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INTRODUCTION

Marlene Amstad, Guofeng Sun, and Wei Xiong

China's financial system has served indispensable roles in China's spectacular economic growth over the past 40 years. Given the size and growing complexity of the Chinese economy, China's financial system is likely to become even more important in mobilizing capital across the economy in the next stage of China's economic development. However, concerns are being expressed both inside and outside China about the potential instability in its financial system, with particular concerns about elevated real estate prices and debt levels. This handbook collects 17 chapters written by leading experts from academia, the policy community, and the financial industry to provide a holistic view of multiple sectors of China's financial system.

One may easily characterize that system as being large yet underdeveloped. This system builds around a dominant banking sector, a quickly growing bond market, and a widely followed stock market. Each of these markets is already among the largest in the global system, although not quite as developed as those in many advanced countries.

China's banking sector entails 5 of the 10 largest banks in the world. It remains the core of China's financial system and the key channel for implementing China's monetary policy. Chapter 1, **"Banking Institutions and Banking Regulations,"** by Guofeng Sun, documents the dominance of banking institutions in China's financial system. The loans made by banking institutions accounted for 92% of the Aggregate Financing to the Real Economy (AFRE) in 2002. While this ratio came down in recent years, it remained at a very high level of 76% in 2018. Even more impressively, banking institutions owned more than 97% of the total assets in China's financial system in 2018, reflecting the fact that banks not only make loans but also serve as the main sources of funding for the bond markets, for shadow banking products (such as trust loans and entrusted loans), and for even the asset management industry. This dominance is bolstered by the high saving rate of households and firms throughout China. Different from other countries, where savings are mostly absorbed by direct investment in bond and equity markets, in China the banking system captures a large share of these savings. This empowers the banking sector as the key channel for funding China's financial and monetary policies, as well as for developing other new financial sectors, particularly the bond market.

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The bond market has experienced rapid growth in the past decade, with bond market capitalization over GDP growing from 35% in 2008 to over 95% in 2018. Albeit still far from the level of over 200% in the United States, the Chinese bond market in 2019 became the second largest bond market in the world with $13 trillion, only after the United States with $38 trillion and before Japan with $12 trillion. Despite its size, the bond market has remained in some respects underdeveloped, as documented in chapter 5, **"Chinese Bond Markets and Interbank Market,"** by Marlene Amstad and Zhiguo He. While a centralized exchange market exists to enable nonbank institutions and individuals to invest in bonds, it accounts only for a small share of the bond market. Interestingly, the biggest part, listing about 89% of all bonds outstanding at the end of 2018, is another segmented market—the interbank bond market, which mainly serves the investment needs of banking institutions. The dominance of this largely bank-driven interbank bond market deeply connects the bond market to China's banking reforms, and in particular to both its interest rate liberalization and the internalization of its currency, the RMB. Room for further development and market deepening also exists in the corporate bond market. Despite its rapid growth and large market size, China's corporate bond market shows little credit differentiation, as over 95% of the outstanding amount of nonfinancial credit bonds are covered in only three rating categories. This bond market has so far seen very few public defaults.

While the stock market contributes less to the AFRE than do the banking sector and even the bond market, it has grown into the second largest equity market in the world, with a total market capitalization of $8.7 trillion at the end of 2017, trailing only the U.S. equity market with $32 trillion and ahead of Japan with $6.2 trillion. Chapter 11, **"The Development of the Chinese Stock Market,"** by Franklin Allen, Jun "QJ" Qian, Chenyu Shan, and Julie Lei Zhu, reviews the development of China's stock market and summarizes its institutional arrangements and market performance. Differing from most of the other financial sectors, the stock market initially grew outside of the banking sector and has been dominated by individual investors in terms of trading, as characterized by its high annual turnover ratios of 161.6% and 264.5% in the Shanghai and Shenzhen Stock Exchanges, respectively, which far exceed the ratios of other major stock exchanges throughout the world. The high liquidity in the secondary market contrasts with that in the tightly regulated primary market. China is one of few markets with a performance-based IPO system, incentivizing Chinese firms to get listed abroad despite their already being in the country with the second largest equity market. This is again a testament to the need of further development, despite the achieved size. It should be noted that this need has supported the rise of the venture capital market.

