The Impact of the Macroeconomic Indicator Announcements on the Volatilities of Equity Mutual Fund NAV: A Case Study of 10 Equity Mutual Funds in China During the Period 2016 to 2016

Ms. Yugi Dong

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Business Administration in Finance
Graduate School of Business
Assumption University
Academic Year 2017
Copyright of Assumption University
The impact of the macroeconomic indicator announcements on the volatilities of equity mutual fund NAV: A case study of 10 equity mutual funds in China during the period 2010 to 2016

By
Ms. Yuqi Dong

A thesis is submitted in a fulfillment of the requirement for The Master’s Degree of The Business Administration

Graduated School of Business
Assumption University
2017
The impact of the macroeconomic indicator announcements on the volatilities of equity mutual fund NAV: A case study of 10 equity mutual funds in China during the period 2010 to 2016

By
Ms. Yuqi Dong

A thesis submitted in partial fulfillment of the requirements for The Master’s Degree of The Business Administration

Examination Committee:
1. Dr. Witsaroot Pariyaprasert (Advisor) ..........................................................
2. (Chairman) ..........................................................
3. (Member) ..........................................................
4. (Member) ..........................................................
5. (External Member) ..................................................

The Master’s Degree of the Business Administration in Finance
Graduated School of Business
Assumption University
2017
Thesis Title: The Impact of the Macroeconomic Indicator Announcements on the Volatilities of Equity Mutual Fund NAV: A Case Study of 10 Equity Mutual Funds in China During the Period 2010 to 2016

By: Ms. Yuqi Dong
Major: Finance
Thesis Advisor: Witsaroot Pariyaprasert, Ph.D.
Academic Year: 2017

The Graduate School of Business, Assumption University, has approved this thesis as a partial fulfillment of the requirements for the Degree of Master of Business Administration in Finance.

Dean of the Graduate School of Business
(Kitti Phothikitti, Ph.D.)

THESIS EXAMINATION COMMITTEE

Chairman (External)
(Associate Professor Wirachai Sanguanwongwan)

Thesis Advisor
(Witsaroot Pariyaprasert, Ph.D.)

Member
(Apichart Intravisit, Ph.D.)

Member
(Joan Voicu, Ph.D.)

Member
(Vorapot Ruckthum, Ph.D.)
ABSTRACT

The objective of this paper is to examine the relationship between US macroeconomic news announcement surprises and NAVs volatilities of equity mutual fund during period 2010 to 2016 evidence from China.

These data were collected by monthly data from January 2010 to June 2016 and which consisted of eleven macroeconomic surprise variables. These independent variables were Nonarm Payrolls, CPI, GDP QoQ, Unemployment Rate, Retail Sales & Food Services Total MoM, Housing Starts Number MM, PMI Chicago, Import Price Index, Industrial Production, CCI and Durable Goods Orders. For the independent variables, the surprise value of each macroeconomic is utilized, based on the difference between forecasting value and actual release value from Thomson Reuter. And the depend variables are collected from Sina Finance which is the most influent mainstream media in China. The approach captures the macroeconomic announcements and the ARMA, GARCH type models known from monthly NAV which is top ten equity mutual fund in term of sizing.

For the empirical results showed the significant relationship between the independent variables and dependent variable at 5% level of confidant or 0.05 level of confidant. Our result show that most of US macroeconomic announcements have more or less significant relationship with NAVs volatilities of Chinese equity mutual fund. Several of them like GDP, House starting, Nonfarm payroll, PMI Chicago and Unemployment rate have a strong significant effect on the NAVs volatilities; Consumer price index, Retail sales, Import price index and Consumer confidence index have a weak significant relationship between them.
ACKNOWLEDGEMENTS

I am grateful and I would like to express my sincere thanks to my thesis advisor, Dr. Witsaroot Pariyaprasert for the good suggestion to do this research and helps me to solve many problems in this research. He gives me the knowledge and many ideas to do this research. Furthermore, he gives me a great chance and support to complete this thesis.

In addition, I am grateful for the committee members for giving me useful comments and recommendations that have helped to improve this research.

I would like to thank my lovely friends who have helped and supported me in everything for the time period of this research.

And I am most grateful to my beloved family who encourage me in everything. Finally, I would like to appreciate everyone again for support in everything to complete this thesis.

