

# Research on the Development Status, Problems and Suggestions of the STAR Market

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**Abstract.** In 2018, the STAR Market was newly established on the Shanghai Stock Exchange and piloted the registration system. Since then, science and technology enterprises have been revitalized and energized in the STAR Market. In July 2023, the STAR Market ushered in the fourth anniversary of the market's opening. In the past four years, the STAR Market has operated steadily and made remarkable achievements. In October 2023, the Central Financial Work Conference pointed out that it puts science and technology finance first and that efforts should be made to build a financial power. This paper explores the current situation and problems of the development of the STAR Market from four perspectives: market issuance, market activity, market profitability, and market innovativeness, and puts forward corresponding countermeasures and suggestions to further play an essential role in promoting the development of science and technology finance in China.

**Keywords:** The STAR Market; Central Financial Work Conference; Technology Finance; Registration System.

## 1. Overview of the Development of the STAR Market

Establishing the STAR Market is crucial for financial services to enhance its ability to serve science, technology, and innovation. [1] On June 13, 2019, the STAR Market was officially opened on the Shanghai Stock Exchange, and on July 22, 2019, the first batch of companies on the STAR Market was officially listed. 2023 is the first year of China's full registration system implementation and the fourth year of STAR Market's opening. In the past four years, STAR Market has performed well. The Central Financial Work Conference in 2023 prioritized science and technology finance. As the leading position of financing for science and technology enterprises, the STAR Market should play its role and advantages as a "demonstration field" to help the development of science and technology enterprises and promote the progress of science and technology finance in China.

## 2. Development Status of the STAR Market

This paper examines the development of the STAR Market since its inception by analyzing key indicators such as the number of listed companies, the industry distribution of listed companies, the total market capitalization, the average turnover, the average daily turnover rate, operating revenue and net profit, P/E ratio, and the R&D investment from 2019 to 2023. The analysis is conducted from four perspectives: market issuance, market activity, market profitability, and market innovation.

### 2.1. Analysis of Market Issuance

Considering the availability and representativeness of data, the number of listed companies, the industry distribution of listed companies, and the total market capitalization on the STAR Market from 2019 to 2023 are selected to analyze the issuance situation.

#### 2.1.1. Number of Listed Companies

The first batch of companies listed on the STAR Market in July 2019 were only 25, and 70 companies went public at the end of 2019. From 2019 to 2023, the number of listed companies in the STAR Market increased yearly. By 2023, there have been 566 listed companies on the STAR Market.

Besides, the number of listed companies in the STAR Market market each year from 2019 to 2021 was upward. However, in the past two years, the speed of listed companies on the STAR Market has slowed.

**Table 1.** The number of listed companies on the STAR Market from 2019 to 2023

	2019	2020	2021	2022	2023
Number of listed companies (number)	70	215	377	501	566

### 2.1.2. Industry Distribution of Listed Companies

**Table 2.** Industry distribution of listed companies on the STAR Market from 2019 to 2023

	2019	2020	2021	2022	2023
New generation of information technology industry	27	48	56	61	38
The Biological industry	13	29	37	22	3
Highly equipped manufacturing industry	4	28	29	17	11
New material industry	8	18	20	11	7
Energy conservation and environmental protection industry	—	11	10	5	2
New energy industry	—	5	9	4	3

Data source: wind

Table 2 shows that the listed companies in the STAR Market are mainly concentrated in the high-tech industry. Most of the newly listed companies in the STAR Market each year belong to industries concentrated in the new generation of the information technology industry, bio-industry, and highly-equipped manufacturing industry, which is a more centralized distribution, in line with the characteristics of the market of the STAR Market.

### 2.1.3. Total Market Capitalization

**Table 3.** The total market capitalization and growth rate of the STAR Market from 2019 to 2023

	2019	2020	2021	2022	2023
Total market capitalization (trillion)	0.87	3.46	5.95	6.13	6.46
Market capitalization value growth rate (%)	62.05	297.70	70.49	3.11	5.36

Data source: wind

On July 21, 2019, the STAR Market was opened. By the end of December 31, 2019, the total market capitalization reached 87 million yuan, with a growth rate of 62.05% compared with the beginning day. In 2020, 145 companies went public, and 145 enterprises raised 222.622 billion yuan, ranking first among the A-share sectors. The market capitalization growth rate of the STAR Market reached 297.70% in 2020. In 2021, the growth rate of Shenzhen Main Board was 0.27%, Shanghai Main Board was 8.13%, Growth Enterprise Market was 28.03%, and the STAR Market was 70.49%. The market capitalization growth rate of the STAR Market continues to perform well. Compared with 2021, the total market capitalization in 2022 increased by 0.19 trillion yuan, with a growth rate of 3.11%, becoming the only sector with annual growth in the total market capitalization. The total market capitalization growth rate of the STAR Market in 2023 was 5.36%. In the past two years, the growth rate of the total market capitalization of the STAR Market has slowed down.

## 2.2. Analysis of Market Activity

In the analysis of market activity, two indicators are selected: the average turnover of a single stock and the average daily turnover rate of each board in Shenzhen Main Board, Shanghai Main Board, Growth Enterprise Markets, the STAR Market, and Beijing Stock Exchange from 2019 to 2023.

### 2.2.1. Average Turnover of a Single Stock in Each Sector

**Table 4.** Comparison of average turnover of a single stock in each sector from 2019 to 2023

	2019	2020	2021	2022	2023
Shenzhen Main Board	148.4	563.65	603.20	551.43	458.60
Shanghai Main Board	133.6	487.91	622.81	503.33	433.45
Growth Enterprise Market	134.1	521.34	497.02	364.58	400.47
the STAR Market	189.9	306.66	277.06	237.34	276.18
Beijing Stock Exchange	—	—	18.99	12.12	30.32

Data source: wind

It can be seen from Table 4 that the average turnover of a single stock on the STAR Market is higher than that on the Beijing Stock Exchange because the companies listed on the Beijing Stock Exchange are small in volume and primarily innovative growth enterprises. The average turnover of a single stock on the STAR Market is much lower than that on the Shenzhen Main Board, the Shanghai Main Board, and the Growth Enterprise Board, reflecting the high threshold for entry into the market and the small turnover of the STAR Market.

### 2.2.2. Average Daily Turnover Rate of Each Sector

**Table 5.** Comparison of average daily turnover rate of each sector from 2019 to 2023

	2019	2020	2021	2022	2023
Shenzhen Main Board	1.30	1.99	2.58	3.33	2.71
Shanghai Main Board	2.60	2.65	2.40	2.20	1.99
Growth Enterprise Market	3.88	6.24	6.26	4.66	4.95
the STAR Market	17.30	11.06	5.98	4.28	3.28
Beijing Stock Exchange	—	—	2.36	1.86	5.20

Data source: wind

In 2019 and 2020, the STAR Market was at the early stage of opening, with high market activity and a much higher daily turnover rate than other boards. In 2022, the STAR Market had an average daily turnover rate of 4.28%, which was still higher than the Shenzhen Main Board and the Shanghai Main Board but lower than the 4.66% of the Growth Enterprise Market. In general, compared with other sectors, the turnover rate of the STAR Market is higher, showing a noticeable trend of higher before and lower after, which is due to the high market threshold of the STAR Market.

## 2.3. Analysis of Market Profitability

The operating revenue and net profit of the STAR Market of 2019-2023H1 and the P/E ratio index of each section from 2019 to 2023 are selected to analyze the market profitability of the STAR Market.

### 2.3.1. Operating Revenue and Net Profit

**Table 6.** Operating revenue and net profit for 2019-2023H1

	2019	2020	2021	2022	2023H1
Operating revenue (100 million yuan)	1,471.15	4,084.38	8,344.54	12,120.49	6,271.73
Year-on-year increase (%)	14.00	15.51	36.86	29.00	5.00
Net income attributed to shareholders (100 million yuan)	178.12	500.86	948.41	1,135.89	405.93
Growth rate (%)	25.00	59.13	75.89	6.00	-39.00

Data source: Shanghai Stock Exchange

From 2019 to 2022, the STAR Market's operating revenue and net income attributed to shareholders rose. In 2022, the operating revenue of the STAR Market exceeded one trillion yuan, and the net profit returned to the parent broken 100 billion yuan. However, the growth rate slowed down in 2022, and the net profit in the first half of 2023 was negative, considering that due to the concentration of industry in the STAR Market, the downstream market was affected by the impact of the cause. However, overall, the profitability of the STAR Market is better and gradually improved.

### 2.3.2. P/E Ratio of Each Sector

**Table 7.** P/E ratio of each sector from 2019 to 2023

	2019	2020	2021	2022	2023
Shenzhen Main Board	21.88	28.87	29.54	31.79	29.95
Shanghai Main Board	13.39	16.38	13.83	11.45	11.52
Growth Enterprise Market	122.47	102.71	87.56	49.56	46.54
the STAR Market	56.83	104.73	70.71	54.72	77.96
Beijing Stock Exchange	—	—	39.81	17.39	32.28

Data source: statistical yearbooks of stock exchanges, wind

As can be seen from Table 7, the P/E ratio of the STAR Market is much higher than that of the Shenzhen Main Board, the Shanghai Main Board, and the Beijing Stock Exchange. Besides, there is little difference with that of the Growth Enterprise Market because the STAR Market and the Growth enterprise market are the leading positions of innovative enterprises. Therefore, the valuation premium is higher than in other sectors.

## 2.4. Analysis of Market Innovation

In the innovation analysis of the market, the R&D investment and growth rate of the STAR Market in 2019-2023H1 are selected as measurement indicators.

**Table 8.** R&D investment of the STAR Market from 2019 to 2023H1

	2019	2020	2021	2022	2023H1
R&D investment (billions of dollars)	117.00	384.18	852.40	1,284.68	706.00
Growth rate (%)	23.00	22.61	29.00	28.00	19.00

Data source: Shanghai Stock Exchange

The R&D investment of the STAR Market in 2019-2022 increased year by year, exceeding 100 billion yuan in 2022, maintaining a growth rate of more than 20% every year. In the first half of 2023, the R&D investment reached 70.6 billion yuan, with a year-on-year growth of 19%. Most of the listed

companies on the STAR Market are high-tech industries requiring more scientific research investment.

### **3. Market Development and Problems of the STAR Market**

#### **3.1. Rapid Growth in Market Size, Industry Concentration but Small Volume**

Since opening as a "test field" for fully implementing the registration system, the STAR Market has strictly followed the regulations for listing approval information disclosure. As of 2023, the number of listed companies has reached 566, and the number of listed companies has continued to increase. In 2020 and 2021, the total market capitalization proliferated. In 2022, although it slowed down, the total market value still showed a trend of continuous expansion. Notably, most of the listed companies in the STAR Market are concentrated in high-tech enterprises in the growth stage. Although the number and total market capitalization of listed companies are growing fast, the overall volume is still tiny compared with the main board of the stock market due to the short opening time.

#### **3.2. Good Market Activity, High Market Entry Threshold, and Greater Investment Risk**

Based on the two indicators of the average turnover of a single stock and the average daily turnover rate, it can be seen that the liquidity of stocks in the STAR Market is better, and the market activity is more active. At the same time, it shows that the entry threshold of the STAR Market is high, and the market is mainly filled with short-term capital suppliers and demanders, with high speculation risks. Higher liquidity leads to increased volatility of stock prices and higher trading risk of the STAR Market compared to other market sectors.

