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# FINANCIAL REGULATION REFORMS IN CHINA – CAN ARTIFICIAL INTELLIGENCE BE A GAMECHANGER TO MORE SUSTAINABLE FINANCIAL REGULATIONS

## Abstract

Over the past few years, China has seen a substantial change in financial rules. The country's recent fundamental redesign of its supervision structure has resulted in a dramatically altered regulatory framework for banks and other financial services organizations operating in China. The National Financial Regulatory Administration (NFRA), China's new super financial regulator, is revolutionizing regulating the financial sector. Except for the securities industry, all financial sectors are regulated by the central government under the auspices of the NFRA. This involves the People's Bank of China (PBOC) being granted approval and oversight over financial holding corporations. Artificial Intelligence has demonstrated considerable promise in aiding the financial industry's regulation growth and assimilation into the framework. The development and application of generative AI technologies that have not been applied to the provision of public services in the PRC are expressly forbidden by the new Generative AI Regulation. Rather, it encompasses all generative AI technologies used in the PRC to serve the people. This is an important distinction for

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AI algorithms that may be used in several fields. Furthermore, the Deep Synthesis Regulation governs any use of deep synthesis technology in the PRC for the provision of internet information services, the same as the Algorithm Recommendation Regulation governs any use of algorithm recommendation technologies. A.I. has the potential to significantly improve financial regulation development and is already having an increasing effect on China's financial regulatory landscape.

**Keywords:** financial regulations, financing, artificial intelligence, China, regulatory changes

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## 1. Introduction

The Chinese financial system has undergone significant changes within the last several decades, and the financial regulations have changed significantly. The financial system's historical development has undergone various changes and revolutions. Prior to 1949, China's financial system was advanced, given the considerable integration of China and the rest of the world in terms of trade. The development of China's trade and financial system as a whole was primarily outside of the formal legal system, which is a crucial conclusion when analyzing the history of this period, including the rise of Shanghai as one of the financial hubs of Asia during the first half of the 20th century. In Shanghai and other large coastal towns, for instance, most business-related issues were settled out-of-court through guilds (merchant coalitions), families, and local notables, even after Western-style courts were established in the early 1900s. Upon the establishment of the People's Republic of China in 1949, all capitalist enterprises and establishments from before 1949 were nationalized by 1950. China's financial system was based on a single bank, the People's Bank of China (PBOC), from 1950 to 1978 [Chen, Tillmann 2021]. The Ministry of Finance, which was part of the federal government, owned and operated this bank. It performed the dual roles of central and commercial banks, managing nearly all financial transactions and holding approximately 93% of the nation's total financial assets. The PBOC used both a cash plan and a credit plan to regulate the cash flows in consumer markets and transfer flows across branches, primarily financing the physical production plans. The first significant structural alteration took place between 1978 and 1984. By the end of 1979, three state-owned banks had acquired partial ownership of the PBOC's commercial banking operations, and the organization had split off from the Ministry. The People's Construction

Bank of China (PCBC), established in 1954, handled transactions related to fixed investment, particularly in manufacturing. The Bank of China (BOC) was mandated to specialize in dealing with foreign trade and investment. The Agriculture Bank of China (ABC), established in 1979, was tasked with overseeing all banking operations in rural areas. China's central bank was legally created as the PBOC. The Industrial and Commercial Bank of China (ICBC), the nation's fourth state-owned commercial bank, was established in 1984 and assumed responsibility for the remaining PBOC business dealings. The rapid expansion of financial intermediaries other than the "Big Four" banks can be used to describe the development of China's financial system over the majority of the 1980s. The Special Economic Zones in the coastal areas saw the formation of regional banks, which local governments partially own; in the rural areas, the ABC oversaw the establishment of a network of Rural Credit Cooperatives (RCCs), which are comparable to credit unions in the U.S.; and in the urban areas, the RCCs' counterparts, the Urban Credit Cooperatives (UCCs), were also established. During this time, non-bank financial intermediaries began to appear and multiply. One example is the Trust and Investment Corporations (TICs), which provide certain banking and non-banking services with limitations on loans and deposits [Xiong 2012].

The establishment and expansion of China's stock market throughout the 1990s was the most important development for the country's financial system. Established in 1990, the two local stock exchanges, the Shenzhen Stock Exchange (SZSE) and the Shanghai Stock Exchange (SHSE), had rapid growth in terms of trading volume and total market capitalization over most of the 1990s and into the recent past. Like the stock market, the real estate sector has experienced tremendous growth in recent years, almost disappearing in the early 1990s. Over the past ten years, there have been significant declines in both the stock and real estate markets, which are marked by extreme volatility and speculative short-term investor behavior [Kim, Chen 2022].

These trends can be partially attributed to the fact that institutions and a supportive legislative framework have not developed at the same rate as the markets. For instance, the official Company Law did not take effect until the end of 1999, even though China's first bankruptcy law about SOEs was passed in 1986 and was intended to be a trial law. The limited liability companies, publicly traded companies, branches or divisions of foreign companies, and their organizational structures, securities issuance and trading, accounting, bankruptcy, and mergers and acquisitions are governed by this version of the company law. On August 27, 2006, China passed new bankruptcy laws, which went into effect on June 1, 2007. Financial sector reform after the Asian Financial Crisis 1997 concentrated on state-owned banks, particularly the issue of non-performing loans (NPLs). In Section II, we shall talk about this topic in more detail. After China joined the WTO in December 2001, a new era began, as seen by the growing rivalry from international financial institutions and the larger-scale, more frequent capital flows observed [Roberts et al. 2023].

Among other things, a developed financial system is defined by the significant role that institutional investors play. The emergence of institutional investors in China dates back to the late 1990s. In 1997, the first closed-ended fund was established, which prohibits investors from withdrawing capital after making an initial investment. In 2001, the first open-ended fund was established, which permits investors to withdraw capital freely, subject to restrictions on share redemption. As of November 2013, the number of fund companies was 98. Even with the expansion from RMB 11 billion (or U.S. $1.3 billion) in 1998 to RMB 2.58 trillion (or $322 billion) in May 2008, the total net assets value (NAV) remained low in relation to the assets of the banking industry. A few Qualified Foreign Institutional Investors (QFII) joined the asset management market in China in 2003 and have been there ever since, functioning through joint partnerships with local businesses. The RMB Qualified Foreign Institutional Investors (RQFII) program was approved by China in 2011, enabling QFII to make up to pre-specified investments in Chinese stock and bond markets. However, starting in July 2006, China permitted Qualified Domestic Institutional Investors (QDII) to make investments in foreign markets [Lee, Chih 2013].

Part of the foreign reserves were placed under national control when the China Investment Corporation (CIC) was founded in September 2007 with the goal of using the accumulated reserves for the benefit of the state. Although CIC occasionally releases information about its holdings, its investing approach is not very transparent overall. Since its founding, CIC has made a number of bold investment choices, such as the widely reported $3 billion pre-IPO investment in Blackstone, a private equity firm, and the $5 billion investment in Morgan Stanley, which took the form of obligatory convertible bonds that have the potential to acquire nearly 10% of the company's equity [Bu, Li,, Wu 2022].

