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**The globalization of China stock market**

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by

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## **ABSTRACT**

China stock market is an important component of world capital market, whose globalization can optimize the economic structure. This thesis provides an outlook about the improvement of China stock market globalization. I pick the most representative market liberalization schemes including the Stock Connect Program, QDII and QFII. I use quantitative method by conducting regression analysis and sample difference in mean test. The result shows that mature markets have significant impact on China stock index. The northbound total net buy/sell in Stock Connect is an indicator of the index return. QFII investment confidence and volume affect the market performance. The qualitative method is used for explanation of QDII. As domestic funds investing offshore, QDII has the potential to benefit from the portfolio diversity while face the foreign financial rise. The lack of offshore investment experience also contributes to the poor performance.

## 1.INTRODUCTION

China has the second-largest capital market in the world, whose stock market has great potential to grow. The globalization of the stock market has become an inevitable trend, which is a result of production internationalization and capital integration. Stock investment internationalization is one of the characteristics of stock market globalization. The second is the Internationalization of securities issuance. The third is the globalization of securities intermediary service. The last one is the globalization of the stock market rule and regulation system.

After the 1980's reform and opening up policy, China's economy had experienced rapid growth. At the same time, China gradually has developed its stock market to finance the enterprises and attracted investors to activate the economy and allocate the market capital.

During the globalization process, the stock categories and market variety became more and more diversified. With the integration of the world economy, China stock market has grown to be a major player in emerging markets and showed an essential impact on world capital market.

In 2002, the QFII(Qualified Foreign Institutional Investor) scheme was established, which allowed global institutional investors to invest in domestic. Government initiated the RQFII(RMB Qualified Foreign Institutional Investors) scheme in 2011, which approved subsidiaries of the domestic fund and securities companies in Hong Kong to invest in the domestic security market. During 2018 to 2019, government began to ease the restriction of investment quota for QFII and RQFII, as well as remove the control of RQFII in experimental countries and regions.

In 2014, the Shanghai-Hong Kong Stock Connect Program was established and created a cross-border channel for financing and investment, allowing investors in each market to trade

stock on the other market. After two years, the launch of the Shenzhen-Hong Kong Stock Connect Program further strengthened the scale of market access between the domestic and offshore market. These two programs act as a significant reform and development of globalization of stock markets, improving market structure and investment quality. At the same time, the government set up the QDII(Qualified Domestic Institutional Investor) scheme to open access for domestic investors to the oversea market, which improved the market-oriented reform.

This thesis is significant because it can provide a outlook of the integration of China stock market and international market. With the explanation of market development and quantitative analysis of domestic and worldwide market return, it is significant to understand how China could benefit from the relationship with international stock market. Moreover, the analysis of Stock Connect Program can interpret the how market connection influences the growth of China stock market. Moreover, with the the evidence of numerical analysis, this thesis can find the foreign institutional investors' trading impact by finding the relationship with domestic market performance. This thesis is important also use qualitative analysis to find the QDII's behavior and analyze their advantage and weakness.

Firstly, this paper will analyze the development and trend of China stock globalization, as well as the benchmark events and important openness policy, which aims to find the impact on integration and give the future imagination. It will answer how these liberalization and openness contribute to the growth of China stock market by comparing with the mature market. Secondly, the paper will introduce the mechanism of Stock-Connect Program, taking Shanghai-Hong Kong Program as an example. It would explain the impact of Stock Connect on market performance. Thirdly, the foreign investors' participation in the domestic stock market will be discussed, including their investment behavior, preference and so on.

The last one is the advantage and weakness for QDII, with the answers of how they diversify the portfolio and investment performance.

The rest of this paper proceeds as follows. Section 2 reviews the relevant literature to the globalization of China stock market and the opening of investment channels. Section 3 describes the methodology and data. Section 4 conducts analysis and shows the findings. Section 5 proposes the limitation and recommendation. Eventually I will make a conclusion.

## **2.LITERATURE REVIEW**

### **2.1 The process and trend of China stock market globalization**

#### **2.1.1 The progress of China stock reform and its impact on firms and economy**

China gradually conducted stock market reform in both domestic and international perspectives. The development of China's state-owned enterprises to privatization and capital infusion had an impact on corporate governance, profitability and equity structure. (Carpenter & Whitelaw, 2017). According to their research, along with the growth of stock issuance procedure, Chinese firms had alternative choice to list oversea and issue dual-listed stocks.

For the government side, they started a series of integration actions, which included Shanghai-Hong Kong and Shenzhen-Hong Kong Stock Connect Program to open stock markets with the offshore Exchange. Moreover, the fewer government interventions improved liquidity, price discovery and free capital flow(Carpenter & Whitelaw, 2017), which showed China's confidence and determination in stock market liberation.