Yuqi Dong
July, 2017
TABLE OF CONTENTS

ABSTRACT...............................................................................................................................i
AKNOWLEDGEMENTS.........................................................................................................ii
TABLE OF CONTENTS.........................................................................................................iii
List of Tables............................................................................................................................vi
List of Figures..........................................................................................................................xiv

CHAPTER I GENERALITIES OF THE STUDY ....................................................................1
1.1 Introduction to the Study ...............................................................................................1
1.1.1 Equity mutual fund .................................................................................................1
1.1.2 Mutual fund in China .............................................................................................2
1.1.3 Equity mutual fund in China ..................................................................................4
1.1.4 U. S. Macroeconomic announcement .....................................................................4
1.2 Objectives of the Study ...............................................................................................5
1.3 Statement of the Problem ............................................................................................7
1.4 Scope of the Research ..................................................................................................8
1.5 Limitations of the Study ..............................................................................................9
1.6 Significance of the Study ............................................................................................10
1.7 Definitions of Terms ...................................................................................................11
1.8 List of Abbreviations in the Research .......................................................................14

CHAPTER II LITERATURE REVIEW ..............................................................................15
2.1 Explanation of Dependent Variable ............................................................................15
2.2 Explanation of independent variables .........................................................................16
2.2.1 Nonfarm Payroll ....................................................................................................16
2.2.2 Consumer Price Index-CPI ...................................................................................16
2.2.3 Gross Domestic Product .......................................................................................17
2.2.4 Unemployment rate .............................................................................................17
2.2.5 Retail sales ............................................................................................................17
2.2.6 Housing starts .......................................................................................................17
2.2.7 Purchasing manager index ....................................................................................18
2.2.8 Import price index ...............................................................................................18
2.2.9 Industrial production ............................................................................................18
2.2.10 Consumer confidence index ..............................................................................18
2.2.11 Durable goods orders .................................................................19
2.3 Previous studies ...........................................................................19

CHAPTER III RESEARCH FRAMEWORK ............................................33
3.1 Theoretical Framework find .........................................................33
3.2 Conceptual Framework ...............................................................33
3.3 Research Models .........................................................................35
3.4 Hypotheses ................................................................................37

CHAPTER IV RESEARCH METHODOLOGY ......................................67
4.1 Data source and data collection ....................................................67
  4.1.1 Chinese equity mutual fund variables and collection .............68
  4.1.2 Monthly US macroeconomic announcements variables and collection ........68
4.2 Research Method ............................................................................69
  4.2.1 The Autoregressive (AR) Model ............................................70
  4.2.2 The Moving Average (MA) Model .........................................71
  4.2.3. The Auto Regressive Moving Average (ARMA) Model .........71
  4.2.4 The Autoregressive Conditional Heteroscedasticity (ARCH) model ........72
  4.2.5 The Generalized ARCH (GARCH) Model .........................72
  4.2.6. The Exponential GARCH (EGARCH) Model ....................72
4.3 The Statistical Data Treatments .....................................................73
  4.3.1 Data stationary testing..........................................................73
  4.3.2 ARMA model estimation ......................................................74
  4.3.3 The developing process of GARCH-typed models .................74
  4.3.4 Summaries of Statistical Data Treatments .........................76

CHAPTER V PRESENTATION OF DATA AND CRITICAL DISCUSSION OF RESULTS ..........................................................................................................................79
5.1 Descriptive Statistics ....................................................................80
5.2 Statistical Data Treatment .......................................................... Error! Bookmark not defined.
5.3 Result of Hypothesis .....................................................................81

CHAPTER VI SUMMARY FINDINGS, CONCLUSIONS AND RECOMMENDATIONS82
6.1 Summary of Findings ...................................................................83
6.2 Discussions and Conclusions .......................................................83
  6.2.1 Consumer Price Index Discussion .....................................84
  6.2.2 Import price Discussion ......................................................85
  6.2.3 Industrial production Discussion .......................................88
  6.2.4 GDP Discussion .................................................................89
6.2.5 House starting Discussion ................................................................. 89
6.2.6 Nonfarm payroll Discussion ............................................................. 90
6.2.7 Unemployment rate Discussion ...................................................... 90
6.2.8 Retail sales Discussion ................................................................. 91
6.2.9 CCI Discussion ..............................................................
6.2.10 PMI Chicago Discussion ............................................................. 92
6.2.11 Durable goods Discussion .......................................................... 93
6.3 Recommendation ..............................................................................
6.4 Future research .................................................................................. 94
Bibliography ......................................................................................... 94
Website ................................................................................................. 95
List of Tables

Table 2-1: Summary Table of Previous Related Studies ................................................................. 1
Table 4-1-3: Summary of Data Source .......................................................................................... 1
Table 5-1 Descriptive Statistics summary of US macroeconomic announcements surprises ......... 1
Table 5-2 Descriptive Statistics summary of US macroeconomic announcements surprises .......... 1
Table 5-3 Descriptive Statistics summary NAVs of equity mutual fund ........................................ 2
Table 5-4 Descriptive Statistics summary NAVs of equity mutual fund ......................................... 4
Table 5-5 The t-test statistic results of macroeconomic variables and NAVs of equity mutual fund .... 4
Table 5-6 The ARMA model and GARCH types model of NAVs of equity mutual fund ............... 5
Table 5-7 The estimation of the significant relationship between the Nonfarm Payrolls and ChinaAMC CSI 300 Feeder ETF NAV volatility ................................................................. 7
Table 5-8 The estimation of the significant relationship between the CPI and ChinaAMC CSI 300 Feeder ETF NAV volatility ......................................................................................... 8
Table 5-9 The estimation of the significant relationship between the GDP QoQ and ChinaAMC CSI 300 Feeder ETF NAV volatility ............................................................... 9
Table 5-10 The estimation of the significant relationship between the Unemployment Rate and ChinaAMC CSI 300 Feeder ETF NAV volatility ......................................................... 10
Table 5-11 The estimation of the significant relationship between the Retail Sales & Food Services, Total MoM and ChinaAMC CSI 300 Feeder ETF NAV volatility ..................................... 11
Table 5-12 The estimation of the significant relationship between the Housing Starts Number MM and ChinaAMC CSI 300 Feeder ETF NAV volatility ........................................... 14
Table 5-13 The estimation of the significant relationship between the PMI Chicago and ChinaAMC CSI 300 Feeder ETF NAV volatility ................................................................. 15
Table 5-14 The estimation of the significant relationship between the Import Price Index and ChinaAMC CSI 300 Feeder ETF NAV volatility ......................................................... 15
Table 5-15 The estimation of the significant relationship between the Industrial Production and ChinaAMC CSI 300 Feeder ETF NAV volatility ......................................................... 15
Table 5-16 The estimation of the significant relationship between the CCI and ChinaAMC CSI 300
Feeder ETF NAV volatility. ..........................................................................................................................16

Table 5-17 The estimation of the significant relationship between the Durable Goods Orders and
ChinaAMC CSI 300 Feeder ETF NAV volatility ......................................................................................16

Table 5-18 The estimation of the significant relationship between the Nonfarm Payrolls and E Fund
SZSE 100 Feeder ETF NAV volatility. .......................................................................................................16

Table 5-19 The estimation of the significant relationship between the CPI and E Fund SZSE 100
Feeder ETF NAV volatility. ..........................................................................................................................17

Table 5-20 The estimation of the significant relationship between the GDP QoQ and E Fund SZSE
100 Feeder ETF NAV volatility ..................................................................................................................17

Table 5-21 The estimation of the significant relationship between the Unemployment Rate and E
Fund SZSE 100 Feeder ETF NAV volatility ...............................................................................................17

Table 5-22 The estimation of the significant relationship between the Retail Sales & Food Services,
Total MoM and E Fund SZSE 100 Feeder ETF NAV volatility .....................................................................17

Table 5-23 The estimation of the significant relationship between the Housing Starts Number MM
and E Fund SZSE 100 Feeder ETF NAV volatility .....................................................................................18

Table 5-24 The estimation of the significant relationship between the PMI Chicago and E Fund SZSE
100 Feeder ETF NAV volatility ....................................................................................................................18

Table 5-25 The estimation of the significant relationship between the Import Price Index and E Fund
SZSE 100 Feeder ETF NAV volatility ..........................................................................................................18

Table 5-26 The estimation of the significant relationship between the Industrial Production and E
Fund SZSE 100 Feeder ETF NAV volatility .................................................................................................18

Table 5-27 The estimation of the significant relationship between the CCI and E Fund SZSE 100
Feeder ETF NAV volatility. ..........................................................................................................................19

Table 5-28 The estimation of the significant relationship between the Durable Goods Orders and E
Fund SZSE 100 Feeder ETF NAV volatility .................................................................................................19

Table 5-29 The estimation of the significant relationship between the Nonfarm Payrolls and BOCOM
Blue Chip Mixed NAV volatility ..................................................................................................................28

Table 5-30 The estimation of the significant relationship between the CPI and BOCOM Blue Chip
Mixed NAV volatility ..................................................................................................................................33

Table 5-31 The estimation of the significant relationship between the GDP QoQ and BOCOM Blue
Chip Mixed NAV volatility ..........................................................................................................................33
Table 5-32 The estimation of the significant relationship between the Unemployment Rate and BOCOM Blue Chip Mixed NAV volatility .................................................................33
Table 5-33 The estimation of the significant relationship between the Retail Sales & Food Services, Total MoM and BOCOM Blue Chip Mixed NAV volatility .................................................................35
Table 5-34 The estimation of the significant relationship between the Housing Starts Number MM and BOCOM Blue Chip Mixed NAV volatility .................................................................37
Table 5-35 The estimation of the significant relationship between the PMI Chicago and BOCOM Blue Chip Mixed NAV volatility .................................................................38
Table 5-36 The estimation of the significant relationship between the Import Price Index and BOCOM Blue Chip Mixed NAV volatility .................................................................67
Table 5-37 The estimation of the significant relationship between the Industrial Production and BOCOM Blue Chip Mixed NAV volatility .................................................................67
Table 5-38 The estimation of the significant relationship between the CCI and BOCOM Blue Chip Mixed NAV volatility .................................................................68
Table 5-39 The estimation of the significant relationship between the Durable Goods Orders and BOCOM Blue Chip Mixed NAV volatility .................................................................68
Table 5-40 The estimation of the significant relationship between the Nonfarm Payrolls and China Universal SCI Index Fund NAV volatility .................................................................69
Table 5-41 The estimation of the significant relationship between the CPI and China Universal SCI Index Fund NAV volatility .................................................................70
Table 5-42 The estimation of the significant relationship between the GDP QoQ and China Universal SCI Index Fund NAV volatility .................................................................71
Table 5-43 The estimation of the significant relationship between the Unemployment Rate and China Universal SCI Index Fund NAV volatility .................................................................71
Table 5-44 The estimation of the significant relationship between the Retail Sales & Food Services, Total MoM and China Universal SCI Index Fund NAV volatility .................................................................72
Table 5-45 The estimation of the significant relationship between the Housing Starts Number MM and China Universal SCI Index Fund NAV volatility .................................................................72
Table 5-46 The estimation of the significant relationship between the PMI Chicago and China Universal SCI Index Fund NAV volatility .................................................................72
Table 5-47 The estimation of the significant relationship between the Import Price Index and China Universal SCI Index Fund NAV volatility .................................................................73
Table 5-48 The estimation of the significant relationship between the Industrial Production and China Universal SCI Index Fund NAV volatility. ................................................................. 73
Table 5-49 The estimation of the significant relationship between the CCI and China Universal SCI Index Fund NAV volatility. .......................................................................................... 74
Table 5-50 The estimation of the significant relationship between the Durable Goods Order and China Universal SCI Index Fund NAV volatility. ......................................................... 74
Table 5-51 The estimation of the significant relationship between the Nonfarm Payrolls and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility .............................................................. 76
Table 5-52 The estimation of the significant relationship between the CPI and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility. ................................................................................... 78
Table 5-53 The estimation of the significant relationship between the GDP QoQ and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility. ................................................................. 79
Table 5-54 The estimation of the significant relationship between the Unemployment Rate in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility. .............................................. 80
Table 5-55 The estimation of the significant relationship between the Retail Sales & Food Services, Total MoM and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility. Error! Bookmark not defined.
Table 5-56 The estimation of the significant relationship between the Housing Starts Number MM and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility ......................................................... 81
Table 5-57 The estimation of the significant relationship between the PMI Chicago and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility. ................................................................. 82
Table 5-58 The estimation of the significant relationship between the Import Price Index and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility ................................................................. 82
Table 5-59 The estimation of the significant relationship between the Industrial Production and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility. ................................................................. 83
Table 5-60 The estimation of the significant relationship between the CCI and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility. ................................................................. 83
Table 5-61 The estimation of the significant relationship between the Durable Goods Orders and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility ................................................................. 84
Table 5-62 The estimation of the significant relationship between the Nonfarm Payrolls and TEDA Preferred Enterprises Equity Fund NAV volatility. ................................................................. 85
Table 5-63 The estimation of the significant relationship between the CPI and TEDA Preferred Enterprises Equity Fund NAV volatility.................................................................88
Table 5-64 The estimation of the significant relationship between the GDP QoQ and TEDA Preferred Enterprises Equity Fund NAV volatility.................................................................89
Table 5-65 The estimation of the significant relationship between the Unemployment Rate and TEDA Preferred Enterprises Equity Fund NAV volatility.................................................................89
Table 5-66 The estimation of the significant relationship between the Retail Sales & Food Services, Total MoM and TEDA Preferred Enterprises Equity Fund NAV volatility.................................90
Table 5-67 The estimation of the significant relationship between the Housing Starts Number MM and TEDA Preferred Enterprises Equity Fund NAV volatility .................................................90
Table 5-68 The estimation of the significant relationship between the PMI Chicago and TEDA Preferred Enterprises Equity Fund NAV volatility.................................................................91
Table 5-69 The estimation of the significant relationship between the Import Price Index and TEDA Preferred Enterprises Equity Fund NAV volatility.................................................................92
Table 5-70 The estimation of the significant relationship between the Industrial Production and TEDA Preferred Enterprises Equity Fund NAV volatility.................................................................92
Table 5-71 The estimation of the significant relationship between the CCI and TEDA Preferred Enterprises Equity Fund NAV volatility.................................................................93
Table 5-72 The estimation of the significant relationship between the Durable Goods Orders and TEDA Preferred Enterprises Equity Fund NAV volatility.................................................................93
Table 5-73 The estimation of the significant relationship between the Nonfarm Payrolls and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.................................................................94
Table 5-74 The estimation of the significant relationship between the CPI and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.................................................................94
Table 5-75 The estimation of the significant relationship between the GDP QoQ and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.................................................................95
Table 5-76 The estimation of the significant relationship between the Unemployment Rate and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.................................................................96
Table 5-77 The estimation of the significant relationship between the Retail Sales & Food Services, Total MoM and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility...............................96
Table 5-78 The estimation of the significant relationship between the Housing Starts Number MM and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.................................................................97
Table 5-79 The estimation of the significant relationship between the PMI Chicago and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility..............................................................97

Table 5-80 The estimation of the significant relationship between the Import Price Index and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility...............................................98

Table 5-81 The estimation of the significant relationship between the Industrial Production and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.................................................98

Table 5-82 The estimation of the significant relationship between the CCI and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility. ..............................................................99

Table 5-83 The estimation of the significant relationship between the Durable Goods Orders and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility..............................................99

Table 5-84 The estimation of the significant relationship between the Nonfarm Payrolls and BOCOM Growth Mixed A NAV volatility ........................................................................................................100

Table 5-85 The estimation of the significant relationship between the CPI and BOCOM Growth Mixed A NAV volatility. ....................................................................................................................101

Table 5-86 The estimation of the significant relationship between the GDP QoQ and BOCOM Growth Mixed A NAV volatility. .............................................................................................................101

Table 5-87 The estimation of the significant relationship between the Unemployment Rate and BOCOM Growth Mixed A NAV volatility. .......................................................................................102

Table 5-88 The estimation of the significant relationship between the Retail Sales & Food Services, Total MoM and BOCOM Growth Mixed A-0.4 NAV volatility.................................................................102

Table 5-89 The estimation of the significant relationship between the Housing Starts Number MM and BOCOM Growth Mixed A NAV volatility..............................................................................103

Table 5-90 The estimation of the significant relationship between the PMI Chicago and BOCOM Growth Mixed A NAV volatility. .......................................................................................................103

Table 5-91 The estimation of the significant relationship between the Import Price Index and BOCOM Growth Mixed A NAV volatility. .........................................................................................104

Table 5-92 The estimation of the significant relationship between the Industrial Production and BOCOM Growth Mixed A NAV volatility. ........................................................................................104

Table 5-93 The estimation of the significant relationship between the CCI and BOCOM Growth Mixed A NAV volatility. ....................................................................................................................105

Table 5-94 The estimation of the significant relationship between the Durable Goods Orders and BOCOM Growth Mixed A NAV volatility. .......................................................................................106
Table 5-95 The estimation of the significant relationship between the Nonfarm Payrolls and Lion Value Growth Mixed NAV volatility ................................................................. 106
Table 5-96 The estimation of the significant relationship between the CPI and Lion Value Growth Mixed NAV volatility................................................................. 107
Table 5-97 The estimation of the significant relationship between the GDP QoQ and Lion Value Growth Mixed NAV volatility................................................................. 107
Table 5-98 The estimation of the significant relationship between the Unemployment Rate and Lion Value Growth Mixed NAV volatility...................................................... 108
Table 5-99 The estimation of the significant relationship between the Retail Sales & Food Services, Total MoM and Lion Value Growth Mixed NAV volatility...................................................... 108
Table 5-100 The estimation of the significant relationship between the Housing Starts Number MM and Lion Value Growth Mixed NAV volatility...................................................... 109
Table 5-101 The estimation of the significant relationship between the PMI Chicago and Lion Value Growth Mixed NAV volatility................................................................. 109
Table 5-102 The estimation of the significant relationship between the Import Price Index and Lion Value Growth Mixed NAV volatility................................................................. 110
Table 5-103 The estimation of the significant relationship between the Industrial Production and Lion Value Growth Mixed NAV volatility................................................................. 111
Table 5-104 The estimation of the significant relationship between the CCI and Lion Value Growth Mixed NAV volatility................................................................. 111
Table 5-105 The estimation of the significant relationship between the Durable Goods Orders and Lion Value Growth Mixed NAV volatility................................................................. 112
Table 5-106 The estimation of the significant relationship between the Nonfarm Payrolls and ChinaAMC SSE50 ETF NAV volatility................................................................. 112
Table 5-107 The estimation of the significant relationship between the CPI in the U.S. and ChinaAMC SSE50 ETF NAV volatility................................................................. 113
Table 5-108 The estimation of the significant relationship between the GDP QoQ and ChinaAMC SSE50 ETF NAV volatility................................................................. 113
Table 5-109 The estimation of the significant relationship between the Unemployment Rate and ChinaAMC SSE50 ETF NAV volatility................................................................. 114
Table 5-110 The estimation of the significant relationship between the Retail Sales & Food Services, Total MoM and ChinaAMC SSE50 ETF NAV volatility................................................................. 115
Table 5-111 The estimation of the significant relationship between the Housing Starts Number MM and ChinaAMC SSE50 ETF NAV volatility. .................................................................115

Table 5-112 The estimation of the significant relationship between the PMI Chicago and ChinaAMC SSE50 ETF NAV volatility. .................................................................116

Table 5-113 The estimation of the significant relationship between the Import Price Index and ChinaAMC SSE50 ETF NAV volatility. .................................................................116

Table 5-114 The estimation of the significant relationship between the Industrial Production and ChinaAMC SSE50 ETF NAV volatility. .................................................................117

Table 5-115 The estimation of the significant relationship between the CCI and ChinaAMC SSE50 ETF NAV volatility. .................................................................118

Table 5-116 The estimation of the significant relationship between the Durable Goods Orders and ChinaAMC SSE50 ETF NAV volatility. .................................................................118

Table 6-1 Result of Hypothesis Test of NAVs of Chinese equity mutual fund. .................................119
List of Figures

Figure 1-1-2: The structure of a mutual fund .................................................................1
Figure 3-1: Conceptual framework of this research ......................................................1
Figure 4-3-4 Statistical Data Treatments .....................................................................1
CHAPTER I

GENERALITIES OF THE STUDY

This chapter portrays a general introduction of this research paper. It includes the purpose, scope, limitations and significance of this study. Background and information of dependent and explanatory variables are demonstrated through the NAVs of top 10 Chinese equity mutual funds and scheduled US macroeconomic surprise.

1.1 Introduction to the Study

As we know, fund operation method is when the fund manager collected the fund to invest in equity or bond market, then the return from the fund will be divided to the investor, so that the volatility of equity market impacts on the volatility of mutual fund market. This result is proved by Thenmozhi and Kumar.

There is a great amount of papers that researched the relationship between U.S. macroeconomic announcement news and Chinese finance market (equity market, bond market and money market) and the relationship between Chinese equity market and mutual fund market. However, the blank space here is that the relationship between U.S. macroeconomic announcement news and Chinese mutual fund market have not been studied yet. That is the main motivation why the author researches this topic.

1.1.1 Equity mutual fund

Equity fund which is also called as stock fund is a mutual fund that invests principally in stocks. Depending on the company size, the investment style of the holdings in the portfolio and geography, equity mutual funds are classified into different categories. The
market capitalization is played decisive role in size of an equity mutual fund.

1.1.2 Mutual fund in China

With the advantage of great population and wide market, the speed of China mainland market growth is extremely fast, but market space is still existing, so investors favor Chinese mainland fund market. Emerging market is the country or area in which GDP per capital is less than 10,000 Dollars each year (World Bank). Although GDP per capital in China is just 6807.34 dollars, economy increase rate is high. Being in the beginning of economic development, China is on the way to be the main economic entity (Wang and Dai,2011). Although there was a dramatic shock in Chinese stock market in 2015, the mutual fund issuing tend went to the opposite direction, which created a new record. As data collected by Thomson Reuter Lipperin, there were 830 funds launched in 2015, which was twice more than 2014 which launched 406. Baring Asset Management, the industrial development director said, “the economic size of China cannot be ignored, as an asset management company, you have to have a Chinese fund.” And Li Huang, associate director at Fitch Ratings said, “Chinese money market funds (CMMF) has been a main contributor for the growth of Chinese mutual funds in recent years. CMMF has experienced substantial growth since the second half of 2013 driven by the demand for e-commerce money market fund. The growth of Chinese mutual funds is supported by the expanding middle class, high savings rate and large amount of bank deposits. The mutual recognition scheme [MRF] is still at early stage and it did not drive the growth last year.”(http://www.ftchinese.com/story/001065675, accessed on 1st November 2016).

Mutual fund in China is distinguished into tow types which are open-ended funds and close-ended funds. As the statistics from AMAC (Asset Management Association of China)
show, there are in total 104 fund management companies which include 44 Sino-foreign joint venture companies and 60 domestic companies till June of 2016. All the above companies manage 79,500 trillion Yuan capital of public offered funds. Comparing with close-ended funds, there only are 205 units and its net value is 2757.22 trillion Yuan. Open-ended funds have a great amount which is 2909 and its net value is 76739.93 trillion Yuan. (http://www.amac.org.cn/tjsj/qqgtjjsj, accessed on 1st November 2016).

A mutual fund is mainly formed by mutual fund shareholders, owners of fund providers, fund providers, and board of directors. The structure of a mutual fund is shown as below:

**Figure 1-1-2: The structure of a mutual fund**

In general, it is restricted to have foreign investment in the Chinese asset management market. The commitment of China to World Trade Organization does not permit foreign fund or asset managers to provide cross-border fund/asset/investment management directly to Chinese clients.

1.1.3 Equity mutual fund in China

Open-ended funds are formed by equity funds, mixed funds, money funds, bond funds and QDII (Qualified domestic institutional investor) funds. The market benchmark portfolio is beaten by all types of mutual funds which include close-ended funds, and stock type, mixed type and bond type of open-ended funds. Close-ended funds and equity mutual fund have highest risk performance. With second large quantity of fund, net value of equity fund is 6654.75 trillion Yuan which increased about 600 trillion Yuan than last month. (http://www.amac.org.cn/tjsj/qqgtjj, accessed on 1st November 2016).

1.1.4 U. S. Macroeconomic announcement

As economic globalization existed, it could hardly to find any markets standing alone but being impacted by global economy (Albuquerque and Vega, 2008), excluding those underdeveloped and closed countries or areas. US macroeconomic announcement which is released regularly, as the largest GDP economy entity in the world, the influence of US economy on other markets from it market movement is obvious (Nikkinen, Omran, Sahlstrom, and Aijo, 2006). It is almost a common opinion sharing about leadership of U.S. market in global economic, US market and economy was frequently used as proxy of external force upon domestic market (Nguyen, 2011). Researchers, investors and policy makers attempt analyze those macroeconomic announcements to catch the economy status.
U.S. macroeconomic announcement is the important factor which has a significant effect on the financial market in a certain degree. There are uncountable evidences from researchers that statistically significant relationship between US public information and financial markets has been found in widely geographic range. Like the Jochen, Andritzky, Geoffrey, and Natalia (2005) found out broadly robust impact of macroeconomic announcements on 12 emerging bond market which including Brazil, Chile, China, Colombia, Korea, Malaysia, Mexico, Poland, South Africa, Thailand, Turkey, and Venezuela. Butter, Hayo, and Neuenkirch (2012) and Nguyen (2011) tested US unanticipated news announcement on local stock markets of CEEC-3 (Czech Republic, Hungary, and Poland) and Vietnam correspondingly. Albuquerque and Vega (2008) studied and approved the significant relationship between US macroeconomic news surprise and US and Portugal stock market. As most of article suggested that Nonfarm payroll, GDP and CPI are most powerful variable to financial market.

1.2 Objectives of the Study

The purpose of this research is to find out the significant U.S. macroeconomic announcements which impact the NAV volatility of Chinese equity mutual funds, and to investigate if there are significant U.S. macroeconomic announcements that impact the NAV volatility of Chinese equity mutual funds. We tend to identify the various factors which lead to the volatilities of Chinese mutual funds, such as nonfarm payrolls, unemployment rate, import price index, industrial production and so on so forth. The objectives of this research will be:

- To study whether the US Nonfarm Payrolls surprise has a significant relationship with NAV volatility of Chinese equity mutual funds during Jan 2010 to June 2016.
• To study whether the US CPI surprise has a significant relationship with NAV volatility of Chinese equity mutual funds during Jan 2010 to June 2016.

• To study whether the US GDP QoQ surprise has a significant relationship with NAV volatility of Chinese equity mutual funds during Jan 2010 to June 2016.

• To study whether the US Unemployment Rate surprise has a significant relationship with NAV volatility of Chinese equity mutual funds during Jan 2010 to June 2016.

• To study whether the US Retail Sales & Food Services, Total MoM surprise has a significant relationship with NAV volatility of Chinese equity mutual funds during Jan 2010 to June 2016.

• To study whether the US Housing Starts Number MM surprise has a significant relationship with NAV volatility of Chinese equity mutual funds during Jan 2010 to June 2016.

• To study whether the US PMI Chicago surprise has a significant relationship with NAV volatility of Chinese equity mutual funds during Jan 2010 to June 2016.

• To study whether the US Import Price Index surprise has a significant relationship with NAV volatility of Chinese equity mutual funds during Jan 2010 to June 2016.

• To study whether the US Industrial Production surprise has a significant relationship with NAV volatility of Chinese equity mutual funds during Jan 2010 to June 2016.

• To study whether the US CCI surprise has a significant relationship with NAV volatility of Chinese equity mutual funds during Jan 2010 to June 2016.

• To study whether the US Durable Goods Orders surprise has a significant relationship with NAV volatility of Chinese equity mutual funds during Jan 2010 to June 2016.
1.3 Statement of the Problem

Chinese economy market become open more and more since 1980s, mutual fund is a young investment market in China comparing with stock and bond market. With the development of economy in China, it become popular from 2005 and increased in doubled and redoubled in the recent year. The factors which effect the mutual fund volatility are interesting matters.

However, relationships between unexpected macroeconomic news announcements and financial market have been studied and confirmed by many previous studies. Like on stock market (Nguyen, 2011), on bond market (Balduzzi, Elton and Green, 2001), on exchange market (Almeida, Goodhart and Payne, 1997). And several researchers tested the relationship between equity market and mutual fund market. To illustrate, Mishra (2011) tested the dynamics of the relationship between mutual funds investment flow and stock market return in India, Edwards and Zhang (1998) found equity and bond funds are significantly affected by stock and bond returns, Thus, previous studied didn't provide any evidence about the relationship between US macroeconomic news announcement and Chinese equity mutual fund.

The purpose of the paper is about effect of eleven US scheduled macroeconomic news announcements surprise of NAV volatilities of Chinese equity mutual fund from Jan 2010 to June 2016, this paper is intending to find answers to research questions as follow:

- Is there any relationship between the announcements of “Non-farm Payrolls” in the U.S. and the volatilities of Chinese mutual funds?
• Is there any relationship between the announcements of “CPI” in the U.S. and the volatilities of Chinese mutual funds?

• Is there any relationship between the announcements of “GDP QoQ” in the U.S. and the volatilities of Chinese mutual funds?

• Is there any relationship between the announcements of “Unemployment Rate” in the U.S. and the volatilities of Chinese mutual funds?

• Is there any relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and the volatilities of Chinese mutual funds?

• Is there any relationship between the announcements of “Housing Starts Number MM” in the U.S. and the volatilities of Chinese mutual funds?

• Is there any relationship between the announcements of “PMI Chicago” in the U.S. and the volatilities of Chinese mutual funds?

• Is there any relationship between the announcements of “Import Price Index” in the U.S. and the volatilities of Chinese mutual funds?

• Is there any relationship between the announcements of “Industrial Production” in the U.S. and the volatilities of Chinese mutual funds?

• Is there any relationship between the announcements of “CCI” in the U.S. and the volatilities of Chinese mutual funds?

• Is there any relationship between the announcements of “Durable Goods Orders” in the U.S. and the volatilities of Chinese mutual funds?

1.4 Scope of the Research

In this study, the researcher focuses on relationship. