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DEVELOPMENTS AND PROSPECTS

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ABSTRACT

In this chapter, we review the development of the insurance industry in China, and provide a comprehensive discussion of its regulatory framework, major insurance segments, market structure, InsurTech, social insurance, and the challenges and prospects for the future development of the insurance market in China.

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1. Introduction

Since China embarked on the "reform and opening up" in 1979, the Chinese economy has grown into the second largest one in the world and it has transitioned into a market economy, albeit under the "shadows" of governments (Fang et. al., 2023). The reallocations of economic activities from the state-owned enterprises (SOEs) to the private sector, including employment, capital, and output, contributed significantly to the Chinese economic growth (Song, Storelestten and Zilibotti, 2011). The SOE reform of 1998 dismantled the "iron rice bowls" which were synonymous of the central planned economy, meaning that Chinese households are now more exposed to various risks that are inherent to a market economy (Sachs and Woo, 2001). The insurance industry gradually develops to address the needs to hedge against multiple risks that Chinese households and firms face, including the risks associated with health care, long-term care and longevity that are covered by life and health related insurance products, automobile and home insurance products, and agricultural and other production related insurance products. Insurance, either commercially purchased or socially provided, is now considered as one of the key supporting pillars for the economic and social development.

Indeed, since 2017 the Chinese insurance market has ranked second just behind the United States in size, as measured by premiums written. In 2021, the United States was the largest insurance market worldwide with 2.71 trillion US dollars (USD) of premiums written, followed by China (mainland) and Japan with direct premiums of approximately 696 billion and 403 billion USD, respectively. In 2021, insurance companies in China disbursed a total of 1.2 trillion CNY in benefit payments. Figure 1 plots the top 10 insurance markets in the world according to the life and nonlife direct written premiums.

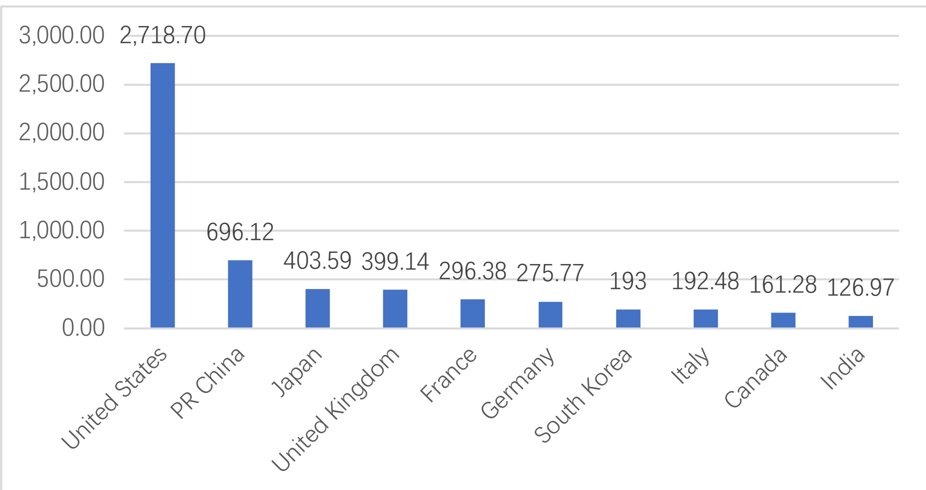

Figure 1. Leading life and nonlife direct premium writing countries globally in 2021, by value of premiums (in billion USD).

Source: Swiss Re, 2021.

The growth of Chinese insurance market is striking. The insurance market barely existed in 1979 when China started its market-oriented economic reforms. The demand for risk management rises rapidly as China's economy becomes larger and market plays a more important role in resource allocations. Figure 2 plots the total premium revenue of insurance companies in China from 2009 to 2022, in billion CNY.[2] Within a short span of 15 years, the total written premiums of the Chinese insurance market quadrupled. China's share in the global insurance market will continue to increase. Swiss Re Institute (2022) forecasted that the China's share in the written premiums of the global insurance market will rise from 11% in 2018 to 20% in 2029, while the share of the US will decrease from 28% to 25% during the same time span. Swiss Re (2022) further forecasted that the Chinese insurance market is on track to surpass that of the US as the largest insurance market in the world by the mid-2030s.

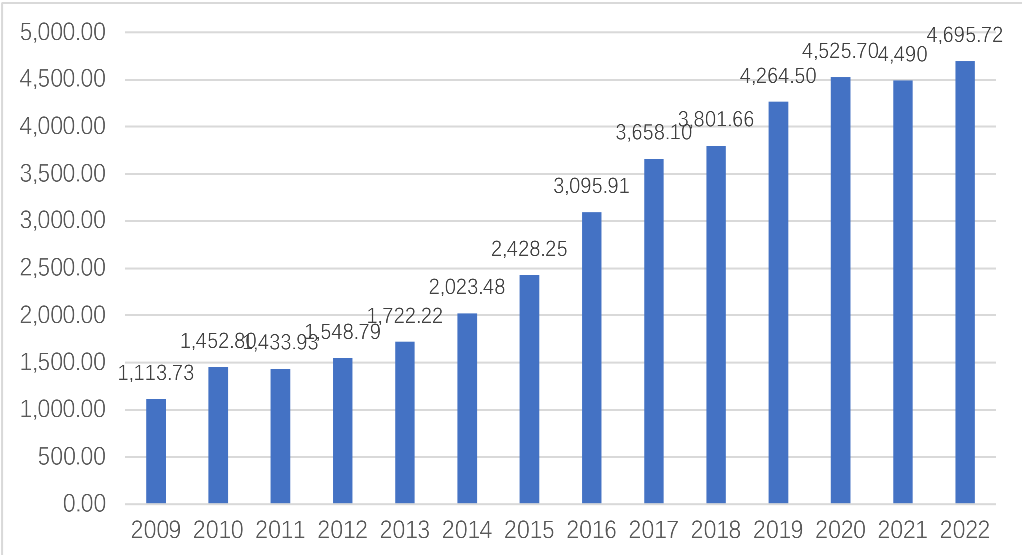

Figure 2. Total premium revenue of insurance companies in China from 2009 to 2022 (in billion CNY).

Source: National Financial Regulatory Administration. Website: cbirc.gov.cn

However, there is still much room for significant growth of the Chinese insurance market. Insurance density and insurance penetration are two standard indicators of the development of insurance industry in an economy. Insurance density is calculated as the ratio of total insurance premiums to the whole population of a given economy, which is essentially the total insurance premiums per capita; insurance penetration is the percentage of the total

[2] We do not use USD in this plot to avoid the influence of the fluctuating CNY/USD exchange rate.

written insurance premiums in the total Gross Domestic Product (GDP) of the economy. According to these two indicators, the Chinese insurance market still significantly lags behind those of the advanced economies. According to Swiss Re Institute (2019), in 2018 the insurance density in advanced markets was USD 3,737 and the insurance penetration was 7.8%. In 2021, according to the data from National Financial Regulatory Administration (NFRA), China's insurance density was only CNY 3,360 (about USD 470), and insurance penetration rate was about 3.9%. Figure 3 compares Chinese insurance market penetration rates with those of other countries and territories. It shows that the Chinese insurance market still significantly lags behind that of other major economies, including the United States, Germany, United Kingdom, France, Italy, Japan, among others.

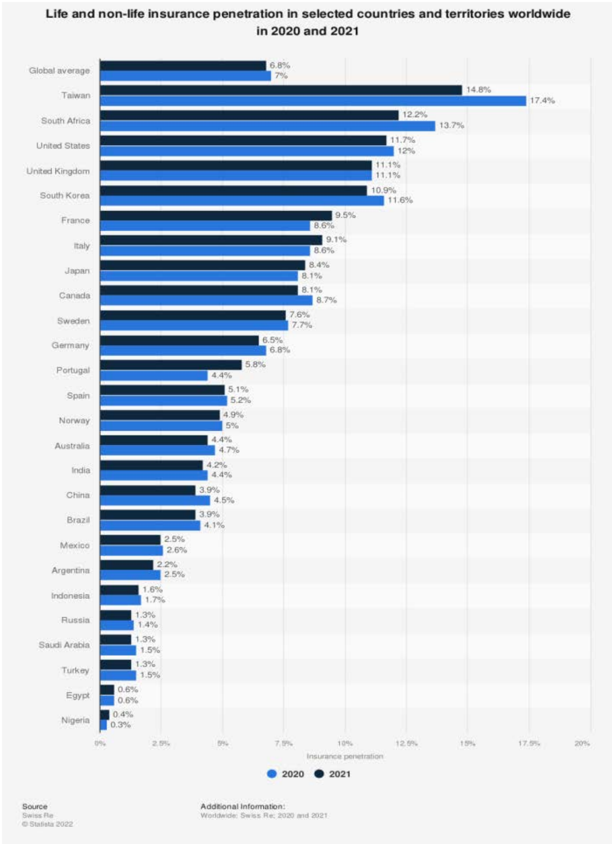

Figure 3. Insurance Penetration Rates in Selected Countries and Regions in 2020 and 2021.

The growth of the Chinese insurance market accounts for a lion's share of the growth of the global insurance market in the past decade. Two of the Chinese insurance companies, Ping An Insurance and China Life Insurance, are among the top five largest insurance companies in the world according to market capitalization (Table 1). In addition, AIA, based in Hong Kong Special Administrative Region (SAR) of China, was the largest life insurance company worldwide by market capitalization as of October 2022.

Table 1. Largest insurance companies worldwide as of September 2022, by market capitalization (in billion USD).

Rank	Company	Market Capitalization	Country/territory
1	UnitedHealth	480.42	United States
2	Elevance Health	108.92	United States
3	AIA	103.52	Hong Kong
4	Ping An Insurance	103.33	China
5	China Life Insurance	102.50	China
6	Cigna	84.75	United States
7	Marsh & McLennan Companies	75.54	United States
8	Chubb	75.39	Switzerland
9	Progressive	71.10	United States
10	Allianz	66.13	Germany
11	Humana	61.61	United States
12	Zurich Insurance Group	60.45	Switzerland
13	Aon	57.77	United Kingdom
14	AXA	52.95	France
15	MetLife	49.34	United States

Source: CompaniesMarketCap.com

Despite the growing importance of the Chinese insurance market in the global landscape, the knowledge of an international audience about its historical development, current status, and future prospects is still rather limited. In the following sections, we aim to provide a comprehensive overview of the Chinese insurance market.

In Section 2, we first provide a brief historical account of the evolution of the insurance industry in China; in Section 3, we describe the regulatory framework of the Chinese insurance industry; in Section 4, we provide the current status of the major insurance sectors in China, including life, non-life, health, and reinsurance markets; in Section 5, we focus on the current market structure of the insurance industry; in Section 6, we present some recent developments in the InsurTech sector; in Section 7, we move to a discussion of the role of social insurance in Chinese households' portfolio of insurance; in Section 8, we provide some speculation on the future development of Chinese insurance industry, and finally in Section 9, we conclude.

2. A Brief History of the Insurance Markets in China

2.1 Insurance Markets in China before 1949

Modern insurance was first introduced to China by foreign traders in southern Chinese port cities. Usually, marine, fire, and life insurance followed the European traders as they demanded protection for cargo, warehouses, and their lives. In 1805, the first insurance company, Canton Insurance Society, was established in Macau, China by two independent British trading houses Dent & Co. and Jardine Matheson & Co. Since then, the insurance system had sprouted in China. In the decades that followed, the Chinese insurance market was dominated by foreign investors.

In 1865, the first Chinese-owned insurance company, Shanghai Yihe Insurance Company, was founded. In 1875, China's first national insurance company, Insurance Merchants Bureau, was established (Wang, 2006). China's defeat in the Sino-Japanese War of 1895 represented a watershed moment which pushed the imperial Qing government towards reforms that led to the development of Chinese businesses, including insurance. Insurance purchase witnessed an uptake in the early decades of the 20th century, as Chinese business gradually adopted modern practices such as commercial documentation for goods in storage or transit, and accounting practices. Insurance became a more important part of the business landscape in this period. From 1916 to 1936, there were somewhere from 31 to 59 insurance companies operating in China (Wang, 2006). One of the most well-known and enduring foreign insurance brands in China is the US-based American International Group (AIG) whose origins can be traced to American Asiatic Underwriters, an insurer that was set up in Shanghai in 1920 by Cornelius Vander Starr who was one of the most important characters in the Chinese insurance industry.

Little is known about the realities of the Chinese insurance business during China's Resistance War Against the Japanese Aggression (1937-1945), but the 1937 Chinese Insurance Yearbook listed all major provinces in China, particularly Shanghai, Guangzhou and Tianjin, as home to some Chinese insurance companies. In 1948, it was reported that 148 insurance companies, including Western companies reestablished after their absence during the war, were operating in Shanghai.

2.2 Insurance Markets in China before 1979

In October 1949 after the founding of the People's Republic of China, People's Insurance Company of China (PICC) was established as a subsidiary of People's Bank of China. However, during the three decades from 1949 to 1979, there was not sufficient recognition of the role of the insurance industry in China, and the insurance industry grinded to a halt. The last foreign insurance company was closed in 1953 as the government first imposed substantial deposit requirements on insurance companies, and then imposed heavy taxation. In 1953, the private Chinese insurance companies were consolidated into Taiping Insurance Co., which was effectively an arm of PICC. During the Great Leap Forward (1958-1962), China's Ministry of Finance ruled that insurance as an independent industry had no place in a communist society, and it closed the PICC. The only commercial insurance institution that managed to survive was the Insurance Department of the Shanghai and Harbin Branches of the People's Bank of China. In 1964, the People's Bank of China reinstated the name of the People's Insurance Company, but the start of the Cultural Revolution in 1966 stopped the revival. By 1969, there had been no commercial insurance including marine insurance in mainland China, and the only agencies that survived were the subsidiaries operating in Hong Kong and Macau. Hong Kong, which was still under British colonial rule, played an important hub for fire and marine insurance with approximately 160 insurers in the 1960s and 1970s.

2.3 Insurance Markets in China after 1979

Since the "reform and opening-up" in 1979, China's insurance industry recovered from its halt and then entered a period of rapid development. The domestic insurance business began to recover in 1980. In 1982, the State Council approved the "Report on the Recovery of the Domestic Insurance Industry and Opinions on its Future Development" by the People's Bank of China (PBOC), affirming the necessity of the existence of insurance and opening businesses such as enterprise property insurance, family property insurance and automobile insurance. In 1985, the State Council adopted "the Interim Regulations on the Administration of Insurance Enterprises", which stipulated the nature and business activities of PICC and established a multilevel insurance system.[3]

[3] Insurance education started in China since the early stage of the Republic of China. According to The Fudan University Catalog and Directory (1920-1921), Fudan University in Shanghai established the first insurance department in 1919, whose curriculum included five courses: Calculus; Mathematical Theory of Interest and Insurance; Principle of Insurance; Property; and Insurance Accounting. As the domestic insurance industry started to recover in 1979, there was a strong demand for talents with trainings in insurance. In the 1980s and early 1990s, a group of universities, such as Central University of Finance and Economics (CUFE), Nankai University, Wuhan University, and Southwestern University of Finance and Economics (SWUFE), were the first to set up insurance majors to train full-time undergraduate students. Along with China's accession to the WTO in 2001, massive entries of foreign insurance companies have been driving the rapid development and continuous innovation of the insurance industry. Thus, new requirements for insurance education were proposed and insurance became one of the popular majors (Li, 2005). By the end of 2021, China's secondary and higher education institutions had 35,612 students pursuing various degrees in insurance, providing a deep pool of talents that can contribute to the further development and innovation of the industry (China Insurance Yearbook Press, 2021).

More insurance companies were established in subsequent years. In March 1988, Ping An Insurance Company, the first joint-stock insurance company in China, was established by the China Merchants Bureau of Shenzhen Shekou Industrial Zone, with its head office based in Shenzhen. In April 1991, the insurance department of the Bank of Communications was separately incorporated as the China Pacific Insurance Company (CPIC) with its headquarter located in Shanghai, and it was the first national comprehensive joint-stock insurance company in China. In September 1992, Ping An Insurance Company changed its name to Ping An Insurance Company of China and expanded its business to the whole country, thus became the third national comprehensive insurance company in China (after PICC and CPIC). Two regional insurance companies, China Tian'an Insurance Company and Dazhong Insurance Company, were established in Shanghai in December 1994 and January 1995, respectively.

In June 1995, China passed its first Insurance Law, which provided the legal environment for further development of the Chinese insurance market. More national and regional Chinese insurance companies were established, which improved both the market vitality and competitiveness.

China's insurance industry has also started to reopen to the world in this era. In September 1992, the American International Assurance Company (AIA), a subsidiary of the American International Group, established a branch in Shanghai with the approval of the PBOC, marking the first step of the re-internationalization of China's insurance market. Sino-foreign joint venture insurance companies were also established. In November 1996, Manulife-Sinochem Life Insurance Co. was established in Shanghai as China's first Sino-foreign joint venture life insurance company. Since then, more foreign insurance companies have opened branches in China, including Fonterra Insurance (Asia) Co., Royal Sun United Insurance Company, Chubb Insurance Company of the United States, Samsung Fire & Marine Insurance Company of South Korea, Mitsui Insurance Company of Japan. More Sino-foreign joint venture life insurance companies were also established, including Allianz China, Pacific Aetna, Jinsheng, China Life CMG., John Hancock Tianan, and CITIC-Prudential (Zhang, 2004).

2.4 Insurance Markets in China after 2000

China joined the World Trade Organization (WTO) in 2001. In 2002, the Insurance Law was revised in response to China's commitments to WTO, followed by other revisions in 2009 and 2015, respectively. Chinese insurance market has grown rapidly during this period, as the regulatory framework was strengthened, and the investment profitability of insurance companies improved. The total written premiums of Chinese insurance market increased from 210.9 billion CNY in 2001 to 1.45 trillion CNY in 2010. China's insurance premium income further increased from 1.43 trillion CNY in 2011 to 3 trillion CNY in 2016. During this period, a number of small and medium-sized insurance companies had made high-profile investments in the capital market and had grown into capital giants by taking advantage of universal insurance, which directly triggered the need for more stringent regulations. From 2017 to 2020, the growth rate of premiums had slowed down significantly, and the insurance industry had gradually focused on the quality improvement instead of rapid market expansion (Wang and Pan, 2022).

3. Regulatory Framework in China

Healthy development of the insurance industry requires commensurate improvement in insurance regulation. The insurance governance of a country consists of two parts: the relevant laws and regulations, and the insurance regulatory authority. In this section, we described the evolution of both parts in China in the post-1979 era.

3.1 China's Insurance Laws and Rules

3.1.1 Insurance Law

There were several milestones in the development of the insurance related laws in China. The first legislative milestone was the adoption of *Maritime Law of the People's Republic of China* on November 7, 1992 in the 28^{th} session of the Standing Committee of the Seventh National People's Congress.

The second legislative milestone was the adoption of *The Insurance Law of the People's Republic of China* on June 30, 1995 in the 14^{th} session of the Standing Committee of the Eighth National People's Congress. This is the first formal basic insurance law and it adopts the insurance regulation laws and insurance contract laws in many western countries and regions. It represents the most significant milestone for the development of the Chinese insurance market.

The third legislative milestone was the amendment of the Insurance Law on October 28, 2002 in the 13^{th} session of the Standing Committee of the Ninth National People's Congress. This amendment was to fulfil the commitments of China's accession to the WTO, and to provide a legal framework for the further development of the insurance industry. It took effect on January 1, 2003. The Insurance Law was again amended substantially on February 28, 2009 in the 7^{th} Session of the Standing Committee of the Eleventh National People's Congress.

These amendments enhanced solvency and corporate governance rules, provided more policyholder protection, and strengthened insurance supervision and administration, etc. Since then, the Insurance Law has been amended twice, in 2014 and 2015 respectively, to further improve some legal provisions (Li and Qiao, 2019).

3.1.2 Other Laws

In addition to the basic law of the insurance industry, other laws such as the Company Law, the Tax Law and the Civil Code, also apply to the insurance companies.

3.1.3 Key Rules and Regulations

Based on the insurance laws, regulatory agencies issued many rules and regulations for the supervision of the insurance companies.

After the promulgation of the Insurance Law in 1995, PBOC issued the *Interim Provisions on the Administration of Insurance Agents* (保险代理人管理暂行规定), the *Interim Provisions on the Administration of Insurance* (保险管理暂行规定) and other regulations, enriching the legal system of insurance supervision.

Following the amendment of the Insurance Law, the State Council issued the *Regulations of the People's Republic of China on the Administration of Foreign-Owned Insurance Companies* (中华人民共和国外资保险公司管理条例) in 2001, the former China Insurance Regulatory Commission issued the *Regulations on the Establishment of Reinsurance Companies* (再保险公司设立规定) in 2002, and amended the *Regulations on the Administration of Insurance Companies* (保险公司管理规定) in 2004. These provided a legal basis for the reform and opening up of the insurance market.

In 2006, the State Council issued *Several Opinions on the Reform and Development of the Insurance Industry* (“Ten National Regulations” 国十条), which further clarified the direction of accelerating the reform and development of the insurance industry.

At the level of administrative regulations, the State Council issued the *Regulations on Compulsory Liability Insurance for Motor Vehicle Traffic Accidents* (机动车交通事故责任强制保险条例) in March 2006. It was the first administrative regulation on compulsory insurance and the first administrative regulation on a specific insurance (namely, auto insurance). In 2012 and 2014, the State Council issued the *Regulations on Agricultural Insurance* (农业保险条例), which effectively promoted the development of the policy-based insurance business (Yanli, 2009; Wang et al., 2011). In addition, the State Council issued

"*Several Opinions on Accelerating the Development of the Modern Insurance Service Industry"* in 2014 ("Ten New National Regulations" 新国十条), which improved the policy environment for further developing the insurance industry.

