The Economic Effects of Different Paths of U.S.-Listed Chinese concept Stocks Returning to Listing

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Abstract. In recent years, under the background of the tightening of the regulatory environment in the United States and the institutional reform of the China's A-share market and the Hong Kong stock market, the phenomenon of the return of Chinese concept stocks is increasing. How to optimize the return policy and rationally choose the return path are the common concerns of regulators and listed companies. This paper selects 40 Chinese concept stocks that returned to China's A-share market and Hong Kong stock market from 2015 to 2020 as the research object, and uses event study method and financial index method to compare and analyze the short-term market performance and long-term financial performance of Chinese concept stocks after different paths of return. The results show that: in terms of short-term market performance, the return of Chinese concept stocks to the A-share market and the Hong Kong stock market have positive market effects. The A-share market reacts more strongly to the return event and the abnormal volatility is the most significant on the listing day, while the Hong Kong stock market reacts less to the return event and the abnormal volatility is lagged. There are differences in the impact of different regression paths on abnormal returns.The abnormal returns of IPO regression in A-share market are higher than reverse takeover regression. In terms of long-term financial performance, the return to the Hong Kong stock market can bring more stable long-term financial performance, especially the cross-listings of the Hong Kong stock market concept stocks performed the best, while the return to the A-share market of the Chinese concept stocks showed an overall decline in financial performance. In addition, this paper also analyzes the regulatory requirements of different return paths and their pros and cons for companies. The conclusion of this paper provides a reference for the selection of the return path of Chinese concept stocks and the policy optimization of regulators.
CCS CONCEPTS • Design and analysis of algorithms • Professional topics

Keywords: Chinese concept stocks, Regression pathway, Market performance, Financial performance

1 INTRODUCTION

Chinese concept stocks generally refer to the stocks of Chinese enterprises whose main business base and main profit source are in the Chinese market and which are listed and financed in overseas capital markets. After years of development, Chinese concept stocks have formed a certain market scale. Globally, Chinese concept stocks are mainly listed in the

capital markets of the United States, the United Kingdom, Singapore and other places. As of July 30, 2021, a total of 395 Chinese concept stocks were listed overseas, among which 285 Chinese concept stocks were listed in the US capital market, accounting for more than 73%, with a total market value of about 1.8 trillion yuan. Accounting for 44.3% of the total market value of A-shares, it can be seen that the US capital market is the main gathering place for the overseas listing of Chinese companies.

In recent years, the Chinese concept stock market has been growing, and more and more Chinese companies have obtained US dollar financing, which is gradually accepted and recognized by international investors. However, with the intensification of Sino-US game and the gradual strengthening of regulatory requirements by the US side, the regulatory environment faced by Chinese concept stocks in the US stock market has changed and the uncertainty has increased significantly. Since 2020, the United States has introduced the Holding Foreign Companies Accountable Act (HFCAA) and other bills, which aims to strengthen the audit and supervision of foreign companies listed in the United States. It requires the inspection of accounting firms providing audit services for issuers, and the acquisition and spot check of audit working papers. At the same time, all foreign companies, including Chinese companies, should make additional disclosure in the year without inspection, otherwise they will be banned from trading. The Securities Law of the People's Republic of China prohibits Chinese companies from providing data about their companies to overseas regulators without regulatory permission, which is in conflict with the HFCAA's requirements. The relatively poor financing and regulatory environment has led many Chinese companies to opt out of the US market. Against this backdrop, Chinese companies that originally planned to list in the U.S. have also begun to change their plans, with a number of companies withdrawing their IPO applications and larger companies such as Alibaba, Baidu, Ctrip and Chi-Med all returning to Hong Kong for cross-listing.

In August 2022, the China Securities Regulatory Commission (CSRC), the Ministry of Finance (MOF) and the US Public Company Accounting Oversight Board (PCAOB) signed a cross-border audit and supervision cooperation agreement, which is committed to building a cooperation framework that meets the regulatory and regulatory requirements of both sides, and has played a role in alleviating the delisting pressure of Chinese companies. However, the signing of the cooperation agreement does not mean that the cross-border audit regulatory conflicts between China and the United States will cease to exist from now on. On the contrary, as long as there are great differences in laws, regulations and regulatory requirements between China and the United States, the cross-border audit regulatory conflicts between China and the United States will exist for a long time. Different from the deteriorating listing environment in the United States, the Hong Kong stock market and the China's A-share market have recently carried out frequent institutional changes and rule refinement, which has attracted the attention of overseas Chinese companies. Therefore, it is of great practical significance to optimize the return to listing policy and rationally choose the regression pathway. At present, the concept stocks returning to the Hong Kong stock market mainly adopt cross-listing or re-IPO after delisting in the Hong Kong stock market while retaining the US stock, while the concept stocks returning to the China's A-share market mainly adopt IPO or reverse merger listing after delisting in the US stock market. This study will compare and analyze these four regression paths, and select 40 concept stocks that have returned as the research object. Using the event study method and referring to the existing

research results of financial index selection in the financial index method, this paper makes a comparative analysis of the short-term market performance and long-term financial performance of the successful return of Chinese concept stocks. The expected results provide a reference for the proposed return of Chinese concept stocks, and provide a reference for China's securities market to open an international board mainly for the emerging market countries along the Belt and Road.