It is probably less known that the past 10 years have seen a period of unprecedented successes for both China's emerging industries and the venture capital (VC) market, which have both grown to global significance. Chapter 15, **"China's Venture Capital Market,"** by Zhaojun Huang and Xuan Tian, compares Chinese VC activities with U.S. ones. While the VC world was dominated by experienced foreign VCs in the 1990s and early 2000s, its growth in recent years is currently being driven largely by domestic VCs. Despite the Chinese VC market's size as the second largest in the world in terms of deal value, this market has nevertheless not yet matured.

It is tempting to adopt the common framework developed for evaluating Western financial systems to evaluate the strength as well as the weakness of China's financial sys-

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tem. This system certainly faces some common problems, such as a booming real estate sector and a largely expanded shadow banking sector. Chapter 7, **"China's Real Estate Market,"** by Chang Liu and Wei Xiong, describes the dramatic and long-lasting real estate boom that has occurred across China and discusses the crucial links of this boom to households, local governments, firms, and banks. In 2003–2017, housing price indices in China's four so-called first-tier cities—Beijing, Shanghai, Guangzhou, and Shenzhen—grew from 7 to 11 times higher, and even in the so-called second- and third-tier cities it grew from 3 to 5 times higher. As housing sales today contribute to almost a fifth of China's GDP, and as real estate–related loans account for about a quarter of its banking assets, a crash in the real estate sector would have enormous consequences on the country's economy, with potential spillover effects to the rest of the world economy.

While the real estate boom in China is reminiscent of the U.S. housing bubble in 2006, it is important to recognize that the origin of China's real estate boom is substantially different. The U.S. housing bubble, which eventually led to the U.S. financial crisis in 2008, was driven by a credit expansion through shadow banking to households. In China, the real estate boom is instead deeply rooted in local governments, which rely heavily on land sales revenues as well as debt collateralized by real estate assets to fund local fiscal spending. Interestingly, the shadow banking sector in China played a key role in channeling debt to the so-called local government financing vehicles, which are firms set up by local governments to raise debt financing for local infrastructure projects.

China's financial system has undergone many reforms in the past four decades, yet in many respects it remains substantially different from those in a typical Western country. Many of these differences are rooted in the institutional foundation of China's financial system. It is particularly useful to recognize that the government has consciously used the financial system as a toolbox to implement government policies and to resolve financing issues it has encountered during the country's economic reforms, as discussed by a recent review by Song and Xiong (2018). This perspective explains why its financial system is still underdeveloped despite its enormous size. In particular, it explains banks' lending preferences to state-owned enterprises (SOEs)—a key feature of China's banking sector, as highlighted by the celebrated model of the Chinese economy by Song, Storesletten, and Zilibotti (2011)—and it further explains the advantages of SOEs in qualifying for public listing in China's stock market. This handbook covers these key pillars of the institutional framework through several chapters.

To systematically understand how China's financial system differs from other countries, it is illustrative to look into financial policies, particularly those related to infrastructure financing. Chapter 6, **"Macroeconomic Effects of China's Financial Policies,"** by Kaiji Chen and Tao Zha, summarizes how regime shifts in the government's active financial policies influenced the ways in which preferential credits were allocated to SOEs and the heavy sector, mostly through the banking sector. The transition of the economy is presented in three phases from an economy led by growth and reforms of SOEs (1978–1997) to one driven by investment in large and capital-intensive enterprises, termed "the heavy sector" (1998–2015), to what the Chinese government calls "a new normal economy" (2016 to the present). The crucial role played by the government and the financial sector alike in mobilizing resources is highlighted for infrastructure investment. Chapter 8, **"Infrastructure Financing,"** by Zhiwei Zhang and Yi Xiong, covers the financing of sustained high levels of investment in infrastructure, which has been a