Carpenter and Whitelaw(2017) proposed that Chinese economy became more market-oriented and consumption-driven. As the China A shares market was gradually recognized by the world investors, the integration became important and urgent. According to the Reuters(2019), MSCI continued to increase the weight of Chinese domestic stocks in its global index, with the prediction of 600 billion RMB inflow to China stock market. In addition, As Forbes indicated(2019), FTSE has announced that there will be more domestic China stocks added into the emerging market index in 2019 September. Under low valuation of China stock, the FTSE's decision could attract foreign investment to lay out China market. The stock market is the barometer of economy, so the step-by-step globalization would be an instrument to help China build an advanced financial system to support the economy.

However, Liang, Wang and Yang(2018) found out the capital market internationalization increased Chinese companies financing cost by issuing equity. Though China started the QFII scheme for internationalization, the correlation between China's listed companies and international index was low. The asymmetric information was an important factor to explain this phenomenon. For domestic investors who took poor consideration of quality information, the asymmetry caused a higher risk premium, which increased the cost of capital(Liang, Wang & Yang, 2018). The market segmentation from the world market and "home bias" also contributed to the higher cost. Moreover, Liang et al.(2018) found that the domestic investors who demanded a higher return could not diversify the risk. Therefore, the cost of financing of Chinese companies was increasing for the integration into the world market

### **2.1.2 Cross-border stock market integration and openness**

With the gradual removal of restriction on cross-border liberalization, investors had the access to trade both domestic and foreign stocks. The evidence from China stock market globalization policies and actual effects described how to evaluate the integration process.

Chen, He, Ou & Yao(2018) found that the policy of QFII(Qualified Foreign Institutional Investor) and RQFII(RMB Qualified Foreign Institutional Investor) had consistent and positive impact on stock market integration. However, some other financial liberalization measures, such as Shanghai-Hong Kong Stock Connect Program and B shares openness to domestic individual investors, worked in an opposite direction(Chen, He, Ou & Yao, 2018). Meanwhile, according to their research, investors' judgment and motivation in a specific period also explained the abnormal negative impact.

China had gradually played an important role in the international financial market, which brought more concern for investment. Li, Tsai and Wang(2017) suggested that government should implement general policies and decrease unnecessary intervention to avoid abnormal

fluctuation. The improvement of market infrastructure and legal system would make the market more standardized.

### **2.1.3 Risk-sharing and return during the liberalization announcement and implementation**

According to Zemel and Zhang's (2019) research, stock trading volume and price failed to increase with the announcement of Stock Connect. They found evidence that the abnormal return did not reflect a premium for liquidity as expected (Zemel & Zhang, 2019). In their conclusion, the Shanghai-Hongkong Stock Connect opened an access to new market and diversified investment for Chinese investors

In the aspect of risk-sharing, Chan and Kwok (2017) found that "risk-sharing was a significant mechanism of the price revaluation of stocks that became eligible for purchase by foreign investors." During the period of policy announcement and implementation, the stock price made adjustment corresponding to the different industries. The amount of companies' exposure to the market portfolio and market imperfection caused the different reaction of price change. In addition, Chan and Kwok (2017) found that the market liquidity, informed trading and information transparency had an impact on the efficiency of price adjustment. From the perspective of foreign investors, China stock market provided higher average returns, as well as lower correlation with other markets. Reducing the systematic risk and diversifying investment portfolio would create a more stable stock market.

## **2.2 The impact of Stock-Connect Program on market performance**

### **2.2.1 The introduction of Stock-Connect Program**

Stock-Connect Program established a trading interconnection system between the Hong Kong, Shanghai and Shenzhen Stock Exchanges, referring that international and domestic investors could trade stocks within a specific scope in the opposite market.

Stock-Connect Program was a benchmark event in stock globalization reform. Both retail investors and institutional investors could equally participate into this program, which expanded the fund pool and increased market liquidity. Moreover, investors could diversify their portfolios by the Stock-Connect. Domestic investors had access to Hong Kong market(Southbound), while Hong Kong and oversea investors can trade Domestic A shares(Northbound).

Every coin has two sides, according to the White paper issued by Asifma and Thomson Reuters, Stock-Connect Program faced challenge including different settlement systems. These international investors may face counterparty risk and trade delay. Quota limit also caused execution risk which investors may fail to finish buy order on time.

With the improvement of Stock-Connect, China stock market would be introduced to international institutional and individual investors, potentially speeding up the growth of investment environment.

### **2.2.2 The impact of Stock Connect on domestic and Hong Kong markets**

Ahmed and Huo(2017)found that Stock-Connect played a significant role in the domestic stock market. Hong Kong stock market reacted more sensitive comparing to Shanghai market. The conditional volatility level in both markets had increased. Besides, Chinese domestic market had a leading effect to Hong Kong market in return and volatility spillover effects(Ahmed & Huo, 2017). The interconnection increased the market efficiency and activeness, as well as information transparency. Besides, these valuable experience would contribute to the further liberalization of China stock market.

Based on the study of Bai and Chow(2017), the Stock-Connect Program had an asymmetric impact on the domestic and Hong Kong market. As an offshore RMB financial market, Hongkong acted as an intermediary role in globalization of domestic stock. Though both

markets faced more uncertainties, there were more information sharing and investment opportunities. In the short term, the domestic market moved in a trend with the expectation of Stock-Connect. In the medium term, market size and liquidity would increase, though the market faced more systematic risks (Bai & Chow, 2017), investors' confidence and government determination have improved the market environment.

### **2.2.3 Stock co-integration and performance**

Chong and Wang (2018) made the research showing that both domestic A-shares and Hong Kong H-shares stock (Chinese domestic companies listed on the Hong Kong Stock Exchange) have integrated in Stock-Connect Program, which attracted cross-border capital and activated the market.

In the aspect of stock performance, the connected stocks had short-term volatility but better quality than non-connected stocks. Chong and Wang (2018) found that these stocks "experience significantly lower quoted spread and higher market depth".

Chong and Wang (2018) found that trading volume and frequency increased after the Stock-Connect Program. The competition between domestic retail investors and foreign investors strengthened the capital flow and liquidity, which eventually decreased the trading costs.

## **2.3 The impact of foreign institutional investors on China stock market**

### **2.3.1 The introduction of QFII and RQFII**

QFII is the abbreviation of Qualified Foreign Institutional Investor. This scheme was firstly introduced in 2002 as a transitional program that allowed foreign institutional investors who met the Stock Exchange's requirement to directly invest in certain securities on the China domestic stock market. As time went on, the government gradually loosened the limitation on QFII's quota and ownership on shares, as well as made wider range of securities.

With the progress of market openness, RQFII scheme(RMB Qualified Foreign Institutional Investor)was established in 2011, allowing the selected institutional investors use RMB funds in Hong Kong subsidiaries to invest China A-shares.

In September 2019, the government eventually removed the investment quota limitation on QFII and RQFII, which was a signal of the further market liberalization. Foreign investors have been playing a more and more important role in China stock market growth.

QFII and RQFII schemes aimed to improve the quality of the domestic market with the participation of medium and long-term investors rather than speculative capital. To avoid the risk of losing control of the market, the regulators sought to create a transparent legal environment that had frequent communication with the public about the regulation enforcement and policy implementation(Ni, 2009).

### **2.3.2 Foreign institutional investors' contribution to China domestic stock market**

QFII was a transitional approach to market globalization, which indicated the government's determination to attract long-term investment and learn from the global standard investment methodology and skills(Li, Tam, Yu & Zhang, 2010). QFII's strategies were gradually accepted by the investors, which created a healthy market environment with fewer volatilities. The current removal of limitations of QFII and RQII would be an essential opportunity for the integration of domestic market.

As the research of Bohl and Schuppli(2010) showed, the foreign institutional investors stabilized domestic stock market and improved the efficiency. The openness of foreign investors decreased speculative threats and created a sustainable market environment.

### **2.3.3 foreign institutional investors' preference**

Both traditional and modern industries provided foreign investors opportunities. They had an advantage over the domestic retail investors in a more rational and less volatile market.

Moreover, foreign institutional investors valued responsibility and transparency of domestic companies, as well as the securities law.

## **2.4 Opportunity and challenge for QDII**

### **2.4.1 The introduction of QDII and development of outward investment**

Qualified Domestic Institutional Investor, named as QDII, was a scheme that offered the specific domestic institutional investors to invest in securities outside of the domestic market. China Securities Regulatory Commission provided a limited channel such as funds and banks to invest oversea.

The outward investment could accumulate experience and technique to improve the domestic stock market. From the perspective of long-term interest, China should make progress of QDII for direct and portfolio investments.

According to Wu's(2010) study, Chinese investors could benefit from the diversified portfolio. With the same or even less risk, investors could get the same level of return through the QDII products, which encourage the further development of the QDII market.

### **2.4.2 QDII fund investment performance and lessons**

As an essential role of the China stock market globalization, the QDII funds had unsatisfied performance, which led to capital outflow and reduced investors' confidence.

There were "home bias" of QDII to invest in Hong Kong market because the fund managers were lack of experience of foreign market investment, which reduced the diversification of investment(Wu & Zhen, 2012).

Actually, using the QDII fund in a right way could bring higher return with lower risk because of the rational asset allocation and global portfolio diversification(Chen & Zhang, 2012). To guide the QDII industry in a sustainable track, regulators should use tax incentive policy and encourage state-owned institutions to invest in QDII funds. The improvement of public

financial literacy of risk management also contributed to the growth of QDII fund. The government had own responsibility to attract competent managers to operate the fund. Together with the lift of restriction on investment scope and instruments, the QDII funds would have more flexibility to invest and accumulate enough experience(Wang & Yao, 2012).

### **3.METHODOLOGY & DATA**

In the methodology and data section, I quantify the first research question of China stock market globalization development into the relationship between Chinese stock market index and MSCI world index using regression analysis and sample difference in means test. For the second question of Stock Connect, I find the key variable including turnover and net buy/sell to run multiple regression analysis and determine their impact on China stock market index. For the third question of foreign institutional investors, the QFII quota index which I collect can be used with the China stock market index to find their relationship by regression analysis. For the last question of QDII, I use descriptive method to analyze its advantages and weakness.

#### **3.1.Discussion of data and sample**

I get the daily CSI 300 index from Bloomberg which represents the performance of top 300 stocks in the Shanghai and Shenzhen stock exchanges in recently five years. These data could describe the stock index return and give a constant information of the market performance. In addition, Bloomberg provides me with the MSCI World index which reflects the performance of international stock market. I could calculate the monthly change in both indices, then put them in regression model and difference in means test. For the research of stock connect, I collect data of total turnover and net buy or sell from both southbound(money from mainland to Hong Kong)and northbound(money from Hong Kong to mainland) in Bloomberg. Market turnover equals to the total volume of stock trading in a particular time period divided by the total amount of shares outstanding. High turnover means investors are willing to trading the stock which reflects the market enthusiasm. Net buy or sell is the difference between the money inflow and outflow which influence the movement of stock market index. I also find the data of QFII quota index, which reflects foreign institutional investment in China.

The first sample which I plan to use is the monthly changes of CSI index. It can accurately describe the overall market condition in China stock market. I choose the samples for recent five year period because Chinese stock market entered into a new stage of openness with the Stock Connect Program started on November, 2014. After the establishment of the program, international investment could flow into domestic market more and more freely from Hong Kong. The other corresponding sample I use is the monthly change in MSCI world index, which reflects the international stock market performance. The analysis of world index and CSI index can provide answer to the research question of the globalization of China stock market.

The samples in stock connect which I will use is the northbound total turnover and net buy/sell. Because these samples show the international investment to China domestic stock market by Stock Connect Program. Turnover is a measurement of stock liquidity which reflects how easily the stock can be traded. The net buy/sell indicates the actual amount of investment in the market.

As for the research question of foreign institutional investors, I use the sample of monthly changes in QFII quota index from 2014. These samples can give a picture of foreign institutional investors trading information. In the regression analysis, these samples can be used with monthly change in China stock market index.

These dataset and sample calculation results are showed in appendix.

### **3.2. Discussion of methodology and model**

For the first research question of China stock market globalization, I will use the regression analysis to find the relationship of monthly change in China CSI 300 index and MSCI World index. To find the movement of both two indices, the regression analysis can determine how much is the impact of the independent variable has on dependent variable (Anderson, Sweeney, & Williams, 2012). I will also conduct difference in means test to find whether there

are significant difference in the average value of two samples, which could provide the information of means and standard deviation.

The second research is about Stock Connect Program and China stock market performance. Because there are two variables including turnover and net buy/sell, I will use multiple regression analysis to consider two factors which influence the CSI index and obtain more accurate estimation than simple linear regression (Anderson, Sweeney, & Williams, 2012).

The third question is the impact of foreign institutional investors on China stock market. I will use regression analysis to find the relationship between QFII quota index and CSI 300 index.

For the first question, I will set up a regression model describing how monthly changes in MSCI world index affects the monthly changes in CSI 300 index. The equation is as following:  $y_1 = a + \beta_0 x_1 + \varepsilon_1$ ,  $y_1$  is the dependent variable as the CSI index and  $x_1$  is the independent variable as the MSCI world index.  $\beta_0$  is the parameter of the model which reflects how much  $y_1$  changes as  $x_1$  changes. Here is the  $H_0$ : MSCI index has no significant impact on CSI 300 index.

For the difference in means test, I used a Two-Samples assuming Unequal Variances test. The null hypothesis is there is no difference in mean return of two indices. I will check the P value with the significance level, as well as the value difference of t Stat and t Critical two-tail.

The model for the stock connect is multiple regression as following:  $y_2 = b + \beta_1 x_2 + \beta_2 x_3 + \varepsilon_2$ ,  $y_2$  is the monthly changes of CSI 300 index as a dependent variable.  $x_2$  is the total turnover, and  $x_3$  is the net buy/sell as two independent variables. My null hypothesis is that  $H_0$ : total turnover and net buy/sell of Northbound stock connect has no significant impact on monthly change of CSI 300 index.

My model for QFII and CSI index is regression model as following:  $y_3 = c + \beta_3 x_4 + \epsilon_3$   $y_3$  is the monthly return of CSI index as a dependent variable, while  $x_4$  is the independent variable of monthly change in QFII quota index. Here is the  $H_0$ : RQFII quota index has no significant impact on CSI index.

#### 4.ANALYSIS AND FINDINGS

In the previous section, I have collected the data of CSI 300 index and MSCI World index, then calculated their monthly return since October 2014. I will put these sample into the regression model to find their relationship. In addition, the sample difference in mean test is used to find whether there is a significant difference between two indices. Besides, I have found the data of Stock Connect Program and extracted the sample of Northbound total turnover and net buy/sell. I will use multiple regression model to test their relationship. Moreover, I get and will use its monthly change of the QFII quota index and CSI 300 index in regression model to determine the QFII impact on China stock market.

##### 4.1 The relationship between CSI index and MSCI index

For the regression result of the first question, the p-value in the t test is  $6.08383^{-5}$ , which is much less than the level of significance  $\alpha = 0.1$ . For the F test, the corresponding p value  $6.08383^{-5}$  is less than 0.1. As a result, we can reject the null hypothesis and conclude the MSCI world index has a significant impact on CSI index. In addition, the R square is 0.244 and the coefficient is positive. So, we can have an additional finding MSCI world index is positively related to CSI 300 index. For the sample difference in means, the p value of t test is 0.639, which is larger than  $\alpha = 0.1$ . It indicates there is no significant difference between two indices mean returns. Both regression analysis and t test shows China stock has gradually been integrated in world stock market. The MSCI world index, which reflects the performance of large and mid cap representative stocks in developed market, has positive relationship with CSI 300 index of China top quality stocks. This result shows the development of China stock market is in an international track. The mature stock market have significant impact on China market, which is a signal that the China stock market is not isolated and it will play a important role in international financial stage.

**Table1. Regression result of MSCI World index and CSI 300 index**

Significance F	Coefficients	t Stat	P-value
6.08383E-05	1.088	4.325	6.08383E-05

**Table2. t-Test: Two-Sample Assuming Unequal Variances**

t Stat	P(T<=t) two-tail	t Critical two-tail
-0.471	0.639	1.99

#### **4.2 The relationship between Stock Connect and CSI 300 index**

In the multiple regression model of the second question, the Significance F value for overall significance is 0.049, which is smaller than  $\alpha = 0.1$ . As it shows, there is a significant relationship between CSI 300 index and Stock Connect Program. However, the p value of total northbound turnover is 0.532 which is above the significance level of 0.1. It indicates the single turnover has no significant impact on CSI index. In contrast, the p value of total northbound net buy/sell is 0.015 which is smaller than 0.1. Therefore, we can reject the hypothesis that net buy/sell has no significant impact on CSI index.

According to the the report of *eastspring investment*, Stock Connect inflow is positive related with the performance of large-cap A-shares in China which dominate CSI 300 index. They have similar trend because those foreign investors in Stock Connect are more attracted by Blue-chip share stocks. My finding is partially consistent with the report. On the one side, the northbound capital is the barometer of market emotion, which can lead the representative performance of China stock index. On the other side, Chen et al.(2018)'s research indicated the openness of Shanghai-Hong Kong Stock Connect to the domestic retail investors had negative impact on the stock integration. From the regression result, the coefficient of northbound

turnover has negative relationship with stock market index. The domestic retail investors who dominate the China stock market has the trading habit as frequent sell and buy which is a obstacle of market integration.

**Table3. Regression result of the northbound turnover and net buy/sell with CSI 300 index**

Significance F	Independent variables	Coefficients	t Stat	P-value
0.019	Total northbound turnover	-2.14615E-05	-0.629	0.532
	Total northbound Net buy/sell	0.001	2.505	0.015

#### 4.3 The relationship between QFII quota index and CSI 300 index

For the third research question, the QFII quota index shows the amount of QFII investment and reflects foreign institutional investors' confidence on China stock market. Together with the monthly return of CSI 300 index, the regression model provides that the p value is 0.014, which is less than significance level  $\alpha = 0.1$ . The result rejects the null hypothesis and the conclusion is the QFII index has significant impact on CSI 300 index. My finding is consistent with Tong's(2018) research, QFII prefer investing in well-performed and large-cap stocks which are the major components of CSI 300 index. In addition, QFII have played an important role of increase the market liquidity and stock quality.

The last research question is the advantage and weakness of QDII. QDII use investors' funds in offshore markets to get excess return than sole domestic market. Since lots of high quality companies are listed offshore, even the domestic internet enterprises like Alibaba choose the U.S. and Hong Kong to issue stocks, QDII could benefit from the global financial development. In addition, the QDII provide investors a diversified portfolio to reduce the domestic market risk. However, there are some weakness which should be aware of. Obviously, QDII need foreign exchange to make investment, which are exposed to the foreign currency exchange

rate risk. Besides, the information asymmetry and lag negatively affect the investment accuracy. Due to the lack of oversea investment experience, the QDII managers have unsatisfied selectivity and market timing skills(Chen, Jun & Zhang, 2012). With the improvement of international investment tools and strategy, the future of QDII could be bright and they will provide significant return for investors.

**Table4. Regression result of QFII quota index and CSI 300 index**

Significance F	Coefficients	t Stat	P-value
0.014	1.399	2.532	0.014

#### **4.4 Limitation**

A limitation of this thesis is that I tested the relationship between developed stock market with China stock market, but ignored the comparation among other developing countries. For the Stock Connect, there are more variables which can influence the China stock index performance including the policy and market reform. They are difficult to be transformed into quantified data.

Moreover, the data of QFII is insufficient because the QFII scheme was launched before 2014. The longer period of data and larger sample size can improve the accuracy of numerical analysis.

#### **4.5 Recommendation**

The globalization process of China stock market can be separated into more specific research questions for different period of time. For the Stock Connect Program, the following research could emphasize on the international capital investment behavior and the effect to the growth of the domestic market. The foreign institutional investors' impact on China stock

market can be furtherly researched due to China government recently removed the quota limitation of QFII and RQFII.

## 5.CONCLUSION

In the economic globalization, stock market plays a significant role in the adjustment of industries' development. With the openness and government encouragement, China stock market has gradually integrated in the world capital market. The world major developed stock index has a significant impact on China representative stock index, which indicates the of China stock grow to a more and more mature domestic market. After the Stock Connect Program launched, the international investment can directly participate in the domestic market bringing fresh blood and advanced investing strategy. The northbound capital has a preference of large and mid cap industry leading stocks which compose the CSI 300 index. As a result, the northbound trading data like net buy and sell has a significant impact on CSI 300 index. In addition, QFII quota index which represents foreign investors expectation of China stock has a positive significant impact on CSI 300 index and these foreign institutional investors improve the market quality. QDII, as the funds investing in the offshore markets, has a large room for development. The diversified investment is available to earn returns from international finance development, while the uncertainty of foreign market and information problem should be aware of.

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## **7.TABLES AND FIGURES**

**Table1. Regression result of MSCI World index and CSI 300 index**

**Table2. t-Test: Two-Sample Assuming Unequal Variances**

**Table3. Regression result of the northbound turnover and net buy/sell with CSI 300 index**

**Table4. Regression result of QFII quota index and CSI 300 index**

## 8.APPENDIX

**Table. CSI 300 index, MSCI World index, Stock Connect and QFII index dataset**

CSI 300 index			MSCI World index			Stock Connect			QFII quota index		
Date	Monthly change		Date	Monthly change		Date	Total Northbound Turnover	Total Northbound Net Buy/(Sell)	Date	Monthly change	
2014/10/31	2508.32		2014/10/31	1708.09					10/2014	55.39	
2014/11/28	2808.82	0.11980	2014/11/28	1739.5	0.01839	11/2014	46.58919	40.55423	11/2014	59	0.06517
2014/12/31	3533.71	0.25808	2014/12/31	1709.67	-0.01715	12/2014	120.92262	28.01624	12/2014	61.09	0.03542
2015/1/30	3434.39	-0.02811	2015/1/30	1677.54	-0.01879	1/2015	99.88684	11.32132	1/2015	63.51	0.03961
2015/2/27	3572.84	0.04031	2015/2/27	1772.86	0.05682	2/2015	67.49263	15.74807	2/2015	67.57	0.06393
2015/3/31	4051.2	0.13389	2015/3/31	1740.81	-0.01808	3/2015	135.61961	10.34023	3/2015	72.15	0.06778
2015/4/30	4749.89	0.17246	2015/4/30	1778.4	0.02159	4/2015	155.1121	-3.57634	4/2015	73.62	0.02037
2015/5/29	4840.83	0.01915	2015/5/29	1779.31	0.00051	5/2015	153.46905	17.14285	5/2015	74.47	0.01155
2015/6/30	4473	-0.07598	2015/6/30	1735.61	-0.02456	6/2015	227.2144	5.89352	6/2015	75.54	0.01437
2015/7/31	3816.7	-0.14672	2015/7/31	1765.6	0.01728	7/2015	196.28394	-31.49408	7/2015	76.58	0.01377
2015/8/31	3366.54	-0.11794	2015/8/31	1645.43	-0.06806	8/2015	120.71068	21.43152	8/2015	76.7	0.00157
2015/9/30	3202.95	-0.04859	2015/9/30	1581.92	-0.03860	9/2015	76.32288	3.85556	9/2015	78.77	0.02699
2015/10/30	3534.08	0.10338	2015/10/30	1705.8	0.07831	10/2015	70.90812	-4.4811	10/2015	78.97	0.00254
2015/11/30	3566.41	0.00915	2015/11/30	1694.4	-0.00668	11/2015	100.96964	-16.54608	11/2015	79.1	0.00165
2015/12/31	3731	0.04615	2015/12/31	1662.79	-0.01866	12/2015	62.52733	-5.22667	12/2015	81.07	0.02491
2016/1/29	2946.09	-0.21038	2016/1/29	1562.18	-0.06051	1/2016	63.77294	3.5975	1/2016	80.8	-0.00333
2016/2/29	2877.47	-0.02329	2016/2/29	1547.17	-0.00961	2/2016	44.12314	0.00032	2/2016	80.8	0.00000
2016/3/31	3218.09	0.11837	2016/3/31	1648.12	0.06525	3/2016	83.18825	10.82643	3/2016	80.95	0.00186
2016/4/29	3156.75	-0.01906	2016/4/29	1670.8	0.01376	4/2016	58.72512	2.12916	4/2016	81	0.00062
2016/5/31	3169.56	0.00406	2016/5/31	1674.61	0.00228	5/2016	44.48092	3.86312	5/2016	81.1	0.00123
2016/6/30	3153.92	-0.00493	2016/6/30	1653.23	-0.01277	6/2016	53.29501	2.34971	6/2016	81.18	0.00099
2016/7/29	3203.93	0.01586	2016/7/29	1721.79	0.04147	7/2016	57.9	8.74854	7/2016	81.38	0.00246
2016/8/31	3327.79	0.03866	2016/8/31	1719.52	-0.00132	8/2016	69.54767	14.91699	8/2016	81.48	0.00123
2016/9/30	3253.28	-0.02239	2016/9/30	1725.67	0.00358	9/2016	60.76518	-1.36988	9/2016	81.74	0.00319
2016/10/10	3293.87	0.01248	2016/10/10	1690.92	-0.02014	10/2016	43.40327	3.77199	10/2016	84.44	0.03303
2016/11/30	3538	0.07412	2016/11/30	1712.09	0.01252	11/2016	84.06521	5.12675	11/2016	86.41	0.02333
2016/12/30	3310.08	-0.06442	2016/12/30	1751.22	0.02286	12/2016	108.19646	6.71866	12/2016	87.31	0.01042
2017/1/26	3387.96	0.02353	2017/1/26	1792.4	0.02352	1/2017	85.27133	9.63943	1/2017	87.31	0.00000
2017/2/28	3452.81	0.01914	2017/2/28	1838.7	0.02583	2/2017	99.85375	25.80065	2/2017	89.21	0.02176
2017/3/31	3456.05	0.00094	2017/3/31	1853.69	0.00815	3/2017	155.96854	11.1712	3/2017	90.26	0.01177
2017/4/28	3439.75	-0.00472	2017/4/28	1878.28	0.01327	4/2017	129.04562	10.01636	4/2017	90.76	0.00554
2017/5/31	3492.88	0.01545	2017/5/31	1911.74	0.01781	5/2017	145.6905	17.74372	5/2017	92.72	0.02160
2017/6/30	3666.8	0.04979	2017/6/30	1916.43	0.00245	6/2017	193.731466	22.11959	6/2017	92.77	0.00054
2017/7/31	3737.87	0.01938	2017/7/31	1961.1	0.02331	7/2017	174.427275	22.412599	7/2017	93.27	0.00539
2017/8/31	3822.09	0.02253	2017/8/31	1959.74	-0.00069	8/2017	208.6785125	27.028644	8/2017	93.99	0.00772
2017/9/29	3836.5	0.00377	2017/9/29	2000.55	0.02082	9/2017	220.7681502	20.808138	9/2017	94.49	0.00532
2017/10/31	4006.72	0.04437	2017/10/31	2036.8	0.01812	10/2017	231.5885539	11.822724	10/2017	94.49	0.00000
2017/11/30	4006.1	-0.00015	2017/11/30	2077.36	0.01991	11/2017	373.4936506	12.60887	11/2017	96.79	0.02434
2017/12/29	4030.85	0.00618	2017/12/29	2103.45	0.01256	12/2017	246.808215	8.565452	12/2017	97.16	0.00382
2018/1/31	4275.9	0.06079	2018/1/31	2213.24	0.05220	1/2018	410.5864669	35.107554	1/2018	97.16	0.00000
2018/2/28	4023.64	-0.05900	2018/2/28	2117.99	-0.04304	2/2018	328.7933729	-2.629569	2/2018	99.16	0.02058
2018/3/30	3898.5	-0.03110	2018/3/30	2066.84	-0.02415	3/2018	343.0828578	9.712548	3/2018	99.36	0.00202
2018/4/27	3756.88	-0.03633	2018/4/27	2086.51	0.00952	4/2018	335.435132	38.649174	4/2018	99.46	0.00101
2018/5/31	3802.38	0.01211	2018/5/31	2092.92	0.00307	5/2018	372.0125104	50.851234	5/2018	99.46	0.00000
2018/6/29	3510.99	-0.07663	2018/6/29	2089.3	-0.00173	6/2018	437.0845361	28.492551	6/2018	100.46	0.01005
2018/7/31	3517.66	0.00190	2018/7/31	2153.1	0.03054	7/2018	411.5373779	28.475547	7/2018	100.46	0.00000
2018/8/31	3334.5	-0.05207	2018/8/31	2175.5	0.01040	8/2018	462.1316492	35.452558	8/2018	100.46	0.00000
2018/9/28	3438.86	0.03130	2018/9/28	2184.01	0.00391	9/2018	309.9570258	17.579031	9/2018	100.16	-0.00299
2018/10/31	3153.82	-0.08289	2018/10/31	2021.98	-0.07419	10/2018	421.1376577	-10.52867	10/2018	100.26	0.00100
2018/11/30	3172.69	0.00598	2018/11/30	2041.36	0.00958	11/2018	477.1437558	46.912389	11/2018	100.56	0.00299
2018/12/28	3010.65	-0.05107	2018/12/28	1883.9	-0.07713	12/2018	364.9304457	16.142447	12/2018	101.06	0.00497
2019/1/31	3201.63	0.06343	2019/1/31	2028.49	0.07675	1/2019	478.1650665	60.688031	1/2019	101.35	0.00287
2019/2/28	3669.37	0.14609	2019/2/28	2085.84	0.02827	2/2019	602.0661018	60.391459	2/2019	101.45	0.00099
2019/3/29	3872.34	0.05531	2019/3/29	2107.74	0.01050	3/2019	1153.993817	4.356227	3/2019	101.6	0.00148
2019/4/30	3913.21	0.01055	2019/4/30	2178.67	0.03365	4/2019	1115.803973	-17.996362	4/2019	105.8	0.04134
2019/5/31	3629.79	-0.07243	2019/5/31	2046.25	-0.06078	5/2019	868.452198	-53.673596	5/2019	105.8	0.00000
2019/6/28	3825.59	0.05394	2019/6/28	2178.35	0.06456	6/2019	698.3193934	42.6046	6/2019	107	0.01134
2019/7/31	3835.36	0.00255	2019/7/31	2187.56	0.00423	7/2019	702.3070647	12.024429	7/2019	108.58	0.01477
2019/8/30	3799.59	-0.00933	2019/8/30	2138.52	-0.02242	8/2019	869.0918931	13.206968	8/2019	111.38	0.02579
2019/9/30	3814.53	0.00393	2019/9/30	2180.02	0.01941	9/2019	894.919535	64.659391	9/2019	111.38	0.00000
2019/10/31	3886.75	0.01893	2019/10/31	2233.53	0.02455	10/2019	679.0214943	32.051052	10/2019	111.38	0.00000

Source: Revised from Bloomberg