2 LITERATURE REVIEW AND RESEARCH HYPOTHESES

Bailey and Jagtiani (1994)pointed out that the difference in demand was the main reason for the difference in stock prices between the main board and the foreign board. Domestic investors in China have limited investment channels, low yields on savings and national bonds, and underdeveloped corporate bond markets. A-share market has become A gathering place for many investment funds. At the same time, the supply of shares in the A-share market is difficult to meet the needs of many capital holders, resulting in the low price elasticity of domestic investors' demand for A-shares, which leads to the price of A-shares being higher than that of Hong Kong shares[1]. Zhang (2021)compared the stock price fluctuations of A-share market and Hong Kong stock market cross-listed companies in the two places, and showed that the difference in investment philosophy between the two markets also led to the different reactions of investors in the two places to the same announcement. Hong Kong stock market investors have a stronger sense of risk control and are more sensitive to adverse news[2]. By studying the price difference phenomenon of "homogeneous" stocks and the measurement of market valuation efficiency, Yi Ronghua (2016) found that there were significant differences in valuation models between Hong Kong and mainland markets, with the former paying more attention to value growth factors and the latter paying more attention to speculative factors[3]. Li (2018) also reached the same conclusion, arguing that domestic investors paid more attention to the price elasticity of stocks, while Hong Kong investors paid more attention to the profit growth and dividend income of stocks[4]. At the same time, the Hong Kong stock market is relatively mature, and the valuation system is relatively reasonable. From the development of China's securities market for more than ten years, irrational investment concepts once played A leading role in the market. The operation mode of domestic A-share market participants is mainly speculation, and their main purpose is to obtain the price difference in a relatively short period of time. The difference in investment philosophy between the domestic A-share market investors and the foreign Hong Kong stock market investors leads to the speculative atmosphere in the A-share market far exceeding the latter. In addition, liquidity also plays a significant role in the stock price difference. Amihud and Mendelson(1986) proposed that the liquidity of assets would have an impact on the pricing of assets[5]. The liquidity of the A-share market is higher than that of the Hong Kong stock market, so the expected return required by the Hong Kong stock investors must be higher than that of the A-share market, and there is A negative correlation between the re turn rate and the price, so the A-share price is higher than that of the Hong Kong stock market. To sum up, this paper puts forward the research hypothesis:

H1: Compared with the A-share market, the short-term volatility risk of the concept stocks in the returning Hong Kong stock market is less, and the long-term financial performance is more stable.

IPO and reverse merger and acquisition are the two most important ways for enterprises to enter the capital market. Arellano-Ostoa and Brusco(2002) proved that market timing exists and companies can choose listing methods according to timing, and there is a separating equilibrium in which high-quality companies choose IPO and low-quality companies choose reverse merger[6]. Floros(2011) used the event study method to show that the stock price of companies listed through reverse mergers could achieve 48% return within three months, which was much higher than the short-term performance of IPO companies in the same period. Moreover, most of the companies' stock prices fell sharply within one year after the reverse merger listing, which failed to improve their operating performance[7]. Adjei et al. (2008)compared the survival of reverse merger listed companies and IPO listed companies after listing[8]. Gleason et al. (2006)examined the long-term performance of companies listed through IPO and reverse merger, and found that although reverse merger listing can improve shareholders' wealth in the short term, it is difficult to create wealth for shareholders in the long term. Compared with IPO companies of the same scale, Reverse takeover companies have obvious characteristics of low solvency and high financial risk in the year of listing, and show lower profitability and higher volatility after two years of listing[9]. The above literature shows that in western capital markets, market timing has a significant impact on the choice of listing method, but this conclusion cannot be fully applied to the choice of listing time of Chinese companies. In China, the approval system is adopted for IPO, and the government departments play an important role in the process of IPO. IPO is accompanied by the risk of long waiting time, high cost and other uncertain factors, so most Chinese concept stock companies use reverse merger listing to quickly go public to achieve the purpose of high market valuation. At present, domestic scholars have fully studied market timing and reverse merger, and believe that market timing can be carried out in the process of reverse merger and acquisition. Qu et al. (2018) built an empirical model and found that when the market value of enterprises is low, they will go public through reverse merger to reduce the listing cost[10]. Qiu (2013) used factor analysis to comprehensively analyze the financial performance of companies before and after reverse takeovers, and concluded that the success of reverse takeovers could effectively relieve the financial pressure of enterprises in the short term[11]. Shi (2019) found that reverse takeovers can bring positive market reactions to the rapid rise of abnormal stock returns, and the listing method of reverse takeovers is conducive to improving the comprehensive strength of companies through capital accumulation[12]. Chen et al. (2020)studied the economic consequences of 360 reverse takeovers and found that the short-term market was positive after the announcement of the event, and the long-term business performance of the company improved[13]. Deng and Sun (2017) examined the overseas listing, privatization delisting and return to listing of Chinese concept stocks from the perspective of market timing. Compared with the long waiting period of IPO, reverse merger listing is more conducive to seize the market opportunity and enter the capital market quickly[14]. Zhang (2015)empirically tested the impact of IPO and reverse merger on corporate performance from 2008 to 2013, and found that the performance of reverse merge r listed companies was significantly better in the year of listing and the next year, but showed no significant difference after two years of listing[15]. Based on this, this paper proposes the following hypotheses:

H2: Compared with IPO path, reverse-takeover path in A-share market has less short-term volatility risk, and obtains higher valuation premium.

Coffee(1999)[16]first put forward the hypothesis of constraint theory, holding that listed companies from emerging capital markets with poor investor protection can make their behavior subject to the supervision of American laws and securities regulations through cross-listing in capital markets with good investor protection such as the United States, and the Tobin's Q value of cross-listed companies is higher than those without The Tobin Q value of cross-listed companies is higher than that of those without cross-listing. This view has been confirmed by a large number of empirical studies such as Resse and Weisbach(2002)[17]. Researchers have also verified the "constraint hypothesis" from different perspectives. Doidge et al. (2004) believed that listing in a market with stricter regulation and more perfect information disclosure and investor protection system than the domestic market reduces the possibility of the company's management to make profits by using private information, thus increasing the va lue of the company[18]. The empirical study of Fernandes et al. (2010)also found that the compliance of non-US companies listed in the US with US stock exchange rules has a positive impact on corporate value, especially for those companies from countries with worse information disclosure requirements and investor protection[19]. Foerster and Karolyi(1999)also believed that after an enterprise is listed overseas, it can get greater benefits in terms of investor base and corporate visibility, and the expansion of investor base will reduce the expected return on investment of investors, thus reducing the cost of capital of enterprises[20]. Busaba et al. (2015)studied Chinese companies that had returned to cross-listing in China, and believed that companies from less developed markets could obtain high valuations in the domestic market by taking advantage of the high visibility and reputation obtained from overseas listing[21]. He et al. (2010) used Tobin's Q as A proxy variable to me asure corporate value, and horizontally compared the Tobin's Q values of companies that only issued A-shares market with those that issued both A-share market and Hong Kong stock market, Cross-listing reduces the cost of information acquisition for investors, provides better protection for investors, and increases corporate value[22]. In conclusion, overseas listing can reduce the degree of market segmentation, reduce investment barriers and reduce the cost of capital. Moreover, overseas listing can expand the investor base, thus diversifying the risk and reducing the expected return of investors. Therefore, the cost of capital is further reduced, which is conducive to the improvement of corporate performance. Therefore, the cross-listing of Chinese concept stocks in Hong Kong will make investors believe that compared with the IPO of Chinese concept stocks returning to the Hong Kong stock market after delisting, the cross-listing of Chinese concept stocks in Hong Kong has more competitive advantages. Hypothesis 3 is proposed in this paper:

H3: The long-term financial performance of concept stocks in cross-listing return to Hong Kong stock market is better than that of IPO path.

3 MODEL METHOD AND DATA DESCRIPTION

The data from 2015 to 2020 are selected, and the Chinese concept companies that successfully returned to the A-share market and the Hong Kong stock market after the delisting of the US stock market are taken as the research objects, and the companies with incomplete disclosure of financial indicators are excluded. Finally, the research samples of this paper are determined as 30 concept companies, with A total of 150 sets of data and 2100 observed values, among which 8 samples are regressed on the IPO path of the A-share market. There are 8 samples of

IPO path regression in A-share market, 7 samples of IPO path regression in Hong Kong stock market, and 10 samples of cross-listing path regression in Hong Kong stock market. The financial data of the companies were obtained from WIND database. The initial data were obtained by manually collecting and sorting the balance sheets, income statements and cash flow statements of the selected 30 companies, and the relevant indicators to measure the financial performance of the companies were calculated.