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key factor in China's economic success over the past decades. The chapter elucidates the complex system of fiscal and financial arrangements by government, focusing on the important role played by quasi-fiscal entities such as local government financing vehicles (LGFVs), allowing them to mobilize resources far beyond budget constraints and thus creating substantial amount of quasi-fiscal debt, which has eventually led to a major macro problem in the Chinese economy today.

While the financial system provides key funding for the development of the economy, its powerful instruments, without proper regulations, may also exacerbate existing distortions, which are ample in China's transitional economy. Chapter 2, **"Monetary Policy Framework and Transmission Mechanisms,"** by Yiping Huang, Tingting Ge, and Chu Wang, discusses the broad direction for monetary policy evolution against the background of the Chinese economy's transition from a centrally planned system to a market economy. Different from the apparently more effective, price-based monetary policy frameworks that are based on targeting certain interest rates, China's monetary policy targets the quantity of money supply in the economy. This important policy choice reflects the inability of the People's Bank of China (PBC) to effectively influence market interest rates in a substantial portion of the economy, such as SOEs and local governments, which is still not fully driven by market forces. Chapter 3, **"Monetary Policy Instruments,"** by Tao Wang, details how the PBC in recent years has increased the use of price-based policy instruments. However, to date the key framework still relies more on quantity-based policy instruments and also on macro prudential and administrative measures.

With China's widely observed successes in reforming its state sector, it has also started to speed up its liberalization and internationalization processes of the financial sectors. However, the government has been cautious in liberalizing the financial system owing to its concerns about potential adverse effects. A recent theory of Xiong (2018) argues that the liberalization of debt financing by local governments during China's postcrisis stimulus in 2008–2010 served to fuel the agency problems between the central government and local officials, leading to the rapid rise of leverage levels across the country. This balancing act over several stages can be seen in liberalizing interest rates, as summarized in chapter 4, **"China's Interest Rate Liberalization,"** by Jun Ma and Xiaobei He. The process of interest rate liberalization is described as being a gradual sequence from domestic money and bond market, over onshore loan and deposit rates in foreign currencies, to liberalization of RMB lending and deposit rates.

Similarly, Chapter 9, **"RMB Internationalization,"** by Kai Guo, Ningxin Jiang, Fan Qi, and Yue Zhao, discusses the current state of RMB internationalization from the time of limited progress before the global financial crisis to the acceleration post the crisis that peaked in the RMB's inclusion into the Special Drawing Right (SDR) currency basket of the International Monetary Fund. These efforts aim at meeting market demands by removing unnecessary administrative barriers and constructing a complete chain of RMB cross-border flows, including currency swaps as well as improved infrastructure for cross-border RMB trading and settlement. Started four decades ago, the opening of the capital account had seen twists and turns. Chapter 10, **"China's Capital Account Liberalization,"** by Yanliang Miao and Tuo Deng, describes how the opening of the country's capital accounts has been slower and bumpier than one might have anticipated. Despite various government efforts, starting with the foreign direct investment (FDI) expansion from 1992, the Q Schemes (RQFII, QDII, QFII) related to the dual surplus

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after 1997 as well as the C Schemes (stock connect, bond connect) related to the liberalization and carry trades reversal, the current degree of openness is still mixed between being much freer for certain types of flows (FDI) while still being stringent for others.

Aside from already large markets, the Chinese financial system is also home to several markets and institutional setups, which are relatively new to the country or are currently limited in scale but quickly developing. This includes standards in corporate governance as well as accounting principles. Of increasing importance are also the pension system and the development of asset management industry. Finally, in specific sectors such as payments, the growth of the fintech industry has leapfrogged the traditional system in just a few years.