The former China Insurance Regulatory Commission (CIRC, 1998-2018) and China Banking and Insurance Regulatory Commission (CBIRC, 2018-2023) issued a large number of rules and documents regulating the insurance business and insurance supervision that covered nearly all aspects of the insurance market. These include *Measures for the Administration of Stock Rights of Insurance Companies* (保险公司股权管理办法), *Regulations on the Administration of the Qualifications of Directors, Supervisors and Senior Managers of Insurance Companies* (保险公司董事、监事和高级管理人员任职资格管理规定), *Rules for the Supervision of Insurance Company Solvency* (保险公司偿付能力监管规则), *Measures for the Administration of Affiliated Transactions of Insurance Companies* (保险公司关联交易管理办法), *Measures for the Administration of the Use of Insurance Funds* (保险资金运用管理办法), *Measures for the Supervision of Insurance Sales Practitioners* (保险销售从业人员监管办法), *Measures for the Administration of Insurance Clauses and Premium Rates of Personal Insurance Companies* (人身保险公司保险条款和保险费率管理办法), *Measures for the Administration of Insurance Clauses and Premium Rates of Property Insurance Companies* (财产保险公司保险条款和保险费率管理办法*), Interim Measures for the Supervision of Internet Insurance Business* (互联网保险业务监管暂行办法), etc. These measures provide an important institutional foundation for the development of the insurance industry in China.

3.2 Insurance Regulatory Authority

3.2.1 China Insurance Regulatory Commission (CIRC)

Up till 1998, China's insurance industry had been overseen by the People's Bank of China (PBOC), which is China's central bank. This was changed in November 1998 when the China Insurance Regulatory Commission (CIRC) was established as a ministerial-level institution directly subordinate to the State Council of China. It was charged to uniformly supervise and administer the insurance market throughout the country as well as maintain the legal and stable operation of the insurance industry (Thomas, 2002). In March 2018, the first session of the 13th National People's Congress approved the "Institutional Reform Plan of The State Council," which combined the CIRC and the China Banking Regulatory Commission (CBRC) into the China Banking and Insurance Regulatory Commission (CBIRC).

3.2.2 China Banking and Insurance Regulatory Commission (CBIRC)

Established in 2018, China Banking and Insurance Regulatory Commission (CBIRC) was a public institution directly subordinate to the State Council. Its main responsibilities were to supervise and administer the banking and insurance industries in a unified manner in accordance with laws and regulations, to safeguard their lawful and sound operation, to prevent and defuse financial risks, to protect the legitimate rights and interests of financial consumers, and to maintain financial stability. CBIRC was abolished in February 2023 and its responsibilities were subsumed by the newly established National Financial Regulatory Administration (NFRA).

3.2.3 National Financial Regulatory Administration (NFRA)

The first session of the 14th National People's Congress in March 2023 approved the establishment of the National Financial Regulatory Administration (NFRA), which will be directly subordinate to the State Council and oversee the regulation of the financial industry except the securities sector. It is based on CBIRC and subsumes all the responsibilities of CBIRC; in addition, the supervisory function of the People's Bank of China – China's central bank – of financial groups, as well as certain functions of the China Securities Regulatory Commission (CSRC) is transferred to this new administration. The establishment of NFRA is an important reform of the financial regulatory system of China that is intended to strengthen the overall supervision of China's financial system with an enhanced ability to manage financial risks, and to investigate and punish financial violations.

3.2.4 People's Bank of China

The People's Bank of China (PBOC) is China's central bank. It is a ministry level institution subordinate to the State Council. PBOC undertakes the relevant work of the Office of the Financial Commission and accepts the overall planning and coordination of the office, and implements the guidelines, policies, decisions, and arrangements of the Chinese Communist Party Central Committee on Financial Work.

3.2.5 China Insurance Industry Association

Established on February 23, 2001, the China Insurance Industry Association (CIIA) is a national self-regulatory organization of China's insurance industry approved by the China Insurance Regulatory Commission. It cooperates with the insurance regulatory authorities to urge members to be self-disciplined, to safeguard the interests of the industry, to promote the development of the industry, to provide services for members, to promote the market to be open and fair, and to comprehensively improve the insurance industry's ability to serve the national economy.

3.3 Key Regulatory Issues

Following the core principles of International Association of Insurance Supervisors (IAIS), the Chinese insurance regulatory authorities, starting from CIRC, have established three pillars of regulation: market behavior, solvency and corporate governance. In this subsection, we describe each pillar in turn.

3.3.1 Market Behavior Regulation

Market behavior regulations in the insurance industry in China include a set of rules and guidelines that aim to promote fair and transparent market practice, to protect consumer rights, and to ensure the stability and soundness of the insurance industry. There are many regional differences in insurance regulation and supervision in China (Chen et al., 2014), with the more developed provinces in the East taking the lead in modernizing insurance regulatory practices.

The NFRA (or its predecessor CBIRC) is the regulatory authority responsible for overseeing the insurance industry in China, and it has issued a number of regulations and guidelines related to market behaviors in the industry. Some of the key aspects of market behavior regulations in the Chinese insurance industry include:

- **Prohibition of unfair competition:** The NFRA prohibits insurance companies from engaging in unfair competition practices, such as offering excessively high commission rates or engaging in discriminatory pricing.
- **Consumer protection:** The NFRA requires insurance companies to provide clear and accurate information to consumers about the products and services they offer, including details about premiums, coverage, and exclusions. The NFRA also requires insurance companies to establish internal mechanisms for handling consumer complaints and disputes.
- **Risk management:** The NFRA requires insurance companies to have robust risk management policies and procedures in place, including systems for monitoring and managing various types of risks, such as credit risk, liquidity risk and operational risk.
- **Disclosure requirements:** The NFRA requires insurance companies to disclose certain information about their financial condition, such as their solvency ratios and

capital adequacy ratios. Insurance companies are also required to disclose information about their ownership structure, board of directors and key executives.

- **Anti-money laundering:** The NFRA requires insurance companies to establish anti-money laundering policies and procedures in accordance with applicable laws and regulations.

The NFRA regularly reviews and updates these regulations to ensure that they remain relevant and effective in a rapidly changing market environment.

3.3.2 Solvency Regulation

In 2003, China Insurance Regulatory Commission (CIRC) issued the "*Solvency Regulation Rules of Insurance Companies*." These rules set out the minimum solvency requirements that insurance companies must meet to ensure their financial stability and ability to pay claims.

Under the Solvency Regulation Rules, insurance companies are required to maintain a minimum solvency ratio of 100%. This means that the company's assets must be at least equal to its liabilities, including the value of all obligations to policyholders. Insurance companies are also required to maintain a minimum paid-up capital of CNY 200 million (approximately USD 31 million) for property and casualty insurance companies and CNY 500 million (approximately USD 77 million) for life insurance companies.

In addition to the solvency requirements, the Solvency Regulation Rules also set out other financial requirements, such as the minimum ratio of net premiums to capital and the maximum ratio of underwriting risk to capital. These requirements are designed to ensure that insurance companies maintain a sound financial position and can meet their obligations to policyholders.

The Solvency Regulation Rules also establish a system for monitoring and supervising the solvency of insurance companies. Insurance companies are required to submit regular solvency reports to the CIRC and undergo regular inspections to ensure compliance with the regulations. The CIRC has the authority to take enforcement actions against companies that fail to meet the solvency requirements or violate the regulations. The Solvency Regulation Rules were amended multiple times, especially in 2005 and 2008.

China fully implemented Risk-Oriented Solvency System (C-ROSS) in 2016, which changed the solvency supervision from scale-oriented supervision to risk-oriented supervision. This system expands the quantitative and qualitative solvency supervision indicators by incorporating core solvency adequacy ratio, comprehensive solvency adequacy ratio, and risk rating, and performs multi-level supervision. It divides the core and subsidiary capital of insurers into first and second levels respectively. The minimum capital calculation comprises the capital for quantifiable risks based on the Comprehensive Factor Method and the capital for unquantifiable risks based on the Solvency Risk Management Capability Regulatory Assessment (SARMRA). Moreover, Comprehensive Risk Rating (IRR) give a qualitative risk assessment on insurers based on quantifiable and unquantifiable risks. C-ROSS provides different incentives to different insurers. Fung et al (2018) found that under C-ROSS, the solvency position of life insurers specializing in writing long-term traditional life products with heavy protection elements improves, while the solvency position of life insurers specializing in writing short-term endowments and high cash value products deteriorates.

In December 2021, CBIRC issued the "*Solvency Regulation Rules of Insurance Companies (II)*" (**中国银保监会关于实施保险公司偿付能力监管规则, II, henceforth Rule II below)**, which was the current solvency regulation for insurance companies in China. Rule II improves the measurement method of interest rate risk, optimizes the permissible asset classes and their evaluation methods for hedging interest rate risk, and guides insurance companies to better practice asset-liability matching. Rule II improves the actual capital and minimum capital measurement standards for long-term equity investments, greatly increases the risk factor, implements 100% full capital deduction for long-term equity investments (subsidiaries) with control rights, and encourages insurance companies to focus on their main business.

3.3.3 Corporate Governance Regulations

Chinese insurance regulatory authorities issued two corporate governance regulations on insurance companies. The first regulation was issued in 2006 by CIRC in a document titled "*Guiding Opinions Regulating Governance Structure of Insurance Companies (for Trial Implementation),"* which was revised several times including a revision in 2019 ;[4] and the second major regulation was issued by CBIRC in June 2021 and it is titled "*Corporate Governance Rules of Banking and Insurance Institutions* (银行保险机构公司治理准则, 2021 Rules). The 2021 Rules supersedes the 2006 rule for insurance companies, as well as the 2013 rules on commercial banks issued by then China Bank Regulatory Commission titled "Corporate Governance Guidelines on Commercial Banks," with the aim of consolidating the existing separate regulatory regimes for insurance and banking institutions

[4] Li et al (2017) showed that the 2006 regulation on governance structure of insurance companies has significantly improved the governance effectiveness of China's insurance companies, though they did not find any positive effect of the strict corporate governance regulations on profits.

respectively into one unified regime.[5]

The key provisions of the 2021 Rules are as follows. First, the 2021 Rules confer new powers on shareholders' meetings and boards of directors, in addition to the existing statutory powers conferred to the shareholders by Chinese Company Law. For example, shareholders' meetings must review and approve proposed stock incentive plans; these powers may not be delegated; at least two-thirds of all board of directors in a duly convened meeting must affirm proposed profit distributions; renumeration plans; material investment and asset disposals; appointment and dismissal of senior management personnel; and capital replenishment plans. The board also must establish a shareholder-company dispute resolution mechanism. In general, those board powers also cannot be delegated, unless delegation is necessary and is done on a case-by-case basis. Second, the 2021 Rules set out rules regarding the nomination of directors and independent directors. Third, the 2021 Rule specifies the composition of the supervisory board and supervisors' nomination, which generally reflect the existing regimes that have been applied in the banking sector. Fourth, the 2021 Rules expressly prohibit the chairman of the board of directors of banking and insurance institutions from concurrently holding office as the president (i.e. CEO or general manager) of the same institution.
This is a much stricter requirement imposed on the banking and insurance sectors than other, unregulated, sectors. Fifth, there is renewed emphasis in the 2021 Rules on the leadership role of the China Communist Party, which differentiates the state-owned banks and insurance companies from privately owned counterparts. Sixth, the 2021 Rules stipulate various duties and obligations of shareholders which, e.g., require major shareholders (i.e. those holding no less than a 5% stake or voting rights, or otherwise having a significant influence over the company's operation) to provide a long-term written commitment that they will provide capital replenishment to the banking and insurance institution when necessary. Seventh, the 2021 Rules require the relevant institutions to include certain statutory provisions in their articles of association. For example, the articles of association must provide for the composition and duties of shareholders' meetings, the board of directors, the supervisory board and senior management, and specify the respective rights and obligations of the relevant banking and insurance company, as well as its shareholders, directors, supervisors and senior management personnel.