3.1 Event study method

The eventstudy method was pioneered by Ball & Brown(1968)[23]and Fama et al.(1969)[24].It mainly consists of four steps: determining the event occurrence window, determining the estimation window of normal return rate, estimating abnormal return rate and significance analysis. To measure the average and cumulative abnormal returns of securities during the event period, this paper refers to the design of the event study method by Chen et al. (2010)[25]and adopts the market adjustment model to examine the short-term market performance of Chinese concept stocks returning to the domestic stock market through different paths. The listing date of Chinese concept stocks returning to the domestic stock market is selected as the event day (t=0). When determining the event window, it should reflect the full impact of the specific event on the stock price, and the length of the proposed window is [0,1][0,3][0,5][0,10][0,20][0,30][0,45][0,60]. Hang Seng Index and CSI 300 are used as the market indexes of Hong Kong stock market and A-share market respectively. The market adjustment model is used to estimate the expected normal return of the company in the Hong Kong stock market and the A-share market after regression, and the buy-and-hold return model is used as the robustness test.

3.2 Financial index analysis method

China's capital market is a weak efficient market, and the return of enterprises to the domestic capital market will cause the fluctuation of their valuation in the capital market in the short term, which cannot fully reflect the comprehensive and rational information. Therefore, it is necessary to use the financial index analysis method to investigate the actual operation of Chinese concept stock companies in the longer term. Therefore, it is necessary to use the financial index analysis method to investigate the actual operating performance of Chinese concept stock companies in different paths in a long period of five years. This paper analyzes the financial indicators of Chinese concept stock companies in the two years before, one year before, one year after, the first year after and the second year after the regression. According to the main analysis index table in the Notice on Issuing the XBRL Extended Classification Standard for SASAC Financial Supervision Statements in 2019 issued by State-owned Assets Supervision and Administration Commission of the State Council and the Ministry of Finance, and referring to the practice of Xu et al. (2000)[26], Zhu Heping (2017)[27],Liu Jun et al. (2017)[28], Combined with the actual situation of Chinese concept stock companies, the entropy weight topsis method is used to construct the financial performance evaluation index system, and 13 indicators are selected from the four aspects of enterprise debt paying ability, operating ability, profitability and development ability to evaluate the long-term performance of Chinese concept stock enterprises returning to the A-share market in different ways. The index system is shown in Table 1.

Table 1: Financial indicator evaluation system

Types of indicators	Indicator name
debt paying ability	Liquidity ratio (X1), Quick ratio (X2),Asset liability ratio (X3)
operating ability	Turnover of total assets (X4),Turnover of current assets (X5),Turnover of accounts receivable (X6)
Profitability	Operating margin(X7),Return on equity(X8),Return on Total Assets(X9),Net profit margin on sales(X10)
Development ability	Net profit growth rate (X11),Total assets growth rate (X12),Equity capital growth rate (X13)

4   RESULTS OF EMPIRICAL ANALYSIS

4.1   Market reaction analysis of Chinese concept stock regression

The average abnormal returns (AAR) of Chinese concept stocks returning to the A-share market and the Hong Kong stock market are obtained through the market adjustment model, as shown in Figure 1. From the average abnormal yield curve, the reversion A-share market concept stocks in the event day reached the maximum abnormal volatility of 45.75%, showing A high continuous positive volatility in the [1,15] window. During this period, the one-day average abnormal return of all 16 trading days exceeded 2%, and 8 trading days exceeded 5%. Then the yield curve flattens out and fluctuates on the horizontal axis (0%). In the return to Hong Kong stock market, the concept stocks did not show large abnormal fluctuations, and the market yield fluctuated slightly. Comparing the average abnormal return curves of the two stocks, we find that the volatility of the average abnormal return of the concept stocks in the A-share market is greater than that in the Hong Kong stock market, which verifies the first half of Hypothesis 1.