Due to their low capital and the issues surrounding the management of the pension system, pension funds have not had a substantial impact on the stock or bond markets. The development of a multi-pillar pension system that includes individual accounts with employees' self-contributed and tax-exempt funds that can be directly invested in the financial markets can contribute to the development of the fiscal and financial systems as well as social stability, given the rapidly aging population and rising disposable incomes in households.

China's household savings rates have been high during the reform era, similar to other Asian nations. The rapid growth of private bank deposits since the mid-1980s is not surprising, given the expansion of the economy, the notable rise in personal income, and the scarcity of investment alternatives. Starting in the late 1980s, people living in urban regions have made up the biggest portion of overall deposits, followed by business deposits. Over time, the contribution of deposits from government agencies and organizations, including for-profit and non-profit, has gradually declined [Yang, He 2019].

Japan leads the group in total quantity, but China maintains the highest or second highest level in terms of the Time and Savings Deposits/GDP ratio. This has been higher than 90 % on average in recent years. Interest-bearing savings deposits account for the majority of deposits in China and are a reliable source for bank loans and other types of investments. The total amount of non-state bank credit given to Chinese Hybrid Sector companies is contrasted with privately held companies in Taiwan and South Korea, including publicly listed and traded [Cheng, Zeng 2023].

A comparison between the bank credit ratios for South Korea throughout the 1970s and 1980s, when the country saw rapid economic expansion, shows that comparable to South Korea's private bank credit two decades prior, the scope and expansion of China's hybrid bank credit between 1991 and 2009 are far smaller than those of Taiwan and South Korea during the same time period.

China may eventually be able to establish a stable and functional banking system thanks to the growth of non-state banks and other financial organizations. These financial organizations not only increase the overall effectiveness of the banking system but also lend money to help the Hybrid Sector expand. Since 2009, shadow banking, which includes trust loans, entrusted loans, loans from small-scale lending organizations, corporate bonds, informal finances, etc., has been expanding quickly due to the real economy's increasing demand for money. The expansion of the shadow banking sector is mirrored in the proliferation of wealth management offerings from banks.

The real economy's high need for capital combined with the banking system's limited loan quota has sharply increased shadow banking funding since 2009. An important criterion is the overall social financing that consists of corporate bonds, entrusted loans, and trust loans. Total Social Financing (TSF) is a liquidity measure that includes loans in local currency, loans in foreign currency, bank acceptance bills, entrusted loans, trusted loans, net corporate bond financing, and non-financial enterprise equity financing [Roberts et al. 2023].

In China's Monetary Policy Report Quarter Four of 2010, the PBOC provided further details on the statistics and definitions of this word in January 2011. It also began to release monthly data for this indicator. Since then, conventional monetary metrics like M2 have been viewed as inadequate in accounting for all social financing sources, making this indicator one of the most significant monetary indicators in China. In terms of average annual growth at that time, trust loans, entrusted loans, and net corporate bond financing were the top three forms of social finance, with rates of 58.0%, 53.7%, and 51.0%, respectively, for the time range between 2002 and 2012.

Various factors affect the growth in social financing. First, the regulatory restrictions continue to limit the bank loan quota. The demand for money is, therefore, far greater than the availability of bank loans. Because of this, shadow banking has been expanding quickly to supply the capital the actual economy needs. Second, the need for real estate funding and local government financing platforms cannot be met because of the restrictions on real estate loans. In this instance, the only ways that real estate businesses can obtain money are through trust loans or other means [Chen, Tillmann, 2021].

The significance of other banks in the banking industry cannot be overlooked, even though the major four or five banks (the fifth largest bank is the Bank of Communications, which is also state-owned) dominated every facet of the industry from 2001 to 2012. Since the late 1990s, these non-bank intermediaries have grown at an exceptional rate overall. The highest amount of assets are held by other commercial banks, RCCs, and TICs; international banks and mutual funds, which are not included in the table, are little in comparison, but these will probably be the subject of development in the near future.

According to the CBRC, mergers and acquisitions, equity transfers, new share subscriptions, and private stock placements are some of the ways that private businesses can acquire banks. Moreover, trust, financial leasing, and auto-financing organizations encourage private investment. On this front, following the Third Plenum of the 18th CPC Central Committee in November 2013, the government also made it possible for private investors to establish small and medium-sized banks and other financial institutions as long as they fulfilled certain standards. Lastly, a variety of informal financial intermediaries, some of which are considered illegal but which collectively supply a sizeable portion of funding to businesses operating in the hybrid sector, are not included in our coverage of non-bank financial institutions.

In the early years following the establishment of China's domestic stock exchanges in 1991, the SHSE and SZSE experienced tremendous expansion. On the other hand, their performance has declined over time. The performance of the value-weighted SHSE index (the SZSE's calculation is similar) during this period is inferior to that of the group's best performer, the German DAX, as well as the U.S. S&P 500, the United Kingdom's FTSE, and France's CAC within the last two decades. It is also only marginally superior to the group's worst performer, the Japanese Nikkei Index, which has recently significantly increased in value. According to market capitalization, the SHSE was the seventh-largest market in the world, while the SZSE was rated eleventh. The seventh-largest stock exchange in the world is the Hong Kong Stock Exchange (HKSE), where a limited number of mainland Chinese companies are listed and traded. It goes without saying that the Chinese financial markets will become more significant in the global financial system [Lee, Chih 2013].

In addition to the two primary exchanges, there are two other markets. First, in June 2004, a completely computerized market for small and medium-sized businesses (SMEs) called Er Ban Shi Chang, or "Second-tier Market," was created. It was modeled after the NASDAQ. Its goal was to make it easier for SMEs, particularly recently founded companies in high-tech sectors, to enter the market. Second, San Ban Shi Chang, often known as the "Third-tier Market," was founded with the primary goal of handling over-the-counter (OTC) transactions and de-listing companies. Certain publicly traded companies that do not match the listing requirements have been delisted from the SHSE and SZSE since 2001, and their shares are now traded on this market [Heilmann 2005].

If the CSRC approves, the enterprises in this market may be moved to the GEM or small and medium-sized plate. China created the Growth Enterprises Market (GEM, or "Chuang Ye Ban") on October 23, 2009, modeled after the NASDAQ. The market consisted of 28 businesses, most of which were in the pharmaceutical, electrical, and hi-tech sectors. GEM's primary objective is to finance small and medium-sized private businesses. In September 2009, the first ten companies to apply to list on the GEM attracted a total of RMB 784 billion in subscriptions; the second and third sets had eighteen companies, among them Huayi Brothers Media, the biggest privately held film business in China. The SZSE began releasing the GEM, the ChiNext, and ChiNext Composite indices in June and August of 2010, respectively [Lee, Chih, 2013].

The Chinese stock market's growth has accelerated since 2012. The National Equities Exchange and Quotations was given permission by the State Council on July 8, 2012, to expand the "new third-tier market" to include markets throughout the country in Beijing, Tianjin, Shanghai, and Wuhan. The State Council ultimately made the decision on December 14, 2013, to expand the new third-tier market's volume and enable a variety of small and medium-sized businesses to transact equities in this market. Preference shares are another recent development in the stock market, as is the potential switch from an approval-based to a registration-based IPO process.