#### **3.3. Gradual Improvement in Profitability and High Valuation Premium**

The STAR Market has maintained high profitability as an essential platform to help develop the real economy.[2]As the total operating revenue and net profit of the STAR Market can be seen, the profitability has been improving and maintaining a high growth rate. The P/E ratio of the STAR Market is higher than that of the main board, and many innovative enterprises lead to a high valuation premium, which is one of the risks the STAR Market faces..

#### **3.4. Large Investment in R&D and Small Scale of Operation**

From 2019 to the first half of 2023, R&D investment in the STAR Market increased yearly, nearly 11 times in four years. In the first half of 2023, the STAR Market company invested 70.6 billion yuan in research and development, an increase of 19% yearly. There were more than 1,100 invention patents for the STAR Market in 2019, which grew to 13,758 in 2022. Most of the listed enterprises on the STAR Market are growing science and technology enterprises, which are still in the early growth stage and have a small scale of operation. Therefore, high scientific research investment is the pressure and risk listed enterprises face on the STAR Market.

### **4. Suggestions for the Development of the STAR Market**

#### **4.1. Utilizing the Advantages of the "demonstration field" of the Registration System and Accumulating Experience for Capital Market Reforms**

Over the past four years, the STAR Market has changed from an "experimental field " of the registration system to a "demonstration field." It provides an exemplary role for other boards to promote the implementation of the registration system.[3] The issuance of new shares shall strictly implement market standards and strengthen the monitoring of market issuance prices. The issuance of new shares will strictly enforce market standards and strengthen the monitoring of market issuance prices; further, enhance the marketization of the issuance pace; further, improve the review and

approval system and efficiency of new shares listing; and continuously strengthen the ability to regulate the supply and demand in the market.

#### **4.2. Increasing Investment in Scientific and Technological Innovation and Supporting the Development of Science and Technology Finance**

Under the background of China's implementation of the innovation-driven development strategy, the STAR Market has injected new momentum into industrial transformation, upgrading, and cultivation of advanced, sophisticated industries.[4] As a position for innovative enterprises to gather, the STAR Market should give full play to the advantages of the board and constantly increase the investment in research. It is vital to develop a sound incentive mechanism for scientific research personnel and constantly attract outstanding scientific research personnel to enter the STAR Market companies and enterprises. Intellectual property issues will affect the process of listing a company to be listed on the STAR Market.[5] Therefore, it is necessary to strengthen the protection of intellectual property rights to stimulate the market's vitality of innovation.

#### **4.3. Improving the Information Disclosure System and Implementing Rewards and Incentives**

A transparent market environment is an essential prerequisite for the functioning of capital markets. The STAR Market implements a registration system with higher requirements for information disclosure authenticity, completeness, and standardization. Therefore, it is necessary to improve the information disclosure system further, clarify the contents and standards of information disclosure, strengthen the legal environment for the market, and clarify the responsibilities of all market entities. The Securities and Futures Commission should do an excellent job examining and supervising before and after the event. Besides, it is essential to strengthen the punishment for illegal disclosure. It is a great way to implement severe punishment and order rectification for enterprises that do not disclose information or do not disclose information by the requirements and reward enterprises with good information disclosure performance to form a demonstration and incentive effect in the market and further standardize market disclosure.

#### **4.4. Strengthening Risk Monitoring and Improving Investors' Risk Awareness**

Most of the companies in the STAR Market are start-up growth companies, and most have weak profitability and high investment risks in the current period. Traditional indicators such as price-earnings and price-to-book ratios cannot accurately evaluate stocks. In addition, its special trading links will increase trading risks, so it is necessary to constantly improve the market's risk monitoring system and effectively supervise its risks. With the implementation of the registration system for the STAR Market, there are more individual investors in the market. Therefore, it is necessary to improve investors' understanding of the investment risks of the market further and guide investors to invest reasonably according to their risk preferences and investment expectations.

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