The cumulative average abnormal return (CAAR) and buy-and-hold return (BHAR) of Chinese concept stocks are calculated by market adjustment model and buy-and-hold return model. The trend of both CAAR and BHAR in the chart remains consistent.Observing the cumulative average abnormal yield curve, it is found that during the event window, the reversion of the A-share market in the concept stocks showed A continuous positive growth trend. On the 18th day after the event, the cumulative average abnormal yield had doubled to 124.56%, becoming a relative high, and then maintained a stable fluctuation trend, reaching the maximum value of 125.4% in the window on the 35th day. After a slight decline, the curve maintained a stable trend. In the returning Hong Kong stock market, the cumulative average abnormal return of the concept stocks on the day of the event and the next day is positive, reaching the lowest value in the window period of -1.07% on the 6th day after the event, then rising rapidly to more than 0%, and maintaining fluctuations in the following trading days, reaching the maximum value of 10.71% in the window period on the 46th day, and then showing a downward trend. By comparing the cumulative average ab normal return of the concept stocks in the Hong Kong stock market and the A-share market, it can be found that the return of the Chinese concept stocks in the A-share market and the Hong Kong stock market can bring significant market return, and the A-share market makes A more rapid and

strong positive reaction to the return of the Chinese concept stocks, and the feedback of the Hong Kong stock market to the return event is relatively lagging.
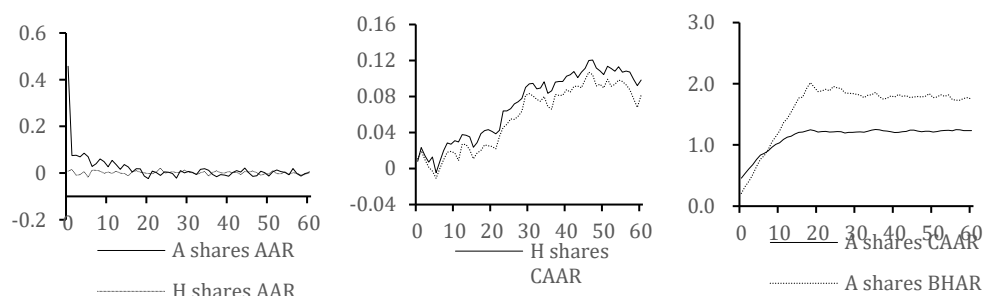

Figure 1: A-share market and Hong Kong stock market AAR, CAAR and BHAR

Table 2 and Table 3 respectively show the CAAR and BHAR of A-share market and Hong Kong stock market in different event Windows and their corresponding t-statistics. By observing the statistical test results in Table 2, it can be found that the CAAR and BHAR of the concept stocks in the A-share market in each event window are significant at the level of 1%. Table 3 shows that the statistical test results of different event Windows are not significant in [0,1], [0,3] and [0,5] Windows, and are significant at the level of more than 5% in [0,10] and subsequent Windows. According to the t-statistic test results of BHAR, except for the Windows in [0,30] and after, which are significant at the level of 5%, other event Windows are not significant. Comparing the CAAR, BHAR and statistical test results of different markets, it can be found that both Hong Kong stock market and A-share market show positive reactions to the return event of Chinese concept stocks. The reaction of Hong Kong stock market to the return event of Chinese concept stocks is relatively small and lags behind, while the reaction of A-share market to the return event of Chinese concept stocks is more severe and lasting longer.

Table 2: CAAR, BHAR and T-statistics for different event windows in A-share market

	CAAR	T-statistics	BHAR	T-statistics
[0,1]	0.5320***	3.6800	0.31682***	5.2107
[0,3]	0.6776***	5.2549	0.51442***	4.2454
[0,5]	0.8328***	7.2801	0.76642***	4.0532
[0,10]	1.0362***	8.8506	1.22822***	4.9291
[0,20]	1.2090***	8.2892	1.87252***	4.7223
[0,30]	1.2114***	9.4265	1.82632***	5.3267
[0,45]	1.2415***	10.9374	1.78382***	5.3969
[0,60]	1.2341***	10.6330	1.75002***	5.9569

Note: *, ** and *** are statistically significant at the level of 10%, 5% and 1%, respectively.

Table 3: CAAR, BHAR and T-statistics for different event windows in Hong Kong stock market

t	CAAR	T-statistics	BHAR	T-statistics
[0,1]	0.0233	0.8522	0.0197	0.8839
[0,3]	0.0071	0.3163	0.0014	0.1258
[0,5]	-0.0046	-0.2214	-0.0107	-0.5641
[0,10]	0.0308**	2.2116	0.0172	1.3535
[0,20]	0.0412**	2.7698	0.0244	1.3493
[0,30]	0.0940***	5.0892	0.0832***	4.0726
[0,45]	0.1113***	4.9251	0.0986***	3.7698
[0,60]	0.0985***	3.3463	0.0816**	2.4944

Note: *, ** and *** are statistically significant at the levels of 10%, 5% and 1%, respectively