In industrialized stock markets, preference shares are a well-established form, but in China, they were introduced following the Third Plenary Session in November 2013. As a result, the program is regarded as a significant invention in the Chinese stock market. Initially, this contributes to quickening the growth of direct financing and offering investors a wider range of investment options. Second, because preference share issuance is included in Tier-1 capital, it aids commercial banks in developing novel capital vehicles to satisfy regulatory capital requirements [Lee, Chih 2013].

The central government promised to change the current approval-based system of initial public offerings (IPOs) to a registration-based one in November 2013, which was an unexpectedly aggressive reform for the stock market. This move could potentially remove a roadblock that has distorted supply and demand and artificially inflated the valuations of new stock offerings. For a considerable amount of time, the approval-based system has been deemed as one of the primary shortcomings within the Chinese stock market.

The Chinese stock market has developed quickly recently. Yet, there is evidence that the system is still inefficient because listed firms' core principles do not always influence pricing and investor behavior. The main view is that emerging nations like China have greater "synchronous" stock price movements than developed nations. This means that stock values in these nations move up and down simultaneously. They blame inadequate protection for minority investors and shoddy market regulation in developing nations for this issue. Numerous lawsuits have also been filed, all of which claim insider trading and manipulation [Knox 2020].

Managers and other insiders from Chinese companies frequently did not employ sophisticated accounting and finance tricks, even by China's standards, to conceal their losses, in contrast to well-known companies in Western markets rocked by corporate scandals like Enron. These incidents demonstrate that inadequate and ineffectual regulation is a contributing factor to the inefficiencies observed in the Chinese stock markets.

"Policy financial bonds" are the second largest segment of the bond market. Similar to municipal bonds in the U.S., the revenues of the issuing of these bonds are invested in government-run projects and businesses like infrastructure construction. The issuers of these bonds are called "policy banks," and they function under the Ministry of Finance's supervision. The market for corporate bonds is not as large as that of government-issued bonds. It has, nevertheless, been expanding swiftly lately [Roberts, et al. 2023].

Asian nations often have smaller bond markets than stock markets, with the corporate bond market being particularly minor. The size of the corporate (private) and public bond markets is smaller in Asia (Korea, Malaysia, Taiwan, Singapore, Indonesia, Philippines, and Thailand) than it is in Europe and the United States. The exception is Japan, where the size of the corporate bond market is significantly smaller than that of the government bond market. Additionally, in comparison to other areas and nations, bank loans given to China's private sector Hybrid Sector are relatively tiny across all four components of the country's financial markets (other countries). Furthermore, the corporate bond market, also known as the "private" bond market, remains the least developed segment of China's financial markets.

China's listed companies issued both tradable and non-tradable shares before the share reform that was announced in 2005 and implemented in 2006–2007. The government or other state-owned legal entities (i.e., other listed or nonlisted corporations or organizations) held the non-tradable shares. There are various types of shares. Class A shares make up the bulk of trading shares, with non-tradable shares making up more than a quarter of all shares. Class A and B shares are among the tradable shares that are listed and traded on the SZSE or SHSE. Class B shares were initially issued to and exchanged by international investors, including those from Taiwan, Hong Kong, and QFIIs, while Class A shares were initially issued to and traded by Chinese investors. The shareholder rights (such as the ability to vote and receive dividends) of the two share classes issued by the same company are the same; however, B shares were sold at a substantial discount to A shares and were traded less often. Since the CSRC permitted Chinese nationals to trade and invest in B shares using foreign currency accounts in 2001, the "B share discount" has been much diminished [Lee J. Y. 2021].

Furthermore, Class H shares that are issued by mainland Chinese businesses and have been granted approval by the CSRC to be listed in Hong Kong are exchanged on the HKSE. Lastly, there are N and S shares for companies that are listed in Singapore and the United States but operate in China. Government shares changed to G shares and became tradable following the share changes covered.

Under the 2005 Company Law, listed companies in China must have a two-tier board structure, with supervisors ranked above directors. The board consists of three members minimum, and the board of directors has five to nineteen members maximum. The primary responsibility of the Board of Supervisors is to oversee the operations of the companies as well as the actions of the top managers and directors. The majority of the board is made up of representatives from the employee and shareholder community, with the remaining members being either executives from the parent companies or officials selected from government branches; directors and top managers of the companies are not permitted to serve as supervisors [Knox 2020].

The corporation may decide employee representation on the Board of Supervisors at its discretion, although employees' representation must make up at least one-third of the board. Similar to its American equivalent, the Board of Directors is responsible for selecting and dismissing CEOs. The state and legal person owners, who normally own the majority of shares and other shareholders, choose board members according to the "one share, one vote" system employed by companies in the Listed Sector. The CEO and other top managers may join the Board with the consent of the Board; specifically, the Chairman and one or two Vice-Chairmen are chosen by the remaining directors who hold the majority of votes [Heilmann 2005].

According to the CSRC, at least one-third of the board must have two independent members. In practice, some directors are nominated and appointed by the parent companies of the firms, as the law does not require every member of the Board to be elected by shareholders during general shareholder meetings. The nomination process is typically kept confidential, especially when nominating board members for former SOEs. A significant issue with the board structure is the appointment and contracting with the CEOs, as not all board members are chosen by the shareholders.

Another challenge is that value-boosting M&As are hampered by the current ownership structure, defined by a sizable number of non-tradable shares and cross-holdings of shares among listed firms and institutions. A non-listed company in the hybrid sector frequently buys a listed company that was previously a state-owned enterprise (SOE), but the state keeps a sizable portion of the non-tradable shares after the acquisition. Low-quality, unlisted companies may use such a purchase as a way around listing requirements and to get access to the financial markets.

Third, as non-depository financial intermediaries are a relatively new addition to China's financial institution landscape, a lack of institutional investors contributes to the frequency of corporate scandals. Perhaps experienced investors would be less susceptible to simple deceptions. The absence of institutions and legal experts contributes to another issue in doubtful law enforcement.

Fourth, a large number of listed firms, such as banks and financial services corporations, have the government acting in the capacities of both regulators and blockholders. The primary responsibility of the CSRC, whose functional equivalent in the United States is the SEC, is to oversee and manage stock exchanges and publicly traded corporations. The government exercises its shareholder control powers in listed enterprises through the Bureau of National Assets Management, which holds significant portions of nontradable shares or other SOEs (with holdings of nontradable shares). Furthermore, in dealing with listed corporations, the government's twin duties may result in competing objectives, such as maximizing shareholder profits vs increasing social welfare as a regulator or social planner. This would reduce the efficacy of both government tasks.

Economies centered around stock markets, like the United States and the United Kingdom in the 19th and 20th centuries, have had greater success creating new sectors than economies centered around intermediaries, like Germany and Japan. They contend that markets are a better option for funding emerging businesses than banks because there is a great deal of disagreement, and it is challenging to evaluate these sectors based on past performance. Information is inexpensive for investors in stock market-based economies like the United States and the United Kingdom because these countries often have sophisticated mechanisms in place for gathering and disseminating information. When this happens, markets function well because investors can gather knowledge at little cost, and those who expect large profits may finance the businesses that operate in

The venture capital and private equity industries play a significant role in this process. Because successful enterprises may be able to do an IPO, venture capitalists in the United States can raise enormous sums of money.