[5] For a reference, see
https://www.nortonrosefulbright.com/en/knowledge/publications/a84293ea/cbirc-issues-new-corporate-governance-rules

4. Insurance Markets in China

China solidified its position as the second-largest insurance market globally in 2017, with total premiums reaching 575 billion USD. Its insurance market had undergone remarkable changes in terms of size and structure in the past decade. However, China's insurance market development in terms of density and penetration is still lower than the global average. As mentioned in the introduction, in 2021, China's insurance density was only CNY 3,360 and insurance penetration rate was 3.9%, according to data from NFRA.

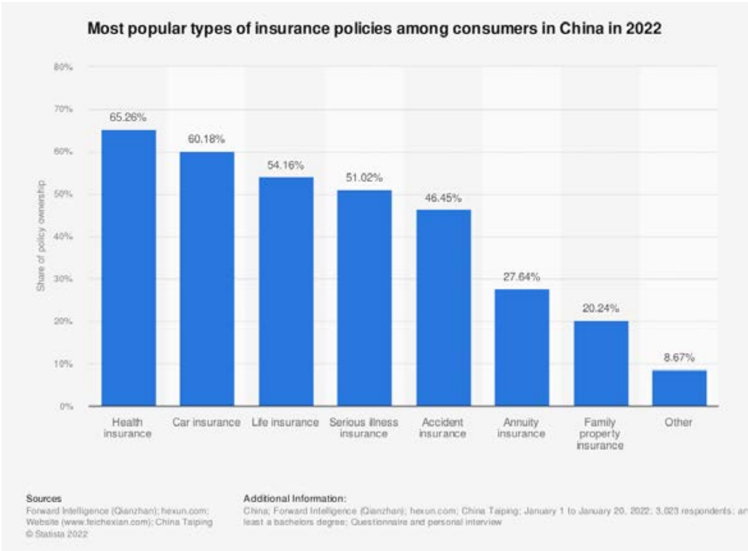

Figure 4. Most Popular Insurance Products in China.

The most popular types of insurance policies in China in 2022, according to market research firm Forward Intelligence, were health insurance (with a 65% ownership among the survey respondents), followed by car insurance (60%), life insurance (54%) and serious illness insurance (51%). Notably, family property insurance (i.e., homeowner insurance) ownership rate is only 20%, in contrast to the United States where 93% of homeowners own property insurance (in 2020). In this section, we provide a detailed discussion of various segments of the insurance market in China, including life insurance, nonlife insurance, health insurance and the reinsurance market.[6]

4.1 Life Insurance Market

The Chinese life insurance market became the world's second largest one in 2017. According to NFRA, the Chinese life insurance market generated total gross written premiums of CNY

[6] We follow the convention and do not include health insurance as a part of the life/annuity sector. Health insurance is discussed in Section 4.3 as a separate line of business.

2,357.2 billion ($328.8 billion) in 2021. Figure 5 shows that the life insurance premiums has grown rapidly in China from 2012 to 2021, achieving a compound annual growth rate of 11.4% in the decade. The life insurance market is dominated by traditional and participating life insurance products, with market shares of 48.9% and 50.2% in 2020, respectively.[7] Equity-linked life insurance and universal life insurance are not fully developed, with a combined market share of no more than 2% (Figure 6).[8]

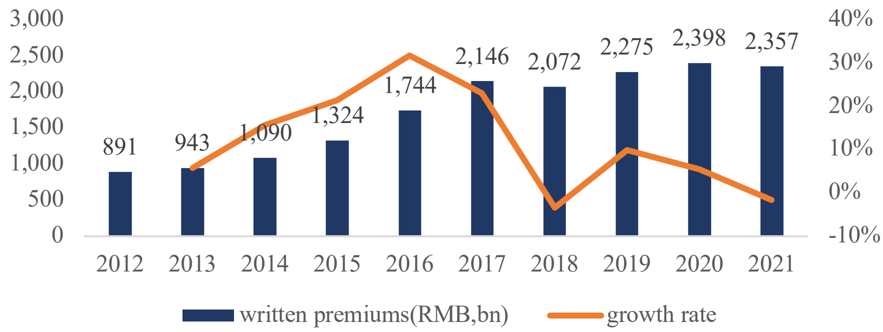

Figure 5. Life Insurance Premiums and Growth Rate: 2012-2021.

Source: China National Financial Regulatory Administration.

[7] *Traditional life insurance*, also known as *non-participating life insurance*, is a type of policy that offers a guaranteed death benefit and a fixed premium. The premium paid by the policyholder is used to cover the cost of insurance and build cash value over time. The policyholder is not entitled to any share of the insurer's profits or earnings beyond the guaranteed benefits of the policy. *Participating life insurance*, on the other hand, is a type of policy that offers both a guaranteed death benefit and a potential share of the insurer's profits through policyholder dividends. These dividends are paid out to policyholders based on the performance of the insurer's investments and the overall profitability of the policyholder pool.

[8] *Equity-linked life insurance*, also known as *unit-linked life insurance*, is a type of policy that combines life insurance coverage with investment in equity or bond markets. The policyholder pays premiums, which are invested in a variety of assets according to the policyholder's preferences and risk appetite. The policyholder bears the investment risk, but also has the potential for higher returns based on the performance of the underlying investments. The death benefit of an equity-linked policy is typically linked to the value of the underlying investments. *Universal life insurance*, on the other hand, is a flexible type of permanent life insurance that combines a death benefit with a savings component. The policyholder pays premiums, which are invested by the insurance company in a variety of assets. The policyholder can also adjust the amount and timing of premium payments, as well as the death benefit, within certain limits. The savings component of a universal life policy earns interest, which is credited to the policyholder's account.

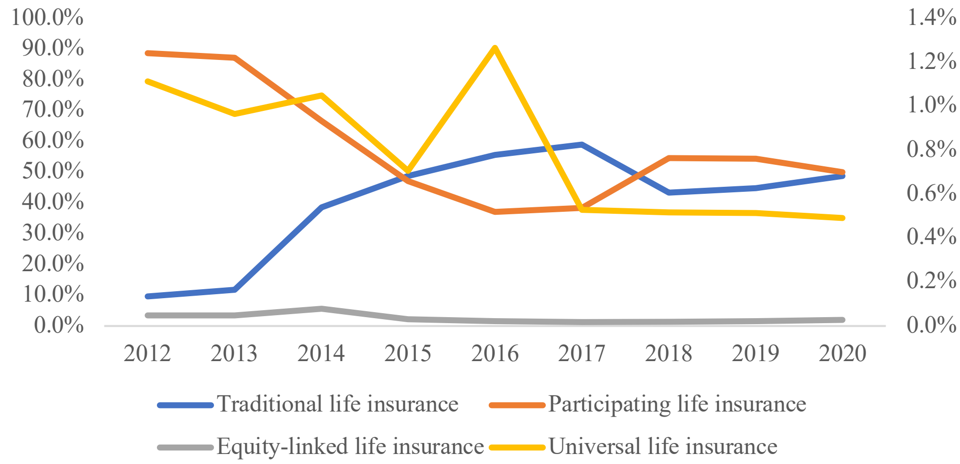

Figure 6. Market Share of Different Types of Life Insurance

Source: Insurance Statistics Yearbook 2013-2021.

Notes: The left scale is for the traditional and participating life insurance and right scale is for equity-linked and universal life insurance.

Within the life insurance, the annuity market in China is still in its early stages of development. According to data from NFRA, the total premiums for annuity products sold in China in 2020 was approximately 430 billion CNY (about 66 billion USD). This represents a significant increase compared with the number in previous years, but it is still relatively small compared to other major markets such as those in the US and Japan. According to the insurance product information from the Insurance Association of China (IAC), there are 4,368 annuity products in China at present, of which 818 are old age annuities and 3,550 are short-term annuities;[9] 1858 are traditional products, while 2,510 are new products.[10]

However, the Chinese government has started to promote the development of the annuity market as part of its efforts to address the aging population problem and the increasing

[9] *Short-term annuity* refers to an annuity product that provides a guaranteed stream of income for a fixed period of time, typically ranging from one to ten years. *Old-age annuities* provide annuity income for life.

[10] *Traditional annuity products* provide a guaranteed stream of income for life, in exchange for a lump-sum payment or a series of payments made by the policyholder. The insurer invests the premiums collected from policyholders in a variety of assets, such as bonds and stocks, to generate returns that will be used to pay out the guaranteed income stream. The income paid out to the policyholder is typically fixed and does not change, regardless of market conditions. *New annuity products*, on the other hand, offer more flexibility and customization to policyholders. These products may offer a range of income options, including fixed and variable income streams, as well as options for policyholders to receive lump-sum payments or withdraw their funds in case of emergency. New annuity products also offer more investment choices, allowing policyholders to choose from a wider range of underlying assets, including equities and alternative investments. This means that the income paid out to policyholders may be subject to market fluctuations and may change over time.

demand for retirement income products. In 2021, the government introduced new policies to encourage insurers to develop and offer more diversified annuity products to consumers. Therefore, it is expected that the annuity market in China will continue to grow in the coming years as more consumers seek retirement income solutions, and more insurance companies develop and offer innovative annuity products to meet this demand.