Through the market adjustment model, the average abnormal returns of IPO path regression and reverse takeover path regression in the A-share market are obtained, as shown in Figure 2. Observing the average abnormal yield curve, it can be found that on the event day, the average abnormal return of the two indexes fluctuates greatly, and the average abnormal return of the IPO path regression reaches 67.59% in a single day, and the reverse takeover path regression reaches 10.79%. After the event, the A-share market maintained continuous attention to the reverting Chinese concept stocks, and the stock price still had obvious positive fluctuations within A certain period. The one-day average abnormal return of Chinese concept stocks in IPO path regression exceeded 2% in all 11 trading days in [1,11] window, and 7 trading days exceeded 5%. In reverse takeover path regression, the one-day average abnormal return of Chinese concept stocks exceeded 5% in all 19 trading days in [0,18] window, and exceeded 9% in 7 trading days. Within 24 trading days after the regression, the average abnormal returns of the two stocks gradually decline and the reverse takeover path regression of the concept stocks is higher than the ipo path regression of the concept stocks. Then the average abnormal return curve tends to be flat, and the stock price fluctuates around the market return. Comparing the average abnormal returns of the two groups, we find that the abnormal returns of the ipo path regression are much higher than that of the reverse takeover regression on the return day, which has a strong short-term market reaction. In the 24 days after the regression, there was only one day in which the abnormal return exceeded the reverse takeover regression. This shows that the return to the A-share market has A dramatic impact on the stock price of Chinese concept stocks, resulting in a positive abnormal return, which is most significant on the event day.

CAAR and BHAR of IPO path regression and reverse takeover path regression in A-share market calculated by market adjustment model and buy-and-hold return model are shown in the figure. The trend of both CAAR and BHAR in the chart remains consistent, showing an overall upward trend in the event window. Observing the cumulative average abnormal return curve, it can be found that the cumulative average abnormal return of concept stocks in IPO path regression continues to grow after the event, reaching a maximum of 127% on the 15th day, and then maintains a slow and steady decline in the event window. The cumulative average abnormal return of the concept stocks in the reverse takeover path regression reached a relatively high of 154% after 24 trading days of rising period, and then tended to plateau,

reaching 171% on the 59-day period, which was the highest value in the event window. This shows that the reversion of Chinese concept stocks brings high excess stock returns, which greatly increases the market value of listed companies in the short term. By comparing the cumulative average abnormal returns of the two, we find that the reverse takeover path regression of the concept stocks is higher than the IPO path regression of the concept stocks, the former fluctuates in the range of [1.0, 1.5], the latter fluctuates in the range of [1.5,2.0], and the cumulative average abnormal returns of the concept stocks in the reverse takeover path regression maintain an upward trend for longer trading days. Through the above analysis of the trend of cumulative average abnormal return of concept stocks in IPO path regression and reverse takeover path regression respectively, it can be concluded that the A-share market gives A strong positive reaction to concept stocks in different path regression. On the event day, concept stocks in IPO path regression get stronger market feedback, but in the following trading days, The market is more optimistic about the development trend of the concept stocks in the reverse takeover path regression, so Hypothesis 2 is verified.
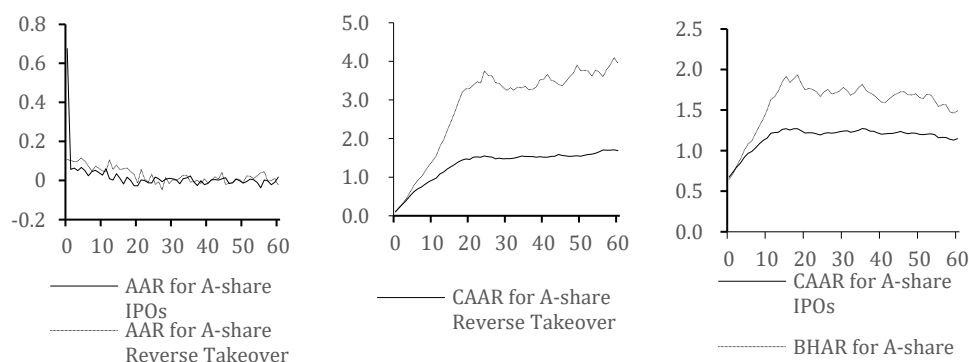
Figure 2: A-share market IPO listing and reverse takeover listing AAR, CAAR and BHAR

Table 4 and Table 5 show the CAAR and BHAR of the reverse takeover path regression and IPO path regression in different Windows and their corresponding t-statistics, respectively. In general, the CAAR and BHAR of concept stocks in reverse takeover path regression and IPO path regression are significantly positive in each event window. From the t-statistics, the cumulative average abnormal return test results of concept stocks in IPO path regression and reverse takeover path regression are all significant at the level of 1%, and the buy-and-hold return also passes the significance test at the level of 1%, 5% and 10%, respectively. The above results show that the concept stocks in different path regression have a significant cumulative effect on the stock market in the short term, and the effect lasts for a long time.