China's emerging industries may receive more funding if the country's private equity and venture capital sectors grow. China is unique in that it can create new high-tech sectors like computer software, electric vehicles, semiconductors, bio-genetics, and aerospace in a limited period, in addition to established businesses like manufacturing. China's development is distinct from that of most other emerging economies in the 1990s and that of South Korea and Taiwan in the 1970s when those latter nations prioritized the expansion of their manufacturing sectors.

China has already adopted the strategy of first bringing advanced technologies from developed nations and "nationalizing" these technologies within designated companies before moving toward more advanced technologies, much like Korea and Taiwan did in the 1970s when they were developing their traditional industries. They contend that since there is broad consensus regarding the optimal management practices for established businesses, delegating the decision to invest to a bank is a successful strategy, and banks are, therefore, a preferable source of funding to financial markets. Bank-based systems are more effective at financing the expansion of these businesses thanks to the delegation process and the economies of scale in information acquisition that follow. Consequently, markets cannot fully support the expansion and development of these industries as much as the financial system can.

In China, the mutual fund sector has developed through three phases. The initial phase spans from 1992, when China's first fund, LiuBo, was founded, until 1997 when the CSRC wrote and approved the first iteration of the mutual fund regulations. Closed-end and with a net asset value of RMB 100 million RMB ($12.5 million), the LiuBo Fund started trading on the SHSE in 1993. Although the sector grew quickly in the years following 1992, issues with fund trading and a lack of regulation hindered the industry's future expansion. Following the CSRC's release of its proposal for open-end fund investing, the first open-end fund, Hua An Chuangxin, was launched in September 2001, marking a significant milestone for China's Securities and other financial services organizations possess many mutual fund companies. Similar to their American counterparts, fund companies primarily derive their revenues from management fees, which make up over 80% of their entire revenue. Nine percent of overall revenue is derived from administration fees; the remaining revenue is derived from investments and other sources of income.

The CSRC updated the QFII regulations in August 2006 in an effort to encourage greater involvement from overseas investors. Applications for QFII quotas from overseas investors have increased significantly since the new regulations were implemented.

Most organizations in the initial batch of QFII applicants were investment banks and securities firms; the list also included firms that provide other financial services, such as insurance and pension funds. Three-quarters of the $10 billion capital inflow cap through QFIIs had been reached by the end of July 2006, when China authorized a total of $7.495 billion foreign investment capital quota from 45 QFIIs. The investment cap increased from $10 billion to $30 billion in December 2007 [Lee, Chih, 2013].

SAFE released proposed regulations in September 2009 that raised the maximum amount of money that a single QFII institution could invest from $800 million to $1 billion. In August 2011, the State Council approved RMB Qualified Foreign Institutional Investors (RMBFII), a program that enables foreign institutional investors to invest in the domestic securities market up to a predetermined quota, in line with the expansion of RMB internationalization. RMB 20 billion ($3.2 billion) was the original quota in January 2012; in November 2013, it was raised to RMB 144.6 billion ($23.3 billion).

In July 2006, qualified domestic institutional investors (QDII) received approval to invest in foreign markets following QFII. In markets like New York, London, Tokyo, and Hong Kong, the QDII funds invest in equities, bonds, real estate investment trusts, and other conventional financial assets. It is a transitional mechanism, similar to the QFII scheme, that offers restricted opportunities for local investors to access overseas markets when capital flows are constrained, and the currency of a country or territory is not freely convertible. Ten fund companies had received approval to introduce QDII as of early 2008. The QDII funds have not performed the best. Investors in QDII are quite concerned about the likelihood that the RMB will continue to appreciate vs the dollar and other major international currencies in the future [Xiong 2012].

There are various discrepancies between state and non-state banks. This is the result that state-owned businesses incur significantly lower bankruptcy and financial distress costs as a result of government protection (for social, political, and economic reasons). Additionally, these businesses find it simpler to obtain bank loans, particularly those provided by state-owned institutions.

The rise of the Hybrid Sector is even more remarkable in light of the factors above. Unsurprisingly, the relative contributions of the State, Listed, and Hybrid Sectors to the overall economy have changed fundamentally.

In 1980, the private sector contributed significantly to China's GDP, accounting for over two-thirds of the total. However, by 2011, the State Sector's share of the GDP had dropped to 15%.

First, money from the founders' friends and family is a crucial source of funding throughout the startup phase. Banks are another significant player. Peer-to-peer lending, defined as direct lending to unrelated persons via specialized websites without the involvement of a financial institution acting as a middleman, has experienced remarkable growth since 2010. Retained earnings, or internal funding, is the second crucial component. For businesses in AQQ's sample, trade credits and private credit agencies (PCAs) are more important sources of funding during a company's expansion phase than banks (Dixon, 2023).

PCAs have played a more crucial role in recent years. These include pawnshops and covert private money houses, credit associations run by a group of entrepreneurs who raise capital from both outside and group members to fund businesses, and shareholding cooperative enterprises managed by professional money brokers, lenders, and middlemen. In terms of corporate governance, all founders and executives of the firms included in the AQQ study (100%) stated that reputation loss is a major concern when asked what kind of losses they would be most concerned about if the company failed.

The mechanisms that the shadow financial sector uses to foster the expansion of the hybrid sector are first covered in this subsection. The law and legal institutions, which are generally accepted as the foundation for conducting business and finance, are then contrasted with these alternative institutions that function outside of the legal system. In the hybrid sector, alternative funding channels have two components. The funding source for investments comes first. Corporate governance comes in second.

The elements as mentioned above are very pertinent and significant to China's institutional development. Some contend that the set of ideas first established and codified by Kongzi (Confucius) has had the greatest influence in forming China's social norms and institutions in the absence of a dominant religion. This set of views, which differs greatly from Western notions about the formulation of legal codes, firmly defines the family and social systems.

There was the establishment of a connection between the degree of ownership and control separation and various legal environments. They demonstrate that in nations with weak protections for minority shareholders, family-run businesses will become the most common ownership structure, while professionally managed businesses are the best option in nations with robust protections.

Second, there is the demonstration that a good equilibrium with no external governance is conceivable if cooperation amongst various input suppliers is required and all suppliers gain from the firm's success, as internal, mutual monitoring may secure the best result. In the absence of external oversight and contract enforcement, business partners can nevertheless guarantee payments to each other by working together and keeping an eye on each other [Wu, et al. 2020].

It is important to address how investors and entrepreneurs mitigate and resolve issues related to public corruption. Proponents of institutional development contend that weak institutions, an ineffective government, and influential elites can seriously hamper China's long-term economic growth. Corruption has not stopped China's businesses from expanding rapidly, even in the hybrid sector, where corruption issues are more severe and legal protection is arguably worse than in the state and listed sectors.