Corporate governance and financial reporting standards in China have seen integration toward international standards. Chapter 12, **"Corporate Governance in China,"** by Cong Wang, evaluates the various types of agency problems dominating in Chinese companies, including concentrated ownership structures that lead to agency conflicts manifested in different forms of minority shareholder expropriation. While internal governance concepts are modeled after those in Western countries, their effectiveness is questioned as they often lack company-specific monitoring and independent design of managerial compensation in SOEs. Market-oriented approaches such as shareholder activism and the market for corporate control are still dysfunctional because of short-term-focused investors and ownership concentration. Regulatory reforms, including the investigations and enforcement actions by the China Securities Regulatory Commission (CSRC), are expected to play a more important role in China's corporate governance system. High demand for accounting information in the market has triggered groundbreaking changes during recent decades. Chapter 13, **"The Accounting System in China,"** by Tianyu Zhang, introduces the legislative framework of China's accounting system and reviews its evolution. It also identifies the need for further improvement in spite of the accounting profession's transition to a new era in China.

Alongside the maturing Chinese financial markets, the asset management industry gains in importance. Chapter 14, **"Investment Funds in China,"** by Wenxi Jiang, reviews important facts about China's investment funds over the past 20 years. Despite its fast growth, the mutual fund sector remains relatively small, covering only 3% to 4% of the Chinese stock market capitalization, compared with about 30% in the United States. Interestingly, while China's mutual fund's average expense ratios of active and passive mutual funds seem higher than in the United States, China's active managed mutual funds' return net of fees does *not* appear to underperform the market or a risk-adjusted benchmark, thus being different from its U.S. counterpart.

As the Chinese population ages, reforming and improving the pension system is of utmost importance. Chapter 16, **"The Chinese Pension System,"** by Hanming Fang and Jin Feng, details the three layers of China's pension system. The public pension schemes aiming to provide basic social security to all residents reaches 65% of the population, while the employer-sponsored annuity programs voluntarily provided by employers account for less than 0.5% of all the firms in China. Meanwhile, household savings-based annuity insurance policies are still in their infancy. The chapter further discusses many open issues to study in all these areas, including the efficiency cost of China's fragmented social insurance system, fiscal implications in case of a growth slowdown, optimizing investment product characteristics, and impacts on the Chinese labor market.

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Unexpectedly, the underdevelopment of China's financial system provides room for the country to leap over many developed countries in adopting frontier fintech innovations. In particular, mobile payment has found many wider applications in China than in any other countries. The two widely used mobile payment systems, Ali Pay and Wechat Pay, now anchor two ecosystems that offer a wide range of financial services, including payment, risk assessment, and credit, to a large pool of individuals and small firms that are otherwise underserved by traditional financial institutions. Chapter 17, **"Fintech Development,"** by Bohui Zhang, documents how China has emerged as a leader in fintech adoption rates, companies, and hubs.

China's financial system has undergone broad and fast changes over the past three decades and will continue to do so for the foreseeable future. Often the change occurs as many small steps, hampering the ability to see the bigger picture. Also, it's inevitable that events such as the pandemic in 2020 will leave its trace. This handbook aims to uncover the underlying long-term features of China's financial system and thus to offer a solid foundation to understand the changes that lie ahead.

Taken together, the chapters in this handbook can be used in universities and business schools as reading material for undergraduate or master-level courses. As a whole, it can be used as the main reading material for a course that specializes in the Chinese financial system. Its chapters can also be used separately as reading material for a broad range of courses, including ones that provide a general introduction to financial markets or to the Chinese economy as well as courses that cover specific economic and financial issues related to emerging economies. For finance practitioners and policymakers alike, this handbook offers a one-stop solution for an in-depth overview of the current state of China's financial markets and institutions. Furthermore, academics can use different chapters of the handbook as a reference to a wide range of economic and finance topics related to China process.

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