Table 4: CAAR, BHAR and T-statistics for different event windows of reverse takeovers in A-share market

t	CAAR	T-statistics	BHAR	T-statistics
[0,1]	0.2103***	24.5954	0.2096***	38.2302
[0,3]	0.4058***	57.8715	0.4547***	-21.3717
[0,5]	0.6207***	31.6606	0.7857***	102.1205

t	CAAR	T-statistics	BHAR	T-statistics
[0,10]	0.9289***	10.9197	1.4197**	3.5952
[0,20]	1.4588***	7.4739	3.2967**	5.1040
[0,30]	1.4791***	8.5157	3.2507*	3.9069
[0,45]	1.5638***	7.0785	3.3660*	4.2287
[0,60]	1.6860***	9.9206	3.9531**	6.1814

Note: *, ** and *** are statistically significant at the levels of 10%, 5% and 1%, respectively.

Table 5: CAAR, BHAR and T-statistics for different event windows of IPOs in A-share market

t	CAAR	T-statistics	BHAR	T-statistics
[0,1]	0.7331***	3.5280	0.7106**	4.9984
[0,3]	0.8474***	4.4928	0.8971***	7.5841
[0,5]	0.9653***	5.5928	1.0827***	5.2086
[0,10]	1.1540***	6.7673	1.4998***	6.0245
[0,20]	1.2165***	6.9874	1.7494**	6.0739
[0,30]	1.2402***	9.0198	1.7788***	8.1370
[0,45]	1.2362***	9.3234	1.7245***	7.1895
[0,60]	1.1477***	9.6365	1.4913***	7.0511

Note: *, ** and *** are statistically significant at the level of 10%, 5% and 1%, respectively.

4.2 Long-term performance analysis of Chinese concept stock regression

Table 6 shows the enterprise financial performance evaluation index system based on entropy weight TOPSIS model analysis by obtaining the evaluation index data of Chinese concept stock companies in the five years before and after the return to the public market. The index weight reflects the strength of its role in the evaluation of enterprise financial performance. The entropy weight of each third-level index is accumulated to obtain the second-level index weight, which is ranked from large to small: operating capacity weight 0.4561, debt paying ability weight 0.2805, development ability weight 0.1626, profitability weight 0.1009. It can be observed that the main indicators affecting the financial performance evaluation of enterprises are operating ability and debt paying ability, and the total weight of these two criteria accounts for 73.66% of the total weight. From the analysis of the three-level index weight, accounts receivable turnover and quick ratio index weight are 30.52% and 14.91% respectively, which are the two largest indicators in all index layers, and they are the key factors affecting the enterprise financial performance evaluation.

Table 6: Evaluation index system of enterprise financial performance

First-level indi	Weig	Indicator propert	Secondary indicators	Entropy va	Entropy wei
		Moderation indi	Current ratio	0.923	0.125
Solvency	0.287	Moderation indi	Asset liability ratio	0.994	0.010
		Moderation indi	Quick ratio	0.905	0.152
Operating capa	0.444	Positive indicato	Total asset turnover	0.953	0.075

city	Positive indicato	Liquid asset turnover	0.951	0.079
	Positive indicato	Accounts receivable turn	0.820	0.289
	Positive indicato	Operating margin	0.991	0.014
Profitability 0.103	Positive indicato	Return on equity	0.984	0.025
	Positive indicato	Return on total assets	0.968	0.051
	Positive indicato	Net Profit Margin on S	0.992	0.013
	Positive indicato	Net profit growth rate	0.998	0.004
Developing abi lity 0.166	Positive indicato	Total Assets Growth Rat	0.968	0.051
	Positive indicato	Equity capital growth ra	0.931	0.112

Table 7 shows the comprehensive performance closeness of IPO and reverse-takeover path regression in A-share market and IPO and cross-listing path regression in Hong Kong stock market from two years before listing to two years after listing, which are classified by regression path and regression year. Horizontal comparison shows that in the two years before listing and one year before listing, the closest degree of cross-listing path return to the Hong Kong stock market is the highest; In the IPO path return to A-share market, the closeness degree of concept stocks is the lowest. In the year of listing, the closeness degree of the concept stock in the reverse-takeover path regression A-share market jumps to the maximum value of the year. In one year and two years after listing, the closeness degree of concept stocks in each path regression showed a downward trend compared with that in the year of listing. In the Hong Kong stock market, the closeness degree of concept stocks in the cross-listing path regression was the highest in the two years after listing. Then the IPO path returns to the A-share market, and the IPO path returns to the Hong Kong stock market, so Hypothesis 3 is verified.