Competition between local governments and officials from various regions within the same country could be a useful strategy to combat corruption. In order to find the government officials who will be most supportive of their private businesses, entrepreneurs can travel from one region to another. This encourages officials to provide "helping hands" rather than "grabbing hands" when providing public goods or services (such as granting licenses to start-up firms). Otherwise, profitable private businesses would leave the region. This treatment is usually accessible in a big nation like China, which has different areas.

China's distinctive institutional framework of a "regionally decentralized authoritarian system" is rather a cornerstone of its system, in which subnational governments maintain significant autonomy over regional economic policies while still being subject to central government authority. Local governments are primarily responsible for assisting TVEs, assigning bank credits to businesses, and selecting deserving businesses for listing under this framework. Through staff control and regional competitiveness, this approach reduces the knowledge gap that regulators experience and gives sub-national governors incentives. The lax execution of formal rules and China's remarkable economic success can be attributed to its current governance framework.

## 2. Financial regulations in China

After China recently undertook a structural revamp of its supervision structure, banks and other financial services organizations operating there will have to deal with a very different regulatory framework. The National Financial Regulatory Administration (NFRA), China's recently formed "super" financial regulator, will show off its prowess in the "Year of the Dragon." In May 2023, the China Banking and Insurance Regulatory Commission (CBIRC) was superseded by the NFRA. However, the complete disclosure of its duties and organizational structure did not occur until November. All financial sectors, with the exception of the securities industry, will be governed at the central government level by the NFRA. This includes the People's Bank of China (PBOC)-transferred approval and supervision jurisdiction over financial holding firms. Additionally, the China Securities Regulatory Commission's (CSRC) oversight of financial consumer protection has been transferred to the NFRA.

Big international banks and financial institutions are accustomed to the new regulatory framework, which is managed by a single, multi-sector super-regulator. This makes it easier to determine responsibilities and tasks. Ireland developed a single multi-sector financial regulator in 2003 and 2004 as part of a similar overhaul. In order to increase consistency and sophistication in the national financial regulator's approaches and standards, the idea is to have a single regulator overseeing authorization, prudential conduct, corporate governance, and other regulatory issues across different sectors. He also notes that similar expectations will be placed on companies operating in these different sectors. For instance, prior to now, different authorities oversaw Chinese financial firms engaged in asset and wealth management, including banks, trust companies, insurance providers, and financial holding companies. They will be overseen by the asset and wealth management institution supervision department of the NFRA under the new system.

The change makes it easier for the new regulator to better prohibit companies from making money off of potential regulatory arbitrage by establishments that were previously subject to separate regulatory bodies. The NFRA has strengthened the oversight of financial companies by publishing a number of sector-specific policies since its founding. These include guidelines on risk management for banks and insurance businesses, as well as temporary measures for the supervisory evaluation of trust companies. The regulator's increased focus and expectations on corporate governance, risk control, operating rules, and internal management of financial institutions are a common theme. This is consistent with other significant legislative advancements, like the modifications made to the Company Law.

China's banking regulators have been more strict in the last few years. Chinese media reports that the total amount of fines levied against banks for rule violations and noncompliance in 2023 surpassed RMB2.8 billion (£308.6 million). The majority of enforcement actions are with violations of internal control, corporate governance, and lending. The financial regulatory reform would result in more enforcement measures by the new regulator and higher standards for compliance and risk control for local enterprises [Zhou, Du 2021].

The compliance of financial services is already a rapidly expanding field for Chinese law firms, and this trend will continue as the amount of fines levied for non-compliance and rule violations rises, along with the number of new rules and measures that the NFRA issues.

In an effort to alleviate the property sector's dilemma, the central government has also announced measures to incentivize banks to lend to eligible real estate developers and to assist the so-called "real economy." The government has also prioritized a number of other sectors and projects, such as low-carbon and green, for bank lending. When making lending decisions, commercial banks will need to have more experience in a variety of fields and sectors because it will be more challenging for them to identify eligible borrowers in these industries and effectively control risks. This is because the policy mandates encouraging banks to provide credit to stimulate the economy and support emerging but strategically important industries.

For instance, banks may need to rely on outside knowledge, such as attorneys with the necessary background who comprehend industry hazards and intellectual property, in addition to customary banking and finance attorneys, when lending to startups in the field of new technologies.

The new financial regulator must strike the right balance in its supervisory approach in order to achieve the dual goals of creating a stable financial system and encouraging lending to support the economy. A strict regulatory strategy may limit banks' growth and lending activities, but a loose regulatory framework may cause financial dangers and market chaos. A lot of subsequent rules and administrative actions that demonstrate how these policies are being carried out, in reality, will also be crucial to the balancing act.

Although the regulatory structural changes may have an impact on the practice of law in some sectors, attorneys and their financial sector customers need to adapt to the new method of working. Lawyers may tailor legal documentation and the style of interaction accordingly because different authorities have varied review standards, processes, and approaches to the same issue [Tao 2017].

One of the most significant aspects of the reforms is the uniform regulation of the domestic bond market. Enterprise bonds were overseen by the National Development and Reform Commission until October 2023, when they were transferred to the CSRC. Enterprise bonds were mostly issued by local governments. There will be necessary adjustments in relevant legal work as a result of the recent consolidation of the regulatory responsibilities for enterprise bonds and corporate bonds.

In a recently published document, the international department of the NFRA reaffirmed the regulator's pledge to "promote high-level opening-up of the banking and insurance industries." Additionally, it has loosened the requirements for approval for international organizations, including the licensing of insurance brokers to overseas investors. New policies and significant incentives are also in place at the local government level to promote the creation of financial institutions with foreign investment [Li, Miao 2023].

There will be necessary adjustments in relevant legal work as a result of the recent consolidation of the regulatory responsibilities for enterprise bonds and corporate bonds.

The government has been working hard in recent years to reduce the risk in its financial system, which includes tightening regulations and trying to control the shadow banking sector. Nevertheless, despite these initiatives, the financial system has been exposed to externally sourced risks in the form of shocks from the tech and real estate sectors as well as rising municipal government debt.

As part of its restructuring plan unveiled at China's annual legislative and political advisory meetings, the Two Sessions last month, the government established a new super-regulator, the National Financial Regulatory Administration (NFRA), to better see across sectors and anticipate risks to the financial system [Yang 2022].

The China Banking and Insurance Regulatory Commission (CBIRC), the central bank (PBoC), and the securities regulator (CSRC) will be replaced by the National Financial Regulatory Authority (NFRA), which would oversee and control the entire financial sector, with the exception of securities. The NFRA will report directly to the State Council. The goal of this action is to reduce redundancy and improve cooperation between government and party stakeholders.

Crucially, Li Qiang, as Premier, would oversee all ministries' operations and be able to see into their actions. This will allow him to coordinate with other stakeholders and make sure the regulator is not outclassed by the organizations it is regulating. Li is President Xi's deputy in the party and administration, demonstrating Xi's centrality in this endeavor and granting Xi more sway over financial and economic choices. To supervise important decision-making, the government's NFRA will also have mirror institutions within the Chinese Communist Party. Planning, management, and supervision of financial policy will be transferred from the State Council's Financial Stability and Development Committee to the recently established Central Financial Commission. Additionally, the Central Financial Work Committee, which was revived after ceasing operations in 2002, would endeavor to incorporate party-building and ideology into the financial system [Bu, Li, Wu 2022].