The studies on life insurance in China mainly focused on the determinants of life insurance demand and lapse behaviors. For example, one-child policy (Hwang and Gao, 2003), financial literacy (Wang et al., 2021) and human capital protection (Shi et al., 2015) have been shown to be the factors that drive the demand for life insurance in the Chinese market, while unemployment of the policyholder and insurer reputation loss (Yu et al., 2019) were shown to be factors that are related to the lapsation of life insurance policies in China.[11]

4.2 Nonlife Insurance Markets

Nonlife insurance, also called property and casualty insurance, consists of the general insurance market segmented into auto, property, liability, and other insurance. In recent years, China's nonlife insurance market has benefited from rising household income, rapid urban economic expansion, and the expanding middle class, as well as an increase in the insurance penetration rate of the country. According to NFRA, the Chinese nonlife insurance market had total gross written premiums of CNY 1167 billion ($190.7 billion) in 2021, representing a compound annual growth rate of 9.1% between 2012 and 2021 (Figure 7). Among the different types of nonlife insurance segments, auto insurance dominates the nonlife insurance market, accounting for approximately 67% of the market in 2021 (Figure 8). This is related to two factors. First, automobile ownership rates have risen rapidly in China. According to the National Bureau of Statistics of China, as of December 2022, 43.5% of the Chinese households own at least one car. Second, since 2006 the Chinese government has mandated liability insurance for all registered automobiles.

[11] Fang and Kung (2020) showed that in the United States, income, health, or bequest motive shocks all contribute to the lapsation life insurance policies, with income and health shocks being relatively more important than bequest motive shocks in explaining lapsation when policyholders are young, and bequest motive shocks playing a more important role as policyholders age. Still a lot of lapsations are driven by idiosyncratic reasons unrelated to income, health or bequest motive shocks.

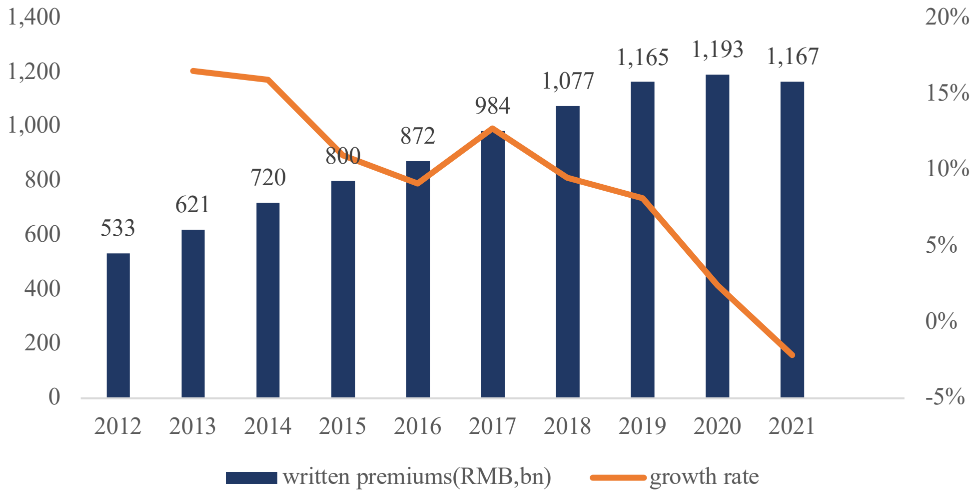

Figure 7. Nonlife Insurance Premiums and Growth Rate

Source: China National Financial Regulatory Administration.

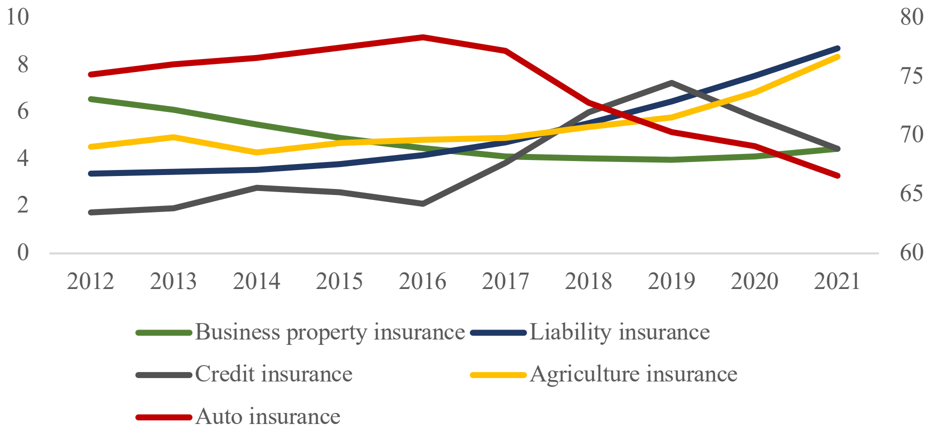

Figure 8. Market Share of Different Types of Nonlife Insurance

Source: China National Financial Regulatory Administration.

Notes: Auto insurance is plotted against the right scale and all the other insurance categories on the left scale.

4.2.1 Auto Insurance Market

The Chinese auto insurance market can be classified into two types: compulsory liability insurance for traffic accidents and commercial motor insurance. Auto insurance typically covers property, liability, and medical expenses. During 2012 to 2021, the compound annual growth rate of the market was 7.6%. The academic literature on the auto insurance market in China provides ample empirical evidence for the presence of severe adverse selection and moral hazard problems (Gao et al., 2017; Zheng et al., 2022).

However, on September 3, 2020, the BIRC issued the *Guiding Opinions on Implementing Comprehensive Reform of Auto Insurance*. The objective was to leverage the decisive role of the market in allocating the auto insurance resources, and to minimize government's direct supervision. The reform also increased the total liability limit for compulsory traffic insurance and extended coverage to new areas such as liability against robbery, earthquakes, and waterlogged engines. The new guidelines also removed certain provisions such as accident liability deductible ratios and liability exemption clauses, which could lead to claims disputes.

While consumers have welcomed the expansion of coverage and the lowering of insurance premiums for mandatory auto insurance, some commercial auto insurance products have been withdrawn from the market due to new premium pricing rules. As a result, the total gross written premiums of the auto insurance market in 2021 were CNY 777.3 billion ($108.4 billion), equivalent to 66.6% of the overall market value, showing a downward trend (see Figure 8).

4.2.2 Liability Insurance Market

Liability insurance was firstly introduced in China in 1980 and segmented as follows: general liability insurance, product liability insurance, public liability insurance, and employer liability insurance. The liability insurance market in China is developing slowly: its total premiums were CNY 101.8 billion ($14.2 billion) in 2021, with a compound annual growth rate of 19.3% from 2012 to 2021. The premiums were considerably lower than those in developed economies such as the US and the UK, only accounting for 8.7% of the total nonlife insurance market in China (Figure 8).

The academic literature on China's liability insurance market shows evidence of significant moral hazard. For example, Chen et al. (2022) found that Chinese firms increased their pollution emission after purchasing environmental liability insurance coverages; Jia and Tang (2018) found that purchasing directors' and officers' liability insurance is negatively correlated with the attendance of independent directors.

4.2.3 Agricultural Insurance Market

In China, agricultural insurance is highly supported by the Chinese government due to the government's emphasis on food security and social stability. Currently, China's agricultural insurance covers more than 280 crop varieties in all provinces of the country. In addition to farming, it also involves forestry, poultry, and fishing. In 2021, the total premiums of agricultural insurance were approximately CNY 97.6 billion (about $13.6 billion), with a 16.8% annual compound growth rate from 2012 to 2021 (Figure 8). The main types of agricultural insurance in China are policy-supported agricultural insurance and commercial agricultural insurance. The Chinese government subsidizes policy-supported agricultural insurance; it covers most kinds of crops, but the payment of claims is relatively low. Commercial agricultural insurance mostly targets crops with high economic value. Agricultural insurance plays an important role in disaster mitigation, insuring the income of farmers against weather-, disease- and insect-related losses, and ensuring agricultural production safety. Okhrin et al. (2013) found that its risk diversification effects depend on the risk type.

4.3 Health Insurance Market

Almost every insurance company in China, regardless of its main line of business, is allowed to provide health insurance. The difference is that property and casualty insurers can only provide short-term health insurance policies, while life and health insurers can provide both long- and short-term policies. Life insurers, particularly domestic life insurers, currently dominate China's health insurance market by leveraging their large distribution networks.

From 2012 to 2021, the premium income of China's health insurance increased rapidly from CNY 86.3 billion ($12.1 billion) to CNY 844.7 billion ($117.9 billion) (Figure 9), with a compound annual growth rate of nearly 30%. There is a broad consensus that China's commercial health insurance market has much room to grow in the foreseeable future.

医疗保险、疾病保险、失能收入损失保险、护理保险以及医疗意外保险

There are five main types of products offered by commercial health insurance companies in China: critical illness insurance (疾病保险), medical insurance (医疗保险), disability income insurance (失能收入损失保险), long-term care insurance (护理保险), and medical accident insurance (医疗意外保险).[12] Currently, critical illness products are the most prominent, accounting for about 55% of the total commercial health insurance premium, while medical reimbursement insurance products account for approximately 30%.

[12] See CBIRC: http://www.gov.cn/xinwen/2019-11/13/content_5451534.htm

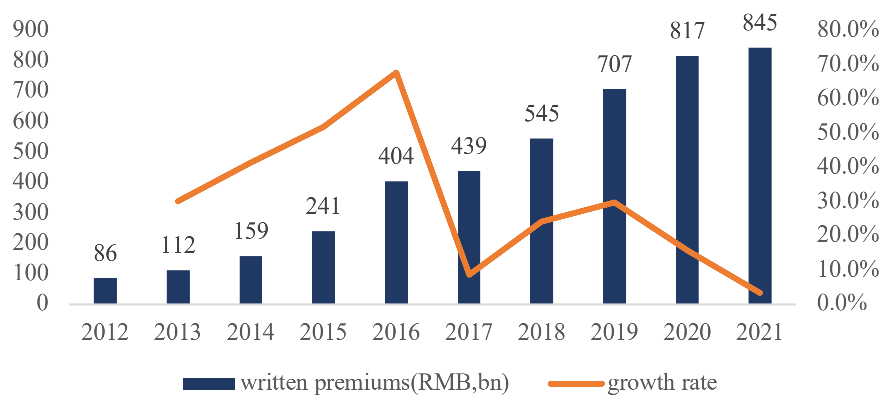

Figure 9. Health Insurance Premiums and Growth Rate

Source: National Financial Regulatory Administration

4.3.1 Critical Illness Insurance (CII)

The health insurance market in China is dominated by critical illness insurance (CII), which accounted for about 55% of the market in 2021, with total premiums of CNY 457.5 billion ($63.8 billion). The CII market has experienced a compound annual growth rate of 24.5% from 2016 to 2021, making it a key component of the health insurance industry.

However, the sustainability of the CII business model is being challenged by a set of long-term adverse trends. The incidences of critical illnesses are unpredictable, and the complexity of the products is making CII business operations and risk management increasingly difficult. Moreover, structural issues at the market level, such as the overall insufficient health protection for the society and the uneven protection for different groups of consumers, pose challenges to the sustainable development of the CII insurance market. Additionally, there is strong similarity across CII products, with little diversification in product features. Wagstaff and Lindelow (2008) found that China's CII market also suffers from severe moral hazard problem. The growth of CII insurance is expected to come from market segments that are not yet well covered, and insurers will need to adopt more differentiated product features and innovation.

