-become-worlds-primary-center-science-and-high-ground-innovation>.
- ³⁹ Graham Webster, “Xi Jinping: ‘Strive to Become the World’s Primary Center for Science and High Ground for Innovation,’” March 18, 2021. <https://digichina.stanford.edu/news/xi-jinping-strive-become-worlds-primary-center-science-and-high-ground-innovation>.
- ⁴⁰ People’s Republic of China, *14th Five-Year Plan and Outline of 2035 Long-Term Goals*, March 12, 2021.
- ⁴¹ People’s Republic of China, *14th Five-Year Plan and Outline of 2035 Long-Term Goals*, March 12, 2021.
- ⁴² Graham Webster, “Xi Jinping: ‘Strive to Become the World’s Primary Center for Science and High Ground for Innovation,’” March 18, 2021. <https://digichina.stanford.edu/news/xi-jinping-strive-become-worlds-primary-center-science-and-high-ground-innovation>.
- ⁴³ Rogier Creemers et al., “Xi Jinping’s Sept. 2020 Speech on Science and Technology Development (Translation),” *New America*, September 11, 2020. <https://www.newamerica.org/cybersecurity-initiative/digichina/blog/translation-xi-jinpings-sept-2020-speech-science-and-technology/>.
- ⁴⁴ Rogier Creemers et al., “Xi Jinping’s Sept. 2020 Speech on Science and Technology Development (Translation),” *New America*, September 11, 2020. <https://www.newamerica.org/cybersecurity-initiative/digichina/blog/translation-xi-jinpings-sept-2020-speech-science-and-technology/>.
- ⁴⁵ People’s Republic of China, “13th Five-Year Plan for Economic and Social Development of the People’s Republic of China (2016–2020),” *Central Compilation & Translation Press*, December 2016. https://en.ndrc.gov.cn/newsrelease_8232/201612/P020191101481868235378.pdf.
- ⁴⁶ Stephen Ezell, “Moore’s Law under Attack: The Impact of China’s Policies on Global Semiconductor Innovation,” *Information Technology Innovation Foundation*, February 18, 2021. <https://itif.org/publications/2021/02/18/moores-law-under-attack-impact-chinas-policies-global-semiconductor#:~:text=China's%20National%20IC%20Plan%20calls,the%20semiconductor%20industry%20by%202030>.
- ⁴⁷ Patrick Seitz, “U.S.-China Trade War Hobbles China’s Semiconductor Industry Ambitions and Rattles Stocks,” *Investor’s Business Daily*, October 16, 2020. <https://www.investors.com/news/technology/us-china-trade-war-hobbles-china-semiconductor-industry-ambitions-rattles-semiconductor-stocks/>; Christopher Thomas, “A New World under Construction: China and Semiconductors,” *McKinsey & Company*, November 1, 2015. <https://www.mckinsey.com/featured-insights/asia-pacific/a-new-world-under-construction-china-and-semiconductors>.
- ⁴⁸ Stephen Ezell, “Moore’s Law under Attack: The Impact of China’s Policies on Global Semiconductor Innovation,” *Information Technology Innovation Foundation*, February 18, 2021. <https://itif.org/publications/2021/02/18/moores-law-under-attack-impact-chinas->

- policies-global-semiconductor#:~:text=China's%20National%20IC%20Plan%20calls,the%20semiconductor%20industry%20by%202030.
- 49 Yoko Kubota, “China Sets Up New \$29 Billion Semiconductor Fund,” *Wall Street Journal*, October 25, 2019, <https://www.wsj.com/articles/china-sets-up-new-29-billion-semiconductor-fund-11572034480>.
 - 50 Jane Zhang and Che Pan, “China,” *South China Morning Post*, August 5, 2020. <https://www.scmp.com/tech/policy/article/3096131/china-unveils-major-tax-incentive-policy-encourage-innovation-domestic>.
 - 51 *AP News*, “China Cuts Taxes to Spur Semiconductor Development,” March 29, 2021. <https://apnews.com/article/business-beijing-global-trade-smartphones-china-dd813f4d2ede01f8db6f9d9c13d7d47b>.
 - 52 Scott Kennedy, “China’s Planners Succeed, but What about China?” *Center for Strategic and International Studies*, November 11, 2021. <https://www.csis.org/blogs/trustee-china-hand/chinas-planners-succeed-what-about-china>.
 - 53 Zichen Wang, “Select Translations of the 14th FYP (2021-2025) and Objectives through 2035 - Part I,” *Pekingnology*, March 6, 2021. <https://pekingnology.substack.com/p/select-translations-of-the-14th-fyp>.
 - 54 Jiang Hui, “The ‘Dual Circulation’ Is Necessary Part of China’s New Development Paradigm,” *Beijing Review*, February 22, 2021. http://www.bjreview.com/Business/202102/t20210222_800236618.html.
 - 55 Anthony Marchese and Freda Zhang, “What to Expect from China’s ‘Dual Circulation’ Strategy,” *APCO Worldwide*, November 11, 2020. <https://apcoworldwide.com/blog/what-to-expect-from-chinas-dual-circulation-strategy/>.
 - 56 Arjun Kharpal, “Power Is ‘Up for Grabs:’ Behind China’s Plan to Shape the Future of Next-Generation Tech,” *CNBC*, April 27, 2020. <https://www.cnbc.com/2020/04/27/china-standards-2025-explained.html>.