Financial regulation gaps will be sealed by the NFRA's centralized supervision. The CSRC, China's securities regulator, and the CBIRC, China's banking and insurance regulator, are two of the many regulators that have been in charge of the country's financial industry. Before the CBIRC was established in 2018, as a result of reforms, China had separate banking and insurance administrations. The NFRA will be able to tighten supervision and oversight of financial institutions' compliance, operational risks, and investor protection, as well as plug any regulatory gaps now that the entire financial sector is under its exclusive jurisdiction. It would also remove conflicts of interest for local bodies that were previously in charge of reaching development targets and overseeing financial risk by clearly defining regulatory and developmental tasks.

The NFRA is able to more effectively identify and manage risks across industries thanks to Premier Li Qiang's leadership. The financial infrastructure has not always been the source of risks to the financial system. For instance, the collapse of the real estate market put the entire banking system at risk because local banks had excessive leverage on developers or real estate. Placing Premier Li directly in charge of the NFRA gives him visibility across the entire government and improves the transparency of cross-exposure risks between the financial and non-financial sectors, as he has jurisdiction over the actions of all ministries [Zaring 2011].

The NFRA is able to maintain influence over other political entities because of its elevated standing and Premier Li's guidance. Prudent financial policies can be overshadowed by politics. For instance, political leaders have the ability to overrule financial regulators and induce politically harmful bankruptcies, making it difficult to allow a bank or state-owned firm (SOE) to file for bankruptcy. Important financial impact decision-makers are currently seated at the table. It is now more difficult for anyone to override the NFRA, guaranteeing that solid financial policy is given priority, thanks to its enhanced standing on par with important party bodies and SOE heads and Premier Li serving as its chair [Cheng, Zeng 2023].

There is a chance that some local banks will fail, but the risk is not widespread. Due to previous government interventions, investors have come to expect troubled banks and state-owned enterprises (SOEs) to be saved. However, the central government wants to make it clear that it won't always be there to defend state banks now that the NFRA has a lot of power. Many small and medium-sized provincial banks are likely to be permitted to fail, given the recent real estate crash and the issue involving highly leveraged banks. But because central banks are well run and have addressed the real estate issue, the banking system is essentially stable. These changes support the long-term stability and well-being of the financial system, even though it might take some time for it to fully recover.

The establishment of this new organization demonstrates the government's long-term commitment to de-risking the financial system and how seriously it takes the banking sector. Financial stability and the investment climate should be strengthened by increased monitoring and intra-governmental cooperation. In the long run, the new government and party institutions' duties and responsibilities should improve the efficiency and stability of China's financial system, even though they will take some time to settle and cause some regulatory delay and uncertainty [Yang, He 2019].

Additionally, the Chinese government has pledged to increase its openness to foreign investors and improve the business environment for both domestic and international enterprises. Intensifying efforts to draw in and make use of foreign investment were given top priority in the 2023 Government Work Report because China needs foreign money to support its economic recovery. The Ministry of Commerce declared 2023 to be "Invest in China Year" in late March, and government and party officials have since persisted in using language that is favorable to industry. Earlier this month, during his first press conference as Premier, Li Qiang praised the fact that the majority of foreign businesses remain upbeat about their chances of development in China. He also mentioned that last year, China used over USD 189 billion in foreign investment, a record high that is nearly USD 50 billion more than it was three years prior [Hine 2023].

Nevertheless, it will be crucial to monitor the Chinese Communist Party's growing control and sway over the banking industry. In order to further the party's ultimate goal of stability, the Central Financial Commission, a party body that oversees financial strategy and policy, and the Central Financial Work Committee, a party body that integrates ideology and party-building within the financial system, will be established. This will strengthen the party's influence over decision-making within and outside of the financial sector.

China's efforts to de-risk the financial system will be supported by its optimistic economic projection for 2023, though it is uncertain if growth will continue in the long run. Beijing's recent legislative support for the real estate sector is helping to minimize systemic concerns, even though some small and medium-sized real estate developers still face difficulties. The real estate sector, which accounts for 25% of China's GDP, is already seeing signs of recovery and is contributing to the country's economic turnaround. Analysts think China's post-Covid economic recovery will perform better than Beijing's stated goal of "around 5%" growth in 2023 (some forecasting 6%), so Beijing may find that bolstering its efforts to modernize its financial regulators and de-risk the system is precisely what the country needs.

The Chinese financial system has undergone massive changes within the last several years, arising from a growing need for financial regulatory supervision and the challenges arising from the structural changes in the Chinese financial system. These challenging environments have led to the creation of a new financial regulator. The Chinese government has established plans for the establishment of a central commission for finance as the Central Committee's own decision-making body, which will be in charge of organizing, planning, and directing the nation's initiatives to achieve financial development and stability. It will take the place of the Financial Stability and Development Committee of the State Council, ad this shall strengthen control over the financial industry, which has recently become a source of instability. The National Bureau of Financial Regulation, a brand-new national regulatory organization, will also be established. With the exception of the securities sector, it will be in charge of overseeing the protection of consumer rights and financial industry regulation. The PBOC will concentrate on macroprudential regulation and monetary policy, while the China Banking and Insurance Regulatory Commission will be disbanded [Heilmann 2005].

From a one-regulator system to the current one bureau, one commission, and one bank structure, China's financial regulatory environment has seen significant changes. Prior to 1990, the only financial regulator in China was the PBOC, and the country's financial industry was made up of a small number of state-owned commercial banks. With the emergence of cross-sector financial products, such as bank wealth management products, in the early 2000s, China's financial sector began to shift. Since many regulators must oversee these combined financial operations, this has presented difficulties for the sectoral regulatory structure. Additionally, it makes leeway for regulatory evasion in sectors with ambiguous supervisory tasks and rent-seeking in those with overlapping supervisory responsibilities. The State Council adopted an interministerial joint meeting mechanism in 2003 to coordinate cross-sectorial regulations for all financial authorities in an effort to alleviate supervisory inefficiencies. The reason this didn't work out was that none of the regulatory organizations had the real executive authority to set an example [Xuan, Ge, Yang, Zhang 2024].

Following years of volatility in the stock market, real estate market, and internet finance, the Chinese government launched a significant overhaul in 2017–18. First, in 2017, the State Council established the Financial

Stability and Development Commission. Because this commission has a higher administrative rank than the current regulators, it is guaranteed the executive authority to organize others to take on significant problems and spearhead financial reform. Then, in 2018, the China Banking and Insurance Regulatory Commission took the position of the Banking Regulatory Commission and the Insurance Regulatory Commission [Kim, Chen 2022].