4.3.2 Commercial Medical Insurance

There are various types of medical insurance available to cater to people's insurance needs at all income levels, including City Supplemental Medical Insurance (CSMI), Million Medical Insurance (MMI), and High-End Medical Insurance. The coverage becomes more comprehensive, and the experience gets better for higher-tier medical insurance. CSMI has gained popularity due to its low premium and high benefits, leading to an increasing number of enrollees. As of the end of 2022, 263 CSMI products have been introduced in 29 provinces, with the covered area and population continuously expanding. MMI has experienced rapid market growth since its first launch, offering wider coverage and higher reimbursement than CSMI. It covers most inpatient medical expenses, including those not covered by basic medical insurance. High-end medical insurance provides access to top medical resources worldwide and is the preferred choice for high-net-worth individuals. Research has shown that the medical insurance demand is affected by some China specific factors such as air pollution (Chang et al., 2018).

4.3.3 Long-Term Care (LTC) Insurance

To address the growing societal need of the aging population, the government has been promoting reforms to improve the long-term care (LTC) infrastructure. It has launched pilot programs for LTC insurance protection schemes in selected cities, aiming to establish a nationwide LTC insurance scheme during the 14th Five-Year-Plan (2021 to 2025) period. This pilot program has been assessed to have contributed to the smoothing of household consumption (Liu et al., 2023).

There are two types of LTC insurance: public-sector LTC insurance and commercial LTC insurance, offered by the government and insurance companies separately. A public-sector LTC insurance pilot scheme was initiated in 2016 but has not yet been rolled out nationwide. According to the National Healthcare Security Administration of China (NHSAC), 49 cities were permitted to provide LTC insurance by the end of 2021; approximately 140 million people participated in public-sector LTC insurance, with a cumulative number of 1.6 million people receiving benefits that averaged more than CNY 15,000 ($2,092) per capita. By comparison, the commercial LTC insurance market in China is small, with total gross written premiums of only CNY12.3 billion,[13] accounting for approximately 1.5% of the total health insurance market premiums in 2020.

4.4 Reinsurance Market

The reinsurance market in China had been growing steadily in recent years, driven by increasing demand for risk management solutions and the Chinese government's initiatives to support the development of the insurance industry. CBIRC had implemented policies to encourage foreign reinsurers to enter the market and to support the growth of domestic reinsurers.

According to a report by Swiss Re, the reinsurance market in China grew by 8.5% in 2020, outpacing the global reinsurance market's growth rate of 5.5%. The report also highlighted

[13] Data from the National Insurance Industry Communication Club (NIICC).

that China is the world's fourth-largest reinsurance market and the second largest one in the Asia-Pacific region, behind Japan. According to NFRA, at the end of 2021, the total assets of reinsurance companies were CNY 605.7 billion ($84.6 billion) (Figure 10), and the annual compound growth rate was 12.5% from 2013 to 2021.

In recent years, China has also established several reinsurance hubs, such as the Shanghai International Insurance Hub and the Beijing-Tianjin-Hebei Insurance Exchange, to promote the development of the reinsurance market.

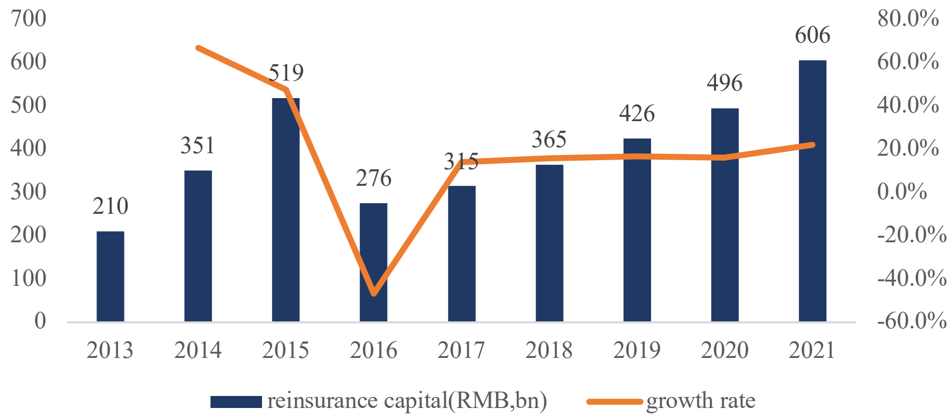

Figure 10. Reinsurance Capital and Growth Rate

Source: National Financial Regulatory Administration

5. Market Structure of Chinese Insurance Market

5.1 Insurance Market

5.1.1 Ownership Structure of the Insurance Industry in China

The number of registered insurance companies in China has steadily increased in the last decade (Figure 11). As of the end of 2020, there were 245 insurance companies, including 12 insurance groups, 88 property insurance companies, 14 reinsurance companies, 76 life insurance companies, 10 pension insurance companies, 7 health insurance companies, 33 insurance asset management companies, and 5 other companies (Figure 12). In addition, there were 2,639 professional insurance intermediaries nationwide, including 5 insurance intermediary groups, 1,764 professional insurance agencies, 497 insurance brokers, and 373 insurance adjusters. There were approximately 8.44 million registered individual insurance agents nationwide.

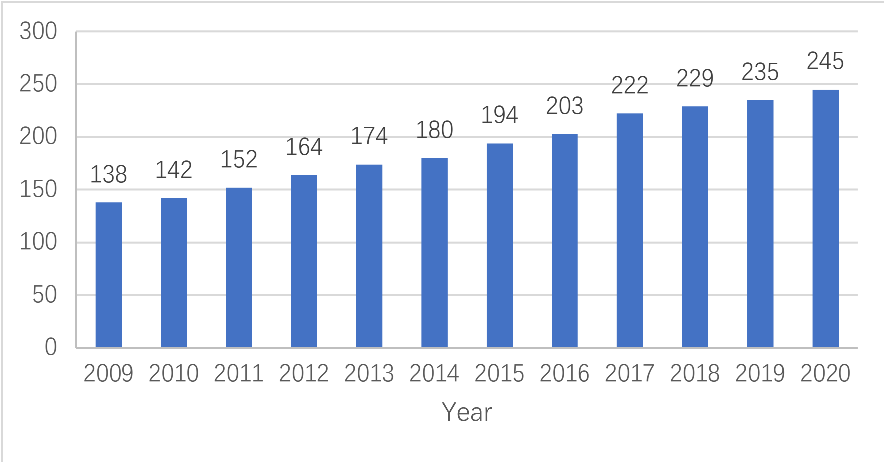

Figure 11. Number of insurance companies in China from 2009 to 2020

Among the 245 insurance companies as of December 2020, 66 are foreign or Sino-foreign joint venture insurance companies. In addition, there are 117 foreign representative offices, and 17 foreign professional insurance intermediaries. In 2020, the original insurance premium income of foreign insurance companies was CNY 352.44 billion ($49.19 billion), accounting for a market share of 7.8%.

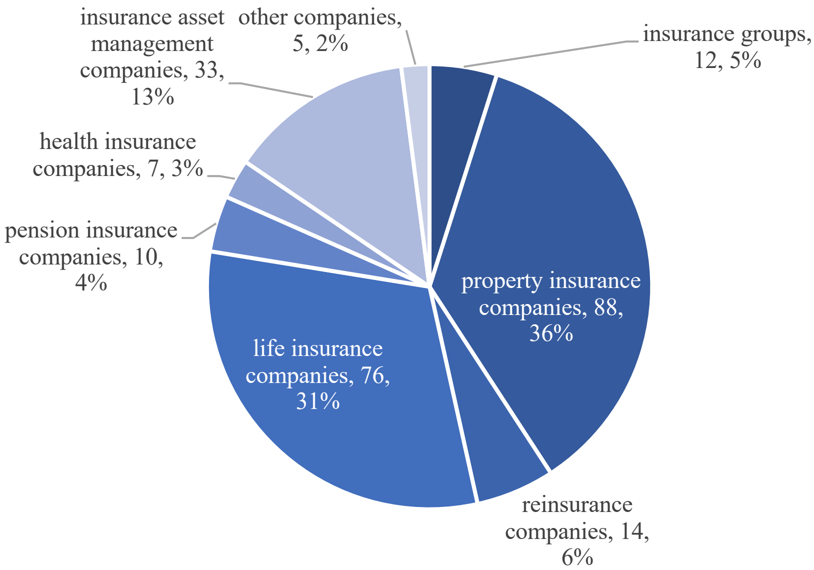

Figure 12. Insurance Institutions in China as of 2020

Source: National Financial Regulatory Administration.

5.1.2 The Structure of Life and Nonlife Insurance Markets

By the end of 2020, the top 10 life- and nonlife insurance companies in China were all Chinese controlled, with combined market shares of 69.9% and 85.5%, respectively (Tables 2 and 3). Foreign or Sino-foreign joint venture insurers (in both life and nonlife insurance) accounted for only slightly more than 2% of the market share.

The top 5 life insurance companies in China ranked by premium incomes in 2020 were China Life, Pacific Life, Ping An Life, New China Life, and Taiping, and they had a combined market share of 54.3%. The foreign insurer ICBC-AXA had the highest market share among foreign life insurers, but it accounted for only 1.6% of the market share (Table 2).

The top 5 nonlife insurance companies ranked by premium incomes in 2020 were PICC, CPIC, Ping An General Insurance, China Life, and China United Property Insurance, and they had a combined market share of 74.6%. The foreign insurer AXA Tianping had the highest market share among all foreign nonlife insurers, with a market share of 0.6% (Table 3).

Table 2. Life insurers ranked by 2020 premiums in China

Type	Rank	Company	Market Share
Chinese Insurers	1	China Life	20.8%
	2	Ping An Life	16.1%
	3	China Pacific Life	7.1%
	4	New China Life	5.4%
	5	Taiping	4.9%
	6	Taikang	4.9%
	7	PICC	3.3%
	8	China Post Life Insurance	2.8%
	9	Qian Hai Life	2.7%
	10	Funde Sino Life	2.1%
Sino-foreign JV	14	ICBC-AXA	1.60%

Source: Insurance Statistics Yearbook 2021

Table 3. Nonlife insurers ranked by 2020 premiums in China

Type	Rank	Company	Market Share
Chinese Insurers	1	PICC	32.1%
	2	Ping An	21.3%
	3	CPIC	10.9%
	4	China Life	6.4%
	5	China United Property Insurance	3.9%
	6	China Continent	3.5%
	7	Sunshine	2.8%
	8	Taiping	2.1%
	9	Zhongan Online	1.2%
	10	China Export & Credit	1.2%
Sino-foreign JV	16	AXA Tianping	0.6%

Source: Insurance Statistics Yearbook 2021

5.2 Insurance Assets

As of the end of 2021, data from NFRA indicated that the total assets of insurance companies in China amounted to CNY 24,887.4 billion ($3,473.8 billion), with a compound annual growth rate of 14.5% from 2012 to 2021. Among these companies, non-life insurance companies' total assets were CNY 2,451.3 billion ($342.2 billion), life insurance companies' total assets were CNY 21,389.5 billion ($2,985.6 billion), reinsurance companies' total assets were CNY 605.7 billion ($84.6 billion), and asset management companies' total assets were CNY 103 billion ($14.4 billion). The net assets of insurance companies were CNY 2,930.6 billion ($409.1 billion).