 - 57 Chris Buckley, “The Rock Standing in the Way of China’s Climate Ambitions: Coal,” *New York Times*, March 16, 2021. <https://www.nytimes.com/2021/03/16/world/asia/china-coal-politics.html>.
 - 58 Dominic Chiu, “The East Is Green: China’s Global Leadership in Renewable Energy,” *Center for Strategic and International Studies*, October 6, 2017. <https://www.csis.org/analysis/new-perspectives-foreign-policy-issue-13-summer-2017>.
 - 59 Zichen Wang, “Beijing’s Pivotal Commitment to Carbon Peak & Carbon Neutrality,” *Pekingnology*, March 29, 2021. <https://pekingnology.substack.com/p/beijings-pivotal-commitment-to-carbon>.
 - 60 Lila Buckley, “Engaging with China’s Ecological Civilization,” *Green Economy Coalition*, February 26, 2021. <https://www.greeneconomycoalition.org/news-and-resources/engaging-with-chinas-ecological-civilisation>; Heidi Wang-Kaeding, “What Does Xi Jinping’s New Phrase ‘Ecological Civilization’ Mean?” *Diplomat*, March 6, 2018. <https://thediplomat.com/2018/03/what-does-xi-jinpings-new-phrase-ecological-civilization-mean/>.
 - 61 Lila Buckley, “Engaging with China’s Ecological Civilization,” *Green Economy Coalition*, February 26, 2021. <https://www.greeneconomycoalition.org/news-and-resources/engaging-with-chinas-ecological-civilisation>.
 - 62 Mikhail Grant, Hannah Pitt, and Kate Larsen, “Preliminary 2020 Greenhouse Gas Emissions Estimates for China,” *Rhodium Group*, March 4, 2021. <https://rhg.com/research/preliminary-2020-greenhouse-gas-emissions-estimates-for-china/>; International Energy Agency, “Global Energy Review: CO2 Emissions in 2020,” March 2, 2021. <https://www.iea.org/articles/global-energy-review-co2-emissions-in-2020>.
 - 63 Asia Society Policy Institute and Climate Analytics, “U.S. and China Climate Goals: Scenarios for 2030 and Mid-Century,” November 2020. <https://asiasociety.org/policy-institute/us-and-china-climate-goals-scenarios-2030-and-mid-century>.
 - 64 Hongqiao Liu, Jianqiang Liu, and Xiaoying You, “Q&A: What Does China’s 14th ‘Five Year Plan’ Mean for Climate Change,” *CarbonBrief*, March 12, 2021. <https://www.carbonbrief.org/qa-what-does-chinas-14th-five-year-plan-mean-for-climate-change>; *Xinhua*, “(Two Sessions Authorized Release) The 14th Five-Year Plan for National Economic and Social Development and the Long-Range Objectives through 2035” ([两会受权发布] 中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm.
 - 65 *Xinhua*, “Full Text: Remarks by Chinese President Xi Jinping at Leaders Summit on Climate,” April 22, 2021. http://www.xinhuanet.com/english/2021-04/22/c_139899289.htm.
 - 66 Echo Xie, “Global Climate Summit: Xi Jinping Clears the Air on China’s Peak Coal-Power Growth,” *South China Morning Post*, April 23, 2021. <https://www.scmp.com/news/china/politics/article/3130839/president-xi-jinping-singles-out-coal-and-clears-air-chinas>.
 - 67 Mark Magnier, “Global Climate Summit: US Sets Emissions Target for 2030; China Offers No New Commitments,” *South China Morning Post*, April 22, 2021. <https://www.scmp.com/news/china/diplomacy/article/3130698/global-climate-summit-xi-jinping-and-joe-biden-united-drive>; *Xinhua*, “Full Text: Remarks by Chinese President Xi Jinping at Leaders Summit on Climate,” April 22, 2021. http://www.xinhuanet.com/english/2021-04/22/c_139899289.htm.
 - 68 Hongqiao Liu, Jianqiang Liu, and Xiaoying You, “Q&A: What Does China’s 14th ‘Five Year Plan’ Mean for Climate Change,” *CarbonBrief*, March 12, 2021. <https://www.carbonbrief.org/qa-what-does-chinas-14th-five-year-plan-mean-for-climate-change>.
 - 69 Hongqiao Liu, Jianqiang Liu, and Xiaoying You, “Q&A: What Does China’s 14th ‘Five Year Plan’ Mean for Climate Change,” *CarbonBrief*, March 12, 2021. <https://www.carbonbrief.org/qa-what-does-chinas-14th-five-year-plan-mean-for-climate-change>.
 - 70 Shi Yi, “The 14th Five Year Plan Sends Mixed Message about China’s Near-Term Climate Trajectory,” *China Dialogue*, March 8, 2021. <https://chinadialogue.net/en/energy/the-14th-five-year-plan-sends-mixed-message-about-chinas-near-term-climate-trajectory/>.
 - 71 *Bloomberg Green*, “This Is How Top Polluter China Plans to Be Greener by 2025,” March 4, 2021. <https://www.bloomberg.com/news/articles/2021-03-05/this-is-how-top-polluter-china-plans-to-be-greener-by-2025?sref=mxblZfB4>.