Vertical comparison shows that IPO path and cross-listing path return to Hong Kong stock market have consistent changes in the comprehensive performance closeness degree before and after listing, and the overall trend tends to be flat, showing a slight fluctuation. Among them, the closeness degree of the concept stocks in the cross-listing path return to A-share IPO listing the Hong Kong stock market remained at about 0.163 in the first two years of listing, and then decreased slightly, and remained at about 0.150 in the two years after listing. In the Hong Kong stock market of IPO path return, the closeness degree of the concept stocks in the IPO path return market shows a downward trend in the process of listing, from 0.108 in the two years before listing to 0.082 in the two years after listing, with a decrease of 0.026. The comprehensive performance closeness degree of IPO path and reverse-takeover path regression in A-share market shows an upward trend from the two years before listing to the listing year, and the increase is obvious in the later period. The closeness degree of IPO path increases from 0.063 in the two years before listing to 0.123 in the listing year. The latter increased from 0.101 to 0.195, with an increase of nearly 100%. Both of them show a downward trend in the two years after the listing, and the closeness degree of reverse-takeover path jumps down in the two years after the listing, which is lower than the level before the listing, and improves and rises in the second year after the listing. In general, the return to the Hong Kong stock market can bring more stable long-term performance, while the overall performance of the concept stocks returning to the A-share market declines after listing. Hypothesis 1 is fully verified. The comprehensive performance level of IPO path and

cross-listing path in the Hong Kong stock market shows a stable trend; In the IPO and reverse-takeover path regression of A-share market, the comprehensive performance level of concept stocks in the A-share market shows A trend of rapid improvement in the early stage and decline after reaching the highest value in the listing year, with a large overall fluctuation range.

Table 7: The closeness degree of concept stocks in different path regression path

Return path	T-2	T-1	T	T+1	T+2
A-share IPO Listing	0.063	0.076	0.123	0.121	0.106
A-Share Reverse Takeover Listing	0.101	0.118	0.195	0.084	0.092
Hong Kong IPO Listing	0.108	0.082	0.094	0.083	0.082
Hong Kong Cross-listing	0.163	0.163	0.165	0.151	0.148

5 CONCLUSIONS AND SUGGESTIONS FOR POLICY OPTIMIZATION

From the aspects of short-term market performance and long-term financial performance, this paper takes the Chinese concept stocks that successfully returned to the A-share market and the Hong Kong stock market after the delisting of the US stock from 2015 to 2020 as the research sample, comprehensively uses the event study method and financial index method to compare and analyze the differences of the Chinese concept stocks returning to the A-share market and the Hong Kong stock market in different paths. The results show that the return of Chinese concept stocks to the A-share market and the Hong Kong stock market has A positive market effect on the short-term market performance. The A-share market has A stronger reaction to the return event, and the abnormal volatility is the most significant on the listing day. There are differences in the degree of impact of different regression paths on stock returns. A-share market reacts quickly and strongly to IPO and reverse-takeover path regression, and obtains significant excess returns, which last for A long time, and reacts more strongly to reverse-takeover path regression. The reaction of Hong Kong stock market to IPO and cross-listing return events is relatively small, and the abnormal fluctuation has a lag, and the market is more optimistic about the development trend of IPO path regression. From the perspective of long-term financial performance, returning Hong Kong stocks can bring more stable long-term performance, while returning A-share concept stocks show overall decline in performance after listing, among which the long-term performance of cross-listing concept stocks in Hong Kong stock market is the best. The research conclusions of this paper provide a reference for selecting the regression path of Chinese concept stocks to be returned. By comparing the listing policies and regulations of Hong Kong stock market and A-share market, based on the above conclusions, this paper puts forward the following three policy suggestions: (1) the proposed regression of Chinese concept stocks needs to choose its own regression path according to its own specific situation, so as to make decisions beneficial to the development of the company. (2) Regulators should promote institutional investors to participate more widely and guide medium - and long-term funds to flow into the capital market, which can

form A strong third-party regulatory force and help ensure the healthy and stable development of the A-share market. (3) In the face of the urgent return of A large number of overseas delisted Chinese companies, we must formulate the corresponding return policy as soon as possible, launch the international board timely, and guide the overseas delisted companies to return to A-share market. Therefore, in view of the current trend of overseas delisting of Chinese companies, regulators should seize the opportunity to attract overseas high-quality companies to return to A-share market, so that domestic investors can also share the huge benefits brought by the rapid growth of these companies.

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