In terms of how the assets of the Chinese insurance companies are invested, data from NFRA indicates that, as of the end of 2021, bank deposits accounted for 11.3% at CNY 2,167.9 billion ($302.6 billion), bonds accounted for 39% at CNY 9,068.3 billion ($1,265.8 billion), and stocks and securities investment funds accounted for 12.7% at CNY 2,950.5 billion ($411.84 billion). According to the Insurance Asset Management Association of China (IAMAC), insurance companies have become the largest institutional investor in the Chinese mutual fund market, the second largest in the stock market, and the third largest in the bond market. As a result, insurance capital management institutions have become an increasingly important force in China's financial and capital markets.

5.3 Market Imperfections

In this section, we describe some of the main imperfections of the Chinese insurance market.

5.3.1 Issues of the Insurance Market Structure

First, the direct insurance market in China is highly concentrated. The combined market shares of top 5 insurers in both the life and nonlife market are over 50%, which creates barriers of entry for new companies. Second, the development of the reinsurance market is insufficient. Despite the rapid growth of China's direct insurance market, the development of the reinsurance market as a means of transferring insurance risk and stabilizing insurance companies' operations is still seriously lagging (see Section 4.4). Third, there are key constraints on foreign insurance companies' market development in China. Deloitte (2020) emphasized two long-standing barriers for foreign insurance companies doing business in China: obtaining the required insurance licenses and building nationwide sales channels. The Chinese government has historically maintained strict control over the insurance industry, and foreign insurers are subject to more regulatory scrutiny and requirements than their domestic counterparts. Foreign insurers also face significant language and cultural barriers, which make it difficult for foreign insurers to understand the local market and effectively communicate with potential customers. In addition, the lack of transparency in the regulatory process and limited access to China specific data can make it difficult for foreign insurers to fully understand the risk profiles and opportunities of the Chinese market.

5.3.2 Lack of Insurance Product Varieties

Currently, most insurance companies offer similar dominant insurance products. When one insurance company introduces a popular product, other companies quickly imitate it, often by simply changing the name or making slight modifications of it in terms of insurance coverage amount. This has resulted in a market where many insurance products are homogenous, with few options available for consumers to choose so as to meet their unique needs.

5.3.3 Problems with the Management of Insurance Assets

The insurance industry in China faces several risks related to asset-liability matching and liquidity management. The first is the asset-liability mismatch risk. The nature of insurance liabilities requires that funds must be matched with payment requirements in terms of maturity and size. Generally, life insurance funds should be invested in long-term and safe assets that match their long-term payment requirements, while property and casualty insurance funds should be invested in short-term and liquid assets. However, the lack of medium- and long-term investment products with stable returns exposes the insurance industry, especially the life insurance industry, to high asset-liability mismatch risks.

The second is the liquidity risk. The liquidity of the asset holdings of an insurance company depends on the liquidity of the asset market, which tends to be poor in China. The need to sell assets such as outstanding bonds at low prices or to raise high-cost funds in the market on an ad hoc basis to meet payout needs could seriously impact the stability of an insurance company's operation.

In addition, there are other risks associated with the management of insurance assets, such as interest rate risk and credit risk. These risks must be carefully managed to ensure the stability and long-term viability of the insurance industry in China.

5.3.4 Lack of Insurance Literacy

As we discussed in Section 2, commercial insurance business ceased to operate in China in 1959 and China did not have a commercial insurance industry for 20 years after that. As a result, compared to people in other countries, Chinese people have less awareness of risk and may not fully understand the importance of insurance. Additionally, insurance products are often highly specialized, making it difficult for consumers with limited education to understand the terms and conditions. For further growth of China's insurance market, it is necessary to improve the consumer protection system, with a focus on enhancing financial literacy and education (Lusardi and Mitchell, 2023).

Furthermore, some insurance agents may mislead or deceive consumers during the sales process, and some insurance companies may delay or withhold claims payments, leading to consumers' distrust of the insurance industry. These factors have contributed to negative perceptions of insurance among some Chinese consumers.

6. InsurTech in China

6.1 InsurTech Development in China

InsurTech combines insurance and technology. Specifically, it refers to the comprehensive use of artificial intelligence (AI), blockchain, big data, and other innovative technologies to improve the value of insurance entities (Cao et al., 2020). The rapid development of the digital economy and the continuous advancement of technology provided fertile soil for InsurTech in China. Indeed, the recent years have witnessed the rapid development and widespread use of InsurTech in China, which has profoundly changed the operations of the insurance industry.

It is well known that traditional insurance suffers from several challenges such as adverse selection and moral hazard, both of which stem from asymmetric information between the insurer and the insured. Traditional insurers are also vulnerable to losses due to insurance fraud. In addition, traditional insurance relies on manual operations in many aspects of its business including underwriting, investigation, and claims handling. As a result, insurance companies often have huge underwriting and claims departments to address asymmetric information, which leads to low efficiency, and make it more prone to the subjective bias of the operators. These inherent weaknesses of traditional insurance have opened up the possibility of the rise of InsurTech in China.

InsurTech can potentially overcome these shortcomings by gathering data through various technologies. Auto insurance companies can use telematics devices to collect driving metrics such as location, mileage, driving frequency, and other driving habits. These metrics can then help build more precise pricing models and make use-based-insurance (UBI) auto insurance feasible. In health insurance, insurers can use the so-called wearables to gather information on customers' behavioral patterns and exercise records which can potentially be used for individualized pricing. More generally, once insurers have big data, they can process and utilize it through AI and cloud computing to set rates, automate interactions with customers and better design products. Additionally, blockchain is the technology of the future that can address insurance fraud by enhancing transparency, contract efficiency, claim processing, and fraud detection and prevention.

China's digital infrastructure construction has progressed steadily, with many companies adopting cloud computing and InsurTech technologies such as big data and AI. By the end of 2020, 76.79% of the insurance companies adopted cloud computing. Insurers have made significant strides in the use of InsurTech, with big data, AI, and blockchain enabling precise pricing, smart marketing, and accurate claims processing. By the end of 2020, the average underwriting automation rate of the insurance industry was 64.71%, while the claims automation rate reached 21.48% (CB Insights, 2022)

Leading insurers, such as Ping An and China Life, have set up digital transformation departments, invested heavily in digital infrastructure, and applied various technologies through the insurance value chain. They have also established numerous technology subsidiaries to drive innovation. Similarly, multinational insurers, including Sompo and Sumitomo, are also exploring opportunities in the Chinese market and investing heavily in InsurTech.

Online insurers, such as ZhongAn Online P&C Insurance, have emerged as major players due to their exclusive online business model.[14] They have focused on developing diverse customer-reaching channels and innovative products for the fragmented marketing model. Online insurers leverage internet- and/or mobile application-based sales, product development, underwriting, claims and customer service to provide a seamless customer experience. Chen et al (2023) showed that a Chinese life insurer achieved significance sales growth but somewhat slower growth in premiums received from new policies after adopting mobile application sales strategy.

6.2 New trends and challenges

As previously mentioned, InsurTech is becoming a major driver for China's digital economy and is reshaping the insurance industry. The COVID-19 pandemic has accelerated the adoption of InsurTech as more people move their work and life online, leading to an increase in risk and insurance awareness. During the Covid-19 pandemic, insurance companies had to digitize their customer service and prevent rising cybersecurity problems, requiring them to

[14] There are four online insurance companies in China: Zhong'An, Tai'Kang, Yi'An and An'Xin. They are only permitted to do insurance businesses online.

invest more in InsurTech. As a result, internet insurance has experienced rapid growth in recent years.

InsurTech can have a significant impact on the insurance industry by optimizing risk management, expanding inclusive insurance products, and improving customer experience. The *FinTech Development Plan* (金融科技发展规划 2019-2021) issued by PBOC responded to this trend by introducing policies that encourage the development of FinTech (including InsurTech) and the use of innovative technology while improving the regulatory framework to prevent emergent risks from the inappropriate use of technology.

The growth prospects of InsurTech have attracted internet companies such as Tencent, Alibaba, and JD.com, which have already entered the insurance market through various sales models embedded in their internet platforms. Meanwhile, many start-ups have also emerged, focusing on specific areas of business and serving insurers with advanced technologies to better integrate InsurTech into sales, product innovation, operations, etc. According to a report issued by Swiss Re and Fudan University, as of the end of 2020, there were 127 InsurTech start-ups in China, with this number expected to continue to rise in the future.

However, InsurTech still faces several challenges, including regulatory uncertainties, high financing costs, and a lack of talents. Insurance companies need to leverage InsurTech and big data to build their unique business models and competitive advantages; at the same time, as China increasingly emphasizes privacy protection and data security, the insurance industry must comply with relevant laws when using such data. Balancing the mining of data and the protection of personal information will be a topic worthy of continuous exploration.[15] Moreover, the large capital investment required in high-technology industries can be a barrier to the use of InsurTech by smaller insurers and start-ups. Additionally, private equity, venture capital, or corporate-backed financing is currently scarce in China while mergers and acquisitions are not as popular as in other developed markets. China's InsurTech development must overcome these challenges to achieve its full potential.

[15] Platform-based "mutual aid" plans for critical illness insurance offered a cautionary tale regarding the regulatory uncertainty InsurTech sector faces in China. Xiang Hu Bao (相互宝), meaning "protecting each other" or "shared treasure" in Chinese, was an online mutual-aid platform providing critical illness protection operated by the Chinese Fintech giant Ant Financial. It was launched in October 2018 and provided indemnity payments to members who experience one of the 100 types of covered critical illnesses. Xiang Hu Bao did not collect premium ex ante, but instead asked its members to equally share the indemnity payments (plus 8% administrative fee). Individuals between 30 days and 59 years who meet basic health and risk criteria were eligible to become members. Leveraging Ant Financial's Fintech strength in its underwriting and claim process, Xiang Hu Bao had close to100 million members, a number that is comparable to the total number of policyholders holding traditional critical illness insurance policies in China, just a year after its inception. In September 2020, CBIRC issued a report declaring that Xiang Hu Bao and other similar platform-based mutual aid business as illegal, and Xiang Hu Bao was closed in January 2022. See Fang et al (2023) for a detailed analysis of Xiang Hu Bao's business model.

7. Social Insurance

7.1 Social Insurance Scheme in China

China has the largest social insurance system in the world in terms of covered population (Dong, 2009). This system includes five components: Basic Pension Insurance, Basic Medical Insurance, Work Injury Insurance, Unemployment Insurance, and Maternity Insurance. China introduced its first *Social Insurance Law* in 2011 to regulate social insurance. As mentioned earlier, some cities have begun to introduce Long-Term Care Insurance as the sixth component of social insurance, but this scheme has not yet been regulated under national law.