 - 72 Michael Meidan, Philip Andrews-Speed, and Yan Qin, “Key Issues for China’s 14th Five Year Plan,” *Oxford Energy Comment*, March 2021. <https://www.oxfordenergy.org/wp-content/uploads/2021/03/Key-issues-for-Chinas-14th-Five-Year-Plan.pdf>.
 - 73 Shi Yi, “The 14th Five Year Plan Sends Mixed Message about China’s Near-Term Climate Trajectory,” *China Dialogue*, March 8, 2021. <https://chinadialogue.net/en/energy/the-14th-five-year-plan-sends-mixed-message-about-chinas-near-term-climate-trajectory/>.

- ⁷⁴ Jiang Yifan, “14th Five Year Plan: China’s Carbon-Centered Environmental Blueprint,” *China Dialogue*, March 25, 2021. <https://chinadialogue.net/en/climate/14th-five-year-plan-china-carbon-centred-environmental-blueprint/>.
- ⁷⁵ Lili Pike, “Japan and South Korea Have Started to Ditch Global Coal Projects. Will China Follow Suit?” *Vox*, December 10, 2020. <https://www.vox.com/22151710/china-japan-south-korea-climate-change-coal-finance>.
- ⁷⁶ Shi Yi, “AIIB’s New No-Coal Pledge Puts Spotlight on China’s Overseas Energy Investment,” *China Dialogue*, November 18, 2020. <https://chinadialogue.net/en/business/aiibs-new-no-coal-pledge-china-overseas-energy-investment/>.
- ⁷⁷ Shi Yi, “AIIB’s New No-Coal Pledge Puts Spotlight on China’s Overseas Energy Investment,” *China Dialogue*, November 18, 2020. <https://chinadialogue.net/en/business/aiibs-new-no-coal-pledge-china-overseas-energy-investment/>; Junda Jin, Xinyue Ma, and Kevin Gallagher, “China’s Global Development Finance: A Guidance Note for Global Development Policy Center Databases,” *Boston University Global Development Policy Center*, July 2018. <https://www.bu.edu/gdp/files/2018/07/Coding-Manual-.pdf>; Jevans Nyabiage, “Chinese Lenders Turn Off the Taps on International Energy Projects as ‘Debt Trap Diplomacy’ Criticisms Mount,” *South China Morning Post*, February 20, 2020. <https://www.scmp.com/news/china/diplomacy/article/3051466/chinese-lenders-turn-taps-international-energy-projects-debt>.
- ⁷⁸ Shi Yi, “AIIB’s New No-Coal Pledge Puts Spotlight on China’s Overseas Energy Investment,” *China Dialogue*, November 18, 2020. <https://chinadialogue.net/en/business/aiibs-new-no-coal-pledge-china-overseas-energy-investment/>.
- ⁷⁹ Michael Meidan, Philip Andrews-Speed, and Yan Qin, “Key Issues for China’s 14th Five Year Plan,” *Oxford Energy Comment*, March 2021. <https://www.oxfordenergy.org/wpcms/wp-content/uploads/2021/03/Key-issues-for-Chinas-14th-Five-Year-Plan.pdf>.
- ⁸⁰ Asia Society Policy Institute and Climate Analytics, “U.S. and China Climate Goals: Scenarios for 2030 and Mid-Century,” November 2020. <https://asiasociety.org/policy-institute/us-and-china-climate-goals-scenarios-2030-and-mid-century>; James Browning et al., “Pipeline Bubble 2021: Tracking Global Oil and Gas Pipelines,” *Global Energy Monitor*, February 2021. <https://globalenergymonitor.org/wp-content/uploads/2021/02/Pipeline-Bubble-2021.pdf>.
- ⁸¹ James Browning et al., “Pipeline Bubble 2021: Tracking Global Oil and Gas Pipelines,” *Global Energy Monitor*, February 2021. <https://globalenergymonitor.org/wp-content/uploads/2021/02/Pipeline-Bubble-2021.pdf>.
- ⁸² Asia Society Policy Institute and Climate Analytics, “U.S. and China Climate Goals: Scenarios for 2030 and Mid-Century,” November 2020. <https://asiasociety.org/policy-institute/us-and-china-climate-goals-scenarios-2030-and-mid-century>.
- ⁸³ Michael Meidan, Philip Andrews-Speed, and Yan Qin, “Key Issues for China’s 14th Five Year Plan,” *Oxford Energy Comment*, March 2021. <https://www.oxfordenergy.org/wpcms/wp-content/uploads/2021/03/Key-issues-for-Chinas-14th-Five-Year-Plan.pdf>; Zichen Wang, “Beijing’s Pivotal Commitment to Carbon Peak & Carbon Neutrality,” *Pekingology*, March 29, 2021. <https://pekingology.substack.com/p/beijings-pivotal-commitment-to-carbon>; Muyu Xu and David Stanway, “China Plans to Raise Minimum Renewable Power Purchase to 40% by 2030: Government Document,” *Reuters*, February 9, 2021. <https://www.reuters.com/article/us-china-climatechange-renewables/china-plans-to-raise-minimum-renewable-power-purchase-to-40-by-2030-government-document-idUSKBN2AA0BA>.
- ⁸⁴ Asia Society Policy Institute and Climate Analytics, “U.S. and China Climate Goals: Scenarios for 2030 and Mid-Century,” November 2020. <https://asiasociety.org/policy-institute/us-and-china-climate-goals-scenarios-2030-and-mid-century>.
- ⁸⁵ *Xinhua*, “Full Text: Remarks by Chinese President Xi Jinping at Leaders Summit on Climate,” April 22, 2021. http://www.xinhuanet.com/english/2021-04/22/c_139899289.htm.
- ⁸⁶ Echo Xie, “Global Climate Summit: Xi Jinping Clears the Air on China’s Peak Coal-Power Growth,” *South China Morning Post*, April 23, 2021. <https://www.scmp.com/news/china/politics/article/3130839/president-xi-jinping-singles-out-coal-and-clears-air-chinas>.
- ⁸⁷ Michael Meidan, Philip Andrews-Speed, and Yan Qin, “Key Issues for China’s 14th Five Year Plan,” *Oxford Energy Comment*, March 2021. <https://www.oxfordenergy.org/wpcms/wp-content/uploads/2021/03/Key-issues-for-Chinas-14th-Five-Year-Plan.pdf>.
- ⁸⁸ Lauri Myllyvirta, “China’s Five-Year Plan: Baby Steps towards Carbon Neutrality,” *Center for Research on Energy and Clean Air*, March 5, 2021. <https://energyandcleanair.org/china-14th-five-year-plan-carbon-neutrality/>; Lili Pike, “China Aims to Be Carbon Neutral by 2060. Its New 5-Year Plan Won’t Cut It,” *Vox*, March 5, 2021. <https://www.vox.com/22313871/china-energy-climate-change-five-year-plan-wind-solar-coal-oil-gas>; Hongqiao Liu, Jianqiang Liu, and Xiaoying You, “Q&A: What Does China’s 14th ‘Five Year Plan’ Mean for Climate Change?” *Carbon Brief*, March 12, 2021. <https://www.carbonbrief.org/qa-what-does-chinas-14th-five-year-plan-mean-for-climate-change>.
- ⁸⁹ Lauri Myllyvirta, “China’s Five-Year Plan: Baby Steps towards Carbon Neutrality,” *Center for Research on Energy and Clean Air*, March 5, 2021. <https://energyandcleanair.org/china-14th-five-year-plan-carbon-neutrality/>; International Energy Agency, “Nuclear Power,” June 2020. <https://www.iea.org/reports/nuclear-power>.
- ⁹⁰ Rachel Zhang, “China Sets Up Nuclear Safety Committee to Boost 2060 Carbon Neutral Efforts,” *South China Morning Post*, March 25, 2021. <https://www.scmp.com/news/china/politics/article/3126984/china-sets-nuclear-safety-committee-boost-2060-carbon-neutral>.
- ⁹¹ David Stringer and Ann Koh, “China Gives Nuclear Power a Fresh Push in Drive to Go Green,” *Bloomberg Green*, March 5, 2021. <https://www.bloomberg.com/news/articles/2021-03-05/china-gives-nuclear-power-a-fresh-push-in-the-drive-to-go-green?sref=mxblZFb4>.
- ⁹² *Bloomberg*, “The Solar-Powered Future Is Being Assembled in China,” September 14, 2020. <https://www.bloomberg.com/features/2020-china-solar-giant-longi/?sref=mxblZFb4>.
- ⁹³ Eric Ng and Yujie Xue, “China Best Placed to Profit from the World’s Move toward a Lower Carbon Future, Says HSBC Report,” *South China Morning Post*, March 31, 2021. <https://www.scmp.com/business/companies/article/3127819/china-best-placed-profit-worlds-move-towards-lower-carbon-future>.
- ⁹⁴ Muyu Xu and Tom Daly, “China Lifts Renewable Power Subsidy for 2021 by Nearly 5 Percent Y/Y,” *Reuters*, November 20, 2020. <https://www.reuters.com/article/china-renewables-subsidy/update-2-china-lifts-renewable-power-subsidy-for-2021-by-nearly-5-y-y-idUKL1N2I60PC>.

- ⁹⁵ Loren Brandt, written testimony for the U.S.-China Economic and Security Review Commission, Hearing on *An Assessment of the CCP's Economic Ambitions, Plans, and Metrics of Success*, April 15, 2021, 14. https://www.uscc.gov/sites/default/files/2021-04/Loren_Brandt_Testimony.pdf; Michael Pettis, *Avoiding the Fall: China's Economic Restructuring*, Carnegie Endowment for International Peace, 2013, 8.
- ⁹⁶ Center for Strategic and International Studies, "Does China Have an Aging Problem?" *China Power*, March 19, 2020. <https://chinapower.csis.org/aging-problem/>; Stuart Anderson, "China's Population to Drop by Half, Immigration Helps U.S. Labor Force," *Forbes*, September 3, 2020. <https://www.forbes.com/sites/stuartanderson/2020/09/03/chinas-population-to-drop-by-half-immigration-helps-us-labor-force/?sh=468f5bbd3d65>.
- ⁹⁷ Tao Feng and Liu Hanlin, "NDRC: Relax Restrictions on Settlement in Cities Except for a Few Megacities" 发改委：放开放宽除个别超大城市外的城市落户限制, *Beijing Business Today*, March 8, 2021. Translation. <http://webcache.googleusercontent.com/search?q=cache:10vQiOi-8iEJ:m.bbtnews.com.cn/content/79/c9/223927.html>.
- ⁹⁸ Yin-wah Chu, "China's New Urbanization Plan: Progress and Structural Constraints," *Cities* 103 (August 2020): 6–8. <https://www.sciencedirect.com/science/article/pii/S0264275119307413>.
- ⁹⁹ Yin-wah Chu, "China's New Urbanization Plan: Progress and Structural Constraints," *Cities* 103 (August 2020): 6–8. <https://www.sciencedirect.com/science/article/pii/S0264275119307413>.
- ¹⁰⁰ State Council of the People's Republic of China, *The Fourteenth Five-Year Plan for National Economic and Social Development of the People's Republic of China and the Outline of Long-Term Goals for 2035* (中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm.
- ¹⁰¹ BBC, "China's Xi Declares Victory in Ending Extreme Poverty," February 25, 2021. <https://www.bbc.com/news/world-asia-china-56194622>.
- ¹⁰² State Council of the People's Republic of China, *The Fourteenth Five-Year Plan for National Economic and Social Development of the People's Republic of China and the Outline of Long-Term Goals for 2035* (中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm.
- ¹⁰³ Yang Lixiong, "The Social Assistance Reform in China: Towards a Fair and Inclusive Social Safety Net," *United Nations*, June 2018. <https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2018/06/The-Social-Assistance-Reform-in-China.pdf>; State Council of the People's Republic of China, *The Fourteenth Five-Year Plan for National Economic and Social Development of the People's Republic of China and the Outline of Long-Term Goals for 2035* (中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm.
- ¹⁰⁴ Trivium China, "Intractable Policy Problems," *Tipsheet*, March 12, 2021. <https://triviumchina.com/2021/03/12/intractable-policy-problems/>; He Yafu, "'Family Planning' Fades Out, What Are the Major Adjustments to the 14th Five Year Plan's Population Policy" ("计划生育" 淡出, "十四五" 人口政策将有哪些重大调整), *Xinjing Bao*, 2020. Translation. <https://baijiahao.baidu.com/s?id=1682396817321544807&wfr=spider&for=pc>; State Council of the People's Republic of China, *The Fourteenth Five-Year Plan for National Economic and Social Development of the People's Republic of China and the Outline of Long-Term Goals for 2035* (中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm.
- ¹⁰⁵ Cissy Zhou, "China's Plan to Raise Retirement Age Will Be Gradual Process, Government Researcher Insists," *South China Morning Post*, March 14, 2021. <https://www.scmp.com/economy/china-economy/article/3125403/chinas-plan-raise-retirement-age-will-be-gradual-process>.
- ¹⁰⁶ He Huifeng, "China Population: Plan to Lift Retirement Age Stokes Workers' Anxiety as Demographic Crisis Looms," *South China Morning Post*, March 30, 2021. <https://www.scmp.com/economy/china-economy/article/3127524/china-population-plan-lift-retirement-age-stokes-workers>.
- ¹⁰⁷ Liu Chang, "'14th Five-Year Plan' Outline: Advance Real Estate Tax Legislation, Gradually Equalize Housing Rental and Purchase Rights" "十四五" 规划纲要：推进房地产税立法，逐步使租购住房同权, *The Paper*, March 13, 2021. Translation. https://webcache.googleusercontent.com/search?q=cache:EjpcmbJiwtsJ:https://www.thepaper.cn/newsDetail_forward_11693102; State Council of the People's Republic of China, *The Fourteenth Five-Year Plan for National Economic and Social Development of the People's Republic of China and the Outline of Long-Term Goals for 2035* (中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm.
- ¹⁰⁸ Lusha Zhang and Ryan Woo, "China Omits Property Tax from 2021 Legislative Agenda," *Reuters*, March 8, 2021. <https://www.reuters.com/article/us-china-property-tax/china-omits-property-tax-from-2021-legislative-agenda-idUSKBN2B01GD>; Joyce Yanyun Man, "China's Property Tax Reform: Progress and Challenges," *Lincoln Institute of Land Policy*, April 2012. <https://www.lincolnst.edu/publications/articles/chinas-property-tax-reform>.
- ¹⁰⁹ Lusha Zhang and Ryan Woo, "China Omits Property Tax from 2021 Legislative Agenda," *Reuters*, March 8, 2021. <https://www.reuters.com/article/us-china-property-tax/china-omits-property-tax-from-2021-legislative-agenda-idUSKBN2B01GD>; Abigail Ng, "Right Now Is a 'Really Hard Time' for China to Introduce a Property Tax," *CNBC*, March 23, 2019. <https://www.cnb.com/2019/03/23/property-taxes-would-have-a-huge-impact-on-chinas-economy-ceo.html>; Meg Rithmire, "Land Institutions and Chinese Political Economy: Institutional Complementarities and Macroeconomic Management," *Politics & Society* 45:1 (2017): 123–153, 129, 144. https://www.hbs.edu/ris/Publication%20Files/PoliticsSociety2017_69188ed6-01c7-481e-90a5-24d705acb8e5.pdf; Wen Wang and Fangzhi Ye, "The Political Economy of Land Finance in China," *Public Budgeting & Finance* 36:2 (2016): 91–110, 92–93, 95–97. https://alliance-primo.hosted.exlibrisgroup.com/permalink/f/lvbs/TN_cdi_gale_infotracacademiconefile_A454072908.

- ¹¹⁰ Changchun Fang and Joyce Iceland, “Housing Inequality in Urban China: The Heritage of Socialist Institutional Arrangements,” *Journal of Chinese Sociology* 5 (2018). <https://journalofchinesesociology.springeropen.com/articles/10.1186/s40711-018-0082-9>.
- ¹¹¹ Qiujie Zheng et al., “Chinese Farmers’ Preference for Rural Homestead Land Use: Mechanism, Knowledge, and Perception,” 2020 *Agricultural and Applied Economics Association Virtual Meeting*, August 2020, 2–4; Changchun Fang and Joyce Iceland, “Housing Inequality in Urban China: The Heritage of Socialist Institutional Arrangements,” *Journal of Chinese Sociology* 5 (2018). <https://journalofchinesesociology.springeropen.com/articles/10.1186/s40711-018-0082-9>.
- ¹¹² Gabriel Arellano, “2014 New Urbanization Plan: What Progress Has Been Made in Chinese Cities towards Implementing Hukou Reforms?” *California State University at Bakersfield*, 2019, 10, 21. https://csu-dspace.calstate.edu/bitstream/handle/10211.3/210056/ArrellanoG_PPA_sp2019.pdf?sequence=1.
- ¹¹³ Martin Chorzempa and Tianlei Huang, “China Will Run Out of Growth if It Doesn’t Fix Its Rural Crisis,” *Foreign Policy*, February 8, 2021. <https://foreignpolicy.com/2021/02/08/china-rural-crisis-economy-growth-middle-income-trap/>; Frank Tang, “China’s Uneven Coronavirus Economic Recovery Stirs Protest in Beijing,” *South China Morning Post*, October 19, 2020. <https://www.scmp.com/economy/global-economy/article/3106142/chinas-uneven-coronavirus-economic-recovery-stirs-protest>.
- ¹¹⁴ Meg Rithmire, “Land Institutions and Chinese Political Economy: Institutional Complementarities and Macroeconomic Management,” *Politics & Society* 45:1 (2017), 123–153, 135, 142. https://www.hbs.edu/ris/Publication%20Files/PoliticsSociety2017_69188ed6-01c7-481e-90a5-24d705acb8e5.pdf; Wen Wang and Fangzhi Ye, “The Political Economy of Land Finance in China,” *Public Budgeting & Finance* 36:2 (2016), 91–110, 91–93. https://alliance-primo.hosted.exlibrisgroup.com/permalink/f/vbsh/TN_cdi_gale_infotracacademiconefile_A454072908.
- ¹¹⁵ Meg Rithmire, “Land Institutions and Chinese Political Economy: Institutional Complementarities and Macroeconomic Management,” *Politics & Society* 45:1 (2017), 123–153, 135, 142. https://www.hbs.edu/ris/Publication%20Files/PoliticsSociety2017_69188ed6-01c7-481e-90a5-24d705acb8e5.pdf.
- ¹¹⁶ State Council of the People’s Republic of China, *The Fourteenth Five-Year Plan for National Economic and Social Development of the People’s Republic of China and the Outline of Long-Term Goals for 2035* (中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm.
- ¹¹⁷ Huang Xiaofang, “Land Expropriation and Development Have New Regulations, Farmers’ Rights and Interests to Be Better Protected” 土地征收成片开发有新规 农民权益将获得更多保护, *Economic Daily*, November 10, 2020. Translation. http://webcache.googleusercontent.com/search?q=cache:biW9ITGoqEAJ:www.gov.cn/xinwen/2020-11/10/content_5560113.htm.
- ¹¹⁸ Qiujie Zheng et al., “Chinese Farmers’ Preference for Rural Homestead Land Use: Mechanism, Knowledge, and Perception,” 2020 *Agricultural and Applied Economics Association Virtual Meeting*, August 2020, 2–4, 11; Xiaobin Jin et al., “The Evaluation of Land Consolidation Policy in Improving Agricultural Productivity in China,” *Scientific Reports* 7 (June 5, 2017). <https://www.nature.com/articles/s41598-017-03026-y>; Dominique Patton, “Machinery Makers Smell Opportunity as China’s Farms Think Big,” *Reuters*, October 1, 2015. <https://www.reuters.com/article/us-china-agriculture-machinery/machinery-makers-smell-opportunity-as-chinas-farms-think-big-idUSKCN0RV5QJ20151001>.
- ¹¹⁹ Liu Chang, “‘14th Five-Year Plan’ Outline: Advance Real Estate Tax Legislation, Gradually Equalize Housing Rental and Purchase Rights” “十四五” 规划纲要: 推进房地产税法立法, 逐步使租购住房同权, *The Paper*, March 13, 2021. Translation. https://webcache.googleusercontent.com/search?q=cache:EjpcmbJiwtJ:https://www.thepaper.cn/newsDetail_forward_11693102.
- ¹²⁰ Dermot Hayes, Minghao Li, and Wendong Zhang, “Can China’s Rural Land Policy Reforms Solve Its Farmland Dilemma?” *Agricultural Policy Review* (Winter 2018). www.card.iastate.edu/ag_policy_review/article/?a=78; Laney Zhang, “China: Real Property Law,” *U.S. Library of Congress*, March 2015, 2–3. <https://www.loc.gov/law/help/real-property-law/china-real-property-law.pdf>; State Council of the People’s Republic of China, *Provisional Regulations of the People’s Republic of China on Assigning and Transferring the Urban State-Owned Land Use Rights* 中华人民共和国城镇国有土地使用权出让和转让暂行条例, May 19, 1990. Translation. http://webcache.googleusercontent.com/search?q=cache:ItpIgHFBSfYJ:www.gov.cn/zhengce/2020-12/25/content_5574204.htm.
- ¹²¹ Chao Zhou, Yunjuan Liang, and Anthony Fuller, “Tracing Agricultural Land Transfer in China: Some Legal and Policy Issues,” *Land* 10:58 (2021), 12–13. <https://doi.org/10.3390/land10010058>.
- ¹²² Sha Jianlong, “Shandong Become China’s First Province with a Total Agricultural Output Value Exceeding 1 Trillion Yuan” 山东成为中国首个农业总产值破万亿元省份, *China News Network*, January 21, 2021. Translation. http://www.xinhuanet.com/food/2021-01/21/c_1127007778.htm; Pan Linqing and Ye Jing, “Large Grain Growers ‘Broke Contracts and Abandoned Farming’ at the Beginning of the Year, Some Lost 16 Million in Two Years” 种粮大户 “毁约弃耕” 初现 有人两年亏 1600 万, *Outlook Weekly*, February 20, 2017. Translation. http://www.xinhuanet.com/politics/2017-02/20/c_1120494289.htm.
- ¹²³ Philippe Wingender, “Intergovernmental Fiscal Reform in China,” *International Monetary Fund Working Paper* 18/88 (April 2018): 4–7; Joyce Yanyun Man, “China’s Property Tax Reform: Progress and Challenges,” *Lincoln Institute of Land Policy*, April 2012. <https://www.lincolinst.edu/publications/articles/chinas-property-tax-reform>.
- ¹²⁴ Joyce Yanyun Man, “China’s Property Tax Reform: Progress and Challenges,” *Lincoln Institute of Land Policy*, April 2012. <https://www.lincolinst.edu/publications/articles/chinas-property-tax-reform>.
- ¹²⁵ Lusha Zhang and Ryan Woo, “China Omits Property Tax from 2021 Legislative Agenda,” *Reuters*, March 8, 2021. <https://www.reuters.com/article/us-china-property-tax/china-omits-property-tax-from-2021-legislative-agenda-idUSKBN2B01GD>; Abigail Ng, “Right Now Is a ‘Really Hard Time’ for China to Introduce a Property Tax,” *CNBC*, March 23, 2019. <https://www.cnb.com/2019/03/23/property-taxes-would-have-a-huge-impact-on-chinas-economy-ceo.html>.
- ¹²⁶ Wu and Matthew Mui, “The Third Plenum Decision’s Blueprint for Fiscal and Tax Reform,” *PricewaterhouseCoopers*, April 24, 2014, 18. <https://www.uschina.org/sites/default/files/PwC%20Third%20Plenum%20Tax%20and%20Fiscal%20Reforms%204.28.pdf>; Zheng Yangpeng and Karen Yeung, “China Sounds a Clarion Call for a Property Tax, Causing Real Estate Stocks to Slump, Even if the Legal

- Basis for the Tax Is Years Away,” *South China Morning Post*, March 11, 2019. <https://www.scmp.com/property/hong-kong-china/article/2189497/china-sounds-clarion-call-property-tax-causing-real-estate>; Liyan Qi, “China Not Planning to Expand Pilot Property-Tax Program,” *Wall Street Journal*, March 19, 2014. <https://www.wsj.com/articles/SB10001424052702303802104579448513811488016>.
- ¹²⁷ Lusha Zhang and Ryan Woo, “China Omits Property Tax from 2021 Legislative Agenda,” *Reuters*, March 8, 2021. <https://www.reuters.com/article/us-china-property-tax/china-omits-property-tax-from-2021-legislative-agenda-idUSKBN2B01GD>.
- ¹²⁸ State Council of the People’s Republic of China, *The Fourteenth Five-Year Plan for National Economic and Social Development of the People’s Republic of China and the Outline of Long-Term Goals for 2035* (中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm.
- ¹²⁹ Zheng Zhiwei, “Start ‘14th Five-Year Plan’ Urbanization | Fuse Urban and Rural Areas, Build New Towns Centered on People” (启程“十四五”·城镇化 | 融城乡, 建以人为核心新城镇), *MS Weekly*, March 16, 2021. Translation. <https://www.163.com/dy/article/G57HCR5L051282UI.html>.
- ¹³⁰ Wang Qing, “Golden Credit Ratings’ Wang Qing: Dual Circulation Is the Common Thread Running through the 14th Five-Year Plan” (东方金诚王青: 双循环是贯穿“十四五”规划的一条主线), *Sina Finance*, March 24, 2021. Translation. <http://finance.sina.com.cn/zl/china/2021-03-24/zl-ikkncsk0537574.shtml>.
- ¹³¹ State Council of the People’s Republic of China, *The Fourteenth Five-Year Plan for National Economic and Social Development of the People’s Republic of China and the Outline of Long-Term Goals for 2035* (中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm; Nicolas Douay and Wei Qi, “China’s Spatial Planning during the Transition: Towards a More Integrated Model,” *Achieving Territory Becomes Matter of State Importance: Essentials for Coordination of Spatial Planning Policies* (Tirant Humanidades, 2018), 731–758, 743–745. https://www.researchgate.net/publication/326785691_China's_spatial_planning_during_the_transition_towards_a_more_integrated_model.
- ¹³² Dorcas Wong, “How Can Foreign Technology Investors Benefit from China’s New Infrastructure Plan?” *China Briefing*, August 7, 2020. <https://www.china-briefing.com/news/how-foreign-technology-investors-benefit-from-chinas-new-infrastructure-plan/>.
- ¹³³ Han Wei, “A Full-Blown 5G Era Won’t Arrive Quickly,” *Caixin*, December 20, 2018. <https://www.caixinglobal.com/2018-12-20/a-full-blown-5g-era-wont-arrive-quick-101361221.html>.
- ¹³⁴ Alibaba Cloud, “City Brain Now in 23 Cities in Asia,” October 28, 2019. https://www.alibabacloud.com/blog/city-brain-now-in-23-cities-in-asia_595479.
- ¹³⁵ Katherine Atha et al., “China’s Smart Cities Development,” (prepared for the U.S.-China Economic and Security Review Commission), January, 2020. https://www.uscc.gov/sites/default/files/China_Smart_Cities_Development.pdf.
- ¹³⁶ State Council of the People’s Republic of China, *The Fourteenth Five-Year Plan for National Economic and Social Development of the People’s Republic of China and the Outline of Long-Term Goals for 2035* (中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm.
- ¹³⁷ State Council of the People’s Republic of China, *The Fourteenth Five-Year Plan for National Economic and Social Development of the People’s Republic of China and the Outline of Long-Term Goals for 2035* (中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm.
- ¹³⁸ Yin-wah Chu, “China’s New Urbanization Plan: Progress and Structural Constraints,” *Cities* 103 (August 2020): 3–4. <https://www.sciencedirect.com/science/article/pii/S0264275119307413>.
- ¹³⁹ Chen Hongshu, “Expert Opinion: Coordinated Development of Large, Medium and Small Cities Is the Direction to Which Urbanization Must Adhere” (专家视角: 大中小城市协调发展是城镇化必须坚持的方向), *National Development and Reform Commission*, April 11, 2019. Translation. http://news.jcrb.com/jszx/201904/t20190411_1987862.html; State Council of the People’s Republic of China, *New Style Urbanization Plan (2014-2020)* (国家新型城镇化规划 (2014—2020 年)), March 16, 2014. Translation. http://webcache.googleusercontent.com/search?q=cache:mnjZCPDJYC4J:www.gov.cn/zhengce/2014-03/16/content_2640075.htm.
- ¹⁴⁰ Meg Rithmire, “Land Institutions and Chinese Political Economy: Institutional Complementarities and Macroeconomic Management,” *Politics & Society* 45:1 (2017): 123–153, 135, 142. https://www.hbs.edu/ris/Publication%20Files/PoliticsSociety2017_69188ed6-01c7-481e-90a5-24d705acb8e5.pdf; *China Securities Journal*, “Urbanization Disease in Small County Towns: Surplus Inventory of New Homes, Civil Servants Assigned to Sell” (小县城陷城镇化病: 新房过剩 公务员被摊派卖房), February 7, 2014. Translation. <https://www.yicai.com/news/3437133.html>.
- ¹⁴¹ Juan Chen, Deborah S. Davis, and Pierre F. Landry, “Beyond Hukou Reform: Enhancing Human-Centered Urbanization in China,” *Paulson Institute*, February 2017, 5–7. https://paulsoninstitute.org.cn/wp-content/uploads/2017/02/PPM_Beyond-Hukou_Chen_Davis_Landry_English.pdf; Michael Pettis, “The Urbanization Fallacy,” *Carnegie Endowment for International Peace*, August 16, 2013. <https://carnegieendowment.org/chinafinancialmarkets/52709>.
- ¹⁴² Yin-wah Chu, “China’s New Urbanization Plan: Progress and Structural Constraints,” *Cities* 103 (August 2020): 2, 5–9. <https://www.sciencedirect.com/science/article/pii/S0264275119307413>.
- ¹⁴³ Yin-wah Chu, “China’s New Urbanization Plan: Progress and Structural Constraints,” *Cities* 103 (August 2020): 3–4. <https://www.sciencedirect.com/science/article/pii/S0264275119307413>.
- ¹⁴⁴ State Council of the People’s Republic of China, *The Fourteenth Five-Year Plan for National Economic and Social Development of the People’s Republic of China and the Outline of Long-Term Goals for 2035* (中华人民共和国国民经济和社会发展第十四个五年规划和 2035 年远景目标纲要), March 12, 2021. Translation. http://www.xinhuanet.com/2021-03/13/c_1127205564.htm; State Council of the People’s Republic of China, *New Style Urbanization Plan (2014-2020)* (国家新型城镇化规划 (2014—2020 年)), March 16, 2014. Translation. http://webcache.googleusercontent.com/search?q=cache:mnjZCPDJYC4J:www.gov.cn/zhengce/2014-03/16/content_2640075.htm.