The 2017–18 reform demonstrates the response to the evolving financial system by progressively moving from sectorial control to functional regulation. While this shift will continue, the 2023 reform demonstrates urgent worries about financial dangers and its desire for more control over the financial sector. In an attempt to centralize efforts to stabilize the economy and coordinate risk management, the Central Commission for Finance was established in 1998, following the start of the Asian financial crisis. Its resuscitation in the present implies that Beijing's apprehensions regarding the financial system have attained parity with those of the crisis. The optimization of the central bank's structure is another goal of the 2023 plan. Every regional branch that functions throughout several provinces will be eliminated. Rather, there will be five distinct branches located in the cities of Shenzhen, Dalian, Ningbo, Qingdao, and Xiamen, plus one provincial-level branch in each of the 31 provinces. It will have an improved central-local framework for macroprudential regulation and the execution of monetary policy. There will be changes to regional financial regulatory regimes. Together with the financial regulatory organizations of the local governments, central financial regulators will assign local agencies to supervise, coordinate, and carry out financial supervision and reform. The task of advancing financial development is no longer the responsibility of local governments. Instead, they have been tasked with the explicit responsibility of limiting financial risks. The central government is strongly focused on local financial supervision. The extent of local government debt is a serious concern that has led to the revision of the local financial regulatory structure [Guo, Liu, Dai 2020]. The local government financial vehicle (LGFV) debt was around 60 trillion RMB (US$8.3 trillion) in 2022, while the Chinese local government's debt reached 35 trillion RMB (US$4.8 trillion).

The main challenge with the local governments recognizes the hazards associated with this multi-trillion dollar local government debt and wants to use large-scale debt swapping and restructuring to address hidden LGFV debt. Beijing will take the lead in local debt restructuring thanks to changes to the local financial regulatory framework, which will also hold local governments responsible for managing financial risks [Lee, Chih 2013].

The Chinese economy is experiencing unprecedented growth at the same time as the 2023 financial reform cycle. Because of the strain of high inflation and tightening monetary policy in advanced economies, the external environment is unpredictable once more. The main issues facing the country are weak growth, rising systemic risk, and dwindling policy space [Tallberg, Lundgren,Geith 2024].

It is becoming more and more important that the plan to change the financial regulatory environment is carried out seriously in light of the uncertain economic outlook. This approach relies heavily on the National Bureau of Financial Regulation.

## 3. Artificial Intelligence

China's A.I. market was estimated to be worth RMB 150 billion around 2022, and the expectation is that the market will be valued at RMB 400 billion by the year 2025. The expectation by a government estimate is that the associated businesses may generate more than RMB 10 trillion annually, with the A.I. sector alone to generate RMB 1 trillion in income yearly by 2030. China's economy might benefit from artificial intelligence (A.I.) technology, which has several uses in industrial operations, medical research, autonomous cars, etc., for as much as US$600 billion yearly, according to industrial estimates. This estimated future value is equivalent to around 3.7% of China's GDP in current terms [Wu et al. 2020]. Nevertheless, significantly larger financial incentives will be needed in order to realize this and optimize value generation. In 2021, venture capital and private equity investors provided US$17 billion in funding to A.I. start-ups in China, accounting for approximately one-fifth of the total worldwide. Investments are needed in a number of areas, including the technology and data that A.I. systems rely on, the skilled personnel needed to develop the systems, and the creation of new business models, industry standards, and alliances that foster data ecosystems [Knox 2020].

When it comes to creating A.I. legislation, China has been very active in regulating the sector, which has encompassed several new regulations.

The nation has several more comprehensive plans in place to encourage the growth of the A.I. sector, including the Next Generation Artificial Intelligence Development Plan (2017), Made in China 2025, and the Action Outline for Promoting the Development of Big Data (2015). China has also accelerated the process of enacting certain regulations governing A.I. in relation to algorithms and industrial ethics in recent years. Stricter regulations for the largest internet businesses in China were instituted by regulators, which also increased their supervision over data security and foreign listing guidelines. There have been several regulatory challenges that arose from limiting the ability of companies to freely utilize the data of citizens, which has been primarily aimed at bringing in line larger companies, such as Alibaba and Tencent. Nevertheless, the I.T. industry has been a major focus for the government in achieving stronger growth overall and developing the industry in the future [Lin 2019].

The Shenzhen government enacted the Regulations on Promoting Artificial Intelligence Industry in Shenzhen Special Economic Zone (the Shenzhen A.I. Regulation) on September 6, 2022. The regulation went into effect on November 1, 2022, and it is China's first local law aimed at advancing A.I. development. By encouraging governmental entities to be the leaders in exploiting related technology and by expanding financial support for A.I. research in the city, the Shenzhen A.I. Regulation seeks to advance the A.I. sector. It also creates criteria for firms and organizations operating in the industry to share public data [Sheehan 2023].

The Shenzhen A.I. Regulation states that if they meet international criteria, Shenzhen-based AI services and products that are deemed to be "low risk" may be tested and trialed outside of local and national regulations. The Shenzhen government will independently create rules for risk management and classification. This risk-based approach to management will support industry innovation. The Shenzhen A.I. Regulation also mandates the creation of an A.I. ethics committee, whose duties include creating safety guidelines and analyzing the potential effects of technology on employment, data protection, and other societal issues.

In a similar initiative, Shanghai's A.I. industry development has increased significantly within the last several years. The size of the A.I. industry in the city has grown dramatically over the last several years. The total output value of Shanghai's A.I. businesses that are above the authorized size reached more than RMB 305.68 billion in 2021. In Shanghai, the number of skilled workers in the A.I. industry increased dramatically from 100,000 in 2018 to 230,000 in 2021 alone, and Shanghai aims to develop three key industries with focused efforts. These are biomedicine, integrated circuits, and artificial intelligence (A.I.) [Cao, Power 2025].

The Shanghai Regulations on Promoting the Development of the A.I. Industry (the Shanghai A.I. Regulation), which went into effect on October 1, 2022, is the first provincial-level regulation pertaining to A.I. development in China. It was approved on September 22, 2022, in Shanghai. By growing the key A.I. sectors and fortifying the alliance of A.I. firms, the Shanghai A.I. Regulation aims to foster innovation and discoveries. The Shanghai A.I. Regulation, which mentions "sandbox" supervision and grading management, will further pave the way for the sound and sustainable development of A.I. technology. These two management approaches are designed to give businesses enough room to experiment and explore their technologies [Xiong 2012].

The Shanghai A.I. Regulation is notable for its provision of a certain amount of leeway for small violations, which serves to stimulate scientific research and spur creative thinking. The argument is that since the area of artificial intelligence is still in its infancy, a "disclaimer" clause can provide some room for experimentation and testing while also enhancing institutional flexibility and inclusivity. Lists of these infraction behaviors, with an indication that small offenses would not result in an administrative penalty, are available from the relevant municipal agencies [Lee J. Y. 2021].

By establishing an ethics committee, the Shanghai A.I. Regulation also emphasizes fundamental principles and moral standards for the growth of the sector. To guarantee the sector develops responsibly, organizations engaged in AI-related research, development, and applications should adhere to legal requirements and raise ethical awareness[Smuha, 2021].

Shenzhen has garnered media attention for enacting China's first autonomous vehicle (A.V.) rules on August 1, 2022. A driver must remain inside the vehicle. However, registered A.V.s are now permitted to run throughout much of the city without a driver in the driver's seat. The COVID pandemic has definitely been a major accelerator for the introduction of driverless vehicles. The laws of Shenzhen offer an essential foundation for accountability in the case of an accident. Once more, with over 1200 businesses producing RMB 106.6 billion in 2021, the city is a leader in the autonomous car industry. By 2025, it hopes to generate RMB 200 billion in revenue overall [Hine 2023].

China established its initial national guidelines for rating autonomous vehicles in 2021. Official definitions of self-driving automobiles may be found in the nation's Taxonomy of Driving Automation for Vehicles. With approval from local authorities, robo-taxis has been operating in limited locations in Chinese cities. China is quickly becoming a major player in the international robotics market as the government wants the sector to be able to compete with the most inventive economies in the world. This has a significant effect on healthcare options and the financing of healthcare activities. With operating costs being potentially lowered by the efficient utilization of robots, the utilization of robots may have a considerable impact on financing opportunities. The Chinese Institute of Electronics (CIE) reported that in 2021, the value of China's robotics sector was RMB 83.9 billion. Out of this, the value of industrial robots was RMB 44.6 billion, while the value of service robots was RMB 39.3 billion [Li, Miao 2023].

The Chinese government has been pushing the country's robotics sector forward. The current Five-Year Plan for the industry was jointly launched on December 28, 2021, by the MIIT and many other agencies. The plan aims to enhance China's position as a robot producer and expand the use of robots. According to the strategy, China is expected to lead the world in robotics innovation by 2025, leading the way in both core robotics technology and high-end robotics goods. China should have some of the greatest robotics in the world by 2035, and robotics should be incorporated into everyday Chinese life, economic growth, and social governance [Chen, Tillmann 2021].

## 4. A.I.'s impact on financial regulatory changes

According to the Organization for Economic Co-operation and Development (OECD), artificial intelligence is the ability of a machine-based system to forecast, recommend, or make decisions that impact real or virtual environments, given a set of human-defined objectives. Generative A.I. is a subtype of artificial intelligence and focuses on the creation of output (such as literature, music, or visuals) from input data by utilizing deep learning techniques. One of the best examples of this technology is ChatGPT, an interactive A.I. language model that has gained attention since its November 2022 public release. The PRC has seen the debut of Baidu's generative AI-powered "Ernie Bot," and rivals have either launched or plan to release other tools of a similar nature. These regulations play a critical role in the healthcare sector and advance the incorporation of A.I. into healthcare financing [Lin 2019].

A.I. has several benefits, but there are also risks associated with the deployment of this technology. This includes the loss of personal data, the distribution of illicit information, and the propagation of false news and content. These concerns also pose a challenge to the existing legal system, including financing discussions. In order to address these issues, a number of countries have passed new legislation or are in the process of doing so [Wu et al. 2020].

Like in other countries, the PRC may already have regulations pertaining to the use of A.I., including those regarding data protection, cybersecurity, unfair competition, and e-commerce. Nonetheless, the Cyberspace Administration of China (CAC) has introduced new, specialized regulations to control A.I. The Algorithm Recommendation Regulation was the first AI-specific law proposed in the People's Republic of China. It went into effect on March 1, 2022. In the PRC, it controls the application of algorithmic recommendation technology for online service delivery. Another significant legislation was the deep synthesis legislation that was enacted as the second one [Cao, Zhai 2022].

The Deep Synthesis Regulation was jointly enacted by the CAC, the Ministry of Industry and Information Technology (MIIT), and the Ministry of Public Security (MPS) on November 25, 2022. It became operative on January 10, 2023. Filing suitable algorithms with the CAC is one of the obligations under the Deep Synthesis Regulation. In order to remove any remaining uncertainty regarding algorithm filing requirements, the CAC released the first batch of submitted deep synthesis algorithms in the PRC (A.I. Algorithm Filing List) on June 23, 2023. The next significant A.I. regulation was the Generative A.I. regulation. The Generative A.I. Regulation was jointly published on July 13, 2023, by the CAC, the National Development and Reform Commission, the Ministry of Education (MOE), the Ministry of Science and Technology (MST), the MIIT, and the MPS. It aimed to regulate generative A.I. technologies more broadly and went into effect on August 15, 2023 [Cheng, Zeng 2023].

Another important measure is the new draft on ethical evaluation measures. The MST released the Draft Ethical Review Measure on April 14, 2023, and the measure focuses on the ethical evaluation of science and technology-related activities that include ethical hazards, like the creation and research (R&D) of artificial intelligence (A.I.) technologies. Another draft A.I. law was presented to the National People's Congress of the PRC's Standing Committee for discussion in 2023, as per the State Council of the PRC's Legislative Work Plan for 2023, which was made public on May 31, 2023. The main laws governing AI-related services and products in the PRC going forward, including generative A.I. and AI-generated content (AIGC), are the Algorithm Recommendation Regulation, the Deep Synthesis Regulation, the Draft Ethical Review Measure, once it becomes effective, and the Generative A.I. Regulation (collectively, A.I. Regulations). These laws represent an important area for the financial industry and the incorporation of A.I. for financing and the investment sector [Dixon 2023].

In terms of the material scope, several regulations apply. The Generative A.I. Regulation covers the use of all generative A.I. technologies to provide services to the public in the PRC, specifically excluding the development and application of generative A.I. technologies that have not been used to provide services to the public in the PRC. This is an important distinction for A.I. algorithms that may be utilized in other areas. Furthermore, the Algorithm Recommendation Regulation covers any use of algorithm recommendation technologies to provide internet information services in the PRC, and the Deep Synthesis Regulation covers any use of deep synthesis technologies to provide internet information services in the PRC.

The A.I. Regulations do not restrict their application to PRC people or businesses in terms of territory. If foreign people or organizations are engaged in the R&D of A.I. technology in the PRC or in the use of A.I. technologies to deliver services, they may also be apprehended. The Generative A.I. Regulation, however, expressly states that it cannot be used for A.I. technology R&D in the PRC if the pertinent services have not been made available to the general public inside PRC borders. This is an important restriction on the utilization of modern A.I. regulations for healthcare financing within the PRC [Roberts et al. 2023].

## 5. Conclusion

Financial regulations have changed significantly within China in the last several years. Banks and other financial services companies operating in China will have to contend with a significantly changed regulatory framework following the country's recent fundamental overhaul of its supervision structure. China's new super financial regulator, the NFRA, represents a game-changer in dealing with the financial industry. The NFRA oversees the central government's regulation of all financial sectors, except the securities business. This includes the authority for approval and supervision over financial holding companies that was handed to the People's Bank of China (PBOC). A.I. has exhibited significant potential in supporting the regulatory development for the financial industry and the integration into the framework. The new Generative A.I. Regulation specifically prohibits the development and deployment of generative A.I. technologies that have not been utilized to provide services to the public in the PRC. Instead, it covers the use of all generative A.I. technologies to provide services to the public in the PRC. This is a crucial distinction for A.I. algorithms that could find application in different domains. Additionally, any use of deep synthesis technology to provide internet information services in the PRC is covered by the Deep Synthesis Regulation, just as any use of algorithm recommendation technologies is covered by the Algorithm Recommendation Regulation. A.I. can yield significant benefits for the development of financial regulations and have a growing impact on the financial regulatory environment in China.

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