The first pillar of China's pension system is the Basic Pension Insurance, which consists of two distinct programs: one for urban employees and the other one for non-salaried urban and rural residents.[16] These programs are managed at the provincial or even at local levels. The urban employees' program involves contributions to a Pay-as-You-Go account (or the "social coordination" account) by employers and an individual account by employees. The pension benefit replacement level is related to average local social earnings and thus differs across cities, and the government offers subsidies for both accounts as necessary. As for the non-salaried urban or rural residents' program, the government replaces employers as the funding source for the noncontributory account since these individuals are not employed. By the end of 2021, the Basic Pension Insurance had covered 1.029 billion people; during 2021 it collected USD 915 billion insurance revenues and disbursed USD 860 billion in pension payments. As of the end of 2021, the Basic Pension Insurance had a balance of approximately USD 915 billion. China is currently focused on creating a comprehensive and unified pension system that covers both urban and rural residents. Additionally, reforms are being implemented to strengthen the second (enterprise pensions) and third (individual retirement accounts) pillars of the pension system in response to the aging population (Sun et al., 2007).

Basic Medical Insurance and Maternity Insurance in China cover the cost of sickness and maternity. Similar to the Basic Pension Insurance, China's Basic Medical Insurance consists of medical insurance for urban employees, and medical insurance for non-salaried urban or rural residents. Urban employee'' medical insurance began in 1993 and it consists of a social coordination account contributed by employers and an individual account contributed by employees, and the contribution amounts are linked to the employee's salary. Medical insurance for non-salaried urban or rural residents is a combination of insurance for urban residents and insurance for rural residents without individual accounts, and it is funded by government financial subsidies and individual contributions. Maternity insurance is only

[16] See Fang and Feng (2020) for a detailed overview of China's pension system.

available to employees and is funded by the employer. Altogether, by the end of 2021, Basic Medical Insurance and Maternity Insurance had covered over 95% of the population, and in 2021 the revenue of the insurance was USD 410 billion, while the expenditure was USD 343 billion. As of the end of 2021, the cumulative balance of these two schemes was USD 517 billion.

Work Injury Insurance was first introduced by law in 1951. As in the case of maternity insurance, work injury insurance is only available to employees and is paid by the employer. The government determines differential benefit rates for different industries based on the degree of risk of injury at work; and it also establishes contribution rate bands for each industry based on the use of the Work Injury Insurance Fund and the incidence of injury at work in the industry. As of the end of 2021, Work Injury Insurance in China had covered 283 million people, and the Work Injury insurance fund had a cumulative balance of USD 20 billion. In 2021, 2 million people were compensated by the insurance.

The last social insurance scheme in China is Unemployment Insurance, which was first set up in 1986. Employees pay up to 1% of gross earnings, and employers pay up to 2% of payroll; the specific rates are determined by local governments. Local governments must set unemployment insurance benefit amounts at a level higher than the local public assistance benefit but lower than the local minimum wage. The benefit period varies from 1 to 2 years according to the number of periods an employee has contributed to the unemployment insurance fund. The unemployment insurance fund will also pay the medical insurance contributions for the insured during the benefit period. As of the end of 2021, Unemployment Insurance in China had covered 230 million people, and the unemployment insurance fund had a cumulative balance of USD 47 billion. In 2021, 6 million people were compensated by the insurance.

An interesting characteristic of the social insurance landscape in China is that its coverage has a positive correlation with communist party unions (Dong, et al, 2016; Cheng, 2022). They find that firms with communist party unions on average have higher social insurance coverage rates than those without communist party unions. In addition, Gao et al. (2012) find that due to imperfect enforcement of social insurance contribution requirements, social insurance coverage rates vary significantly with workers' contract types: workers with short-term labor contracts have lower coverage than those with long-term labor contracts.

7.2 Cooperation with Commercial Insurance

In addition to the social insurance programs discussed earlier, the Chinese government collaborates with commercial insurance companies to enhance the coverage of risks for residents.

One of the important recent initiatives in the medical insurance sector, first introduced in 2015, is "*Huimin* Insurance (惠民医疗保险)," which is a particular medical insurance policy provided jointly by the government and commercial insurers. The goal of "*Huimin* Insurance" is to strengthen the establishment of a multi-level medical insurance system, providing critical illness insurance to those not eligible for normal commercial medical insurance, and protecting them from falling into poverty when facing significant medical costs. As of the end of 2021, more than 200 "*Huimin* Insurance" products had been launched in 27 provinces, and they covered around 140 million people and generated a total annual premium income of over USD 2 billion. due to medical costs.

In the property insurance sector, Hainan Province launched in 2020 government-subsidized business interruption loss insurance to address the impact of the Covid-19 pandemic where 15 provincial property and casualty insurance companies signed a coinsurance agreement to provide coverage for business interruption losses in the catering, accommodation, tourism, and logistics industries. Similar policies have also been introduced in Beijing and Zhejiang to support small and microenterprises in resuming their production after the Covid-19 pandemic.

8. Prospects for Future Development

8.1 Further Opening of the Chinese Insurance Market

From 1979, China has entered a historical period of Reform and Opening-up. Since then, the insurance industry of China has gradually embraced foreign insurance companies and forged closer relations with world markets. Since China's entry into WTO in 2001, foreign insurance institutions have been more deeply involved in the modernization of China's insurance industry and financial system than ever before, as China's regulatory restrictions for foreign insurance institutions are increasingly relaxed. As seen in Table 4, since AIA first entered the Chinese insurance market in 1992, China has made great strides in opening up its insurance industry, gradually eliminating market entry restrictions and specifying regulations for foreign funded insurers. In 2021, foreign insurance companies are permitted to hold 100% of the shares of foreign-funded insurers in China.

Table 4. Key Policies for the Regulation of Foreign Funded Insurers

Time	Policy	Content
1992	Interim Measures for the Administration of Foreign Funded Insurance Institutions in Shanghai	For a foreign-funded insurance institution, operating insurance business in China shall meet the basic requirements of having operated business for more than 30 years, holding total assets of more than US $5 billion, and having established a representative office in China for more than 3 years
2002-2017	Regulations on the Administration of Foreign Funded Insurance Companies; Catalog of Industries for Guiding Foreign Investment	Stipulate the proportion of foreign shares of life insurers and the restrictions on the geographical and business scope of joint venture nonlife insurers (for life insurers, the proportion of foreign shares shall not exceed 50%)
2018	Detailed Rules for *Regulations on the Administration of Foreign Funded Insurance Companies* (Draft for Comments)	Increase the upper limit of foreign ownership of life insurers to 51%
2019	Revised version for *Regulations on the Administration of Foreign Funded Insurance Companies*	The restrictions of "having operated business for more than 30 years" and "having established a representative offices in China for more than 3 years" are revoked
2021	Decision on Amending Detailed Rules for *Regulations on the Administration of Foreign Funded Insurance Companies*	1. Specify the access criteria for foreign insurance groups and overseas financial institutions 2. The restrictions on the proportion of foreign shares are revoked 3. As shareholders, foreign insurance companies can hold 100% of the shares of foreign-funded insurer in China

Source: Collected and complied by the authors.

As China looks towards the future, it plans to strengthen its "reopening" strategy by attracting more foreign insurance institutions and international capital. This approach will support the development of China's international financial, insurance, and reinsurance hubs, as well as its offshore financial market. An open and competitive insurance market structure will also be crucial for attracting and nurturing talented insurance professionals (Leverty et al., 2009), which will be beneficial for the growth of the economy and the financial industry.

8.2 China's Aging Trend and "Healthy China" Initiative

The aging population in China is also driving the growth of the insurance industry. The 7th National Population Census of China conducted in 2020 revealed that China's population was aging faster than anticipated, with 18.70% of the population aged 60 or above, and 13.50% aged 65 or above. This demographic shift has resulted in an increase in demand for healthcare and elderly care services in China (Jiang et al., 2021).

To address this challenge, in 2017 China launched the "Healthy China" Initiative, and in 2020, the Chinese government issued the "*Opinions on Deepening the Reform of the Medical Security System*," which aims to establish a multi-level medical security system by 2030. Additionally, in response to the aging trend, 17 state-owned financial institutions established the National Pension in 2021. Insurance, whether social or commercial, will play an increasingly important role in the future, as it provides both financial support and a range of services including health management, health care, and elderly care.

8.3 High-Quality Development

In January 2020, the CBIRC issued the "*Guiding Opinions of the CBIRC on Promoting the High-Quality Development of Banking and Insurance*", which laid down the principle of "high-quality development" for the insurance industry of China. The Guidance stipulates that, after experiencing years of breakneck growth, the insurance industry needs to focus on quality growth by creating a market-oriented, law-based, and internationalized business environment, and calls for the establishment and improvement of environmental and social risk management system and the incorporation of environmental, social and governance (ESG) requirements into their businesses.

In June 2022, the CBIRC issued the "*Green Finance Guidelines for the Banking and Insurance Industry*," which consolidates the aforementioned 2019 Guidelines and focus particularly on green banking (e.g., green loans, green credit) and insurance industry.[17] The new guideline puts the fight for the carbon-peak and carbon neutrality targets at the center of financial institutions that need to "ultimately achieve carbon neutrality in their portfolio", in addition to pollution control; it also focuses on green corporate governance and specify the responsibility of the senior management and the board to lead green finance from the top, and requires that there is at least one senior manager designated to lead green finance and that internal control mechanisms should evaluate and audit the green finance mechanisms; it also stress the environmental information disclosure, including disclosure on green strategy and policies, development of green finance, preferably with reference to international standards and good practices; it emphasizes the responsibility of banks vis-à-vis their clients and customers to implement green development, including disclosure, risk management and policy systems and adds that banks should apply "differentiated management", possibly depending on the client's environmental performance.

[17] See Wang and Bing (2022).

To achieve high-quality development, China must enhance its regulatory environment and prioritize consumer protection. Solvency supervision should be strengthened, and innovation should be encouraged while risks from innovation should be prevented. Regulations should level the playing field to ensure a fair business environment for foreign and small to medium-sized insurance companies.

9. Conclusion

The Chinese insurance market has experienced remarkable growth over the past few decades, particularly after its WTO accession in 2001. China is now the second-largest insurance market globally, with notable development in life, non-life, health insurance and reinsurance markets. The use of InsurTech has dramatically transformed the operations within the entire insurance industry and spurred product innovation such as the emerging "*Huimin* Insurance" to meet the evolving needs of consumers. The regulatory framework for the insurance industry and the education system for training insurance professionals have also made significant progress.

However, the insurance industry in China still has lower insurance penetration and density than that in other developed economies, and it faces a multitude of market imperfections including high market concentration, lack of insurance product varieties, and lack of sufficient depth and liquidity of asset markets, and lack of consumers' risk awareness and insurance literary. To tackle these issues, ongoing efforts are being made to promote greater market openness, to integrate technologies, and to prioritize consumer protection. Under the background of the aging trend, the "Healthy China" Initiative, and the fast-moving digitization of the economy, the insurance industry is poised to become increasingly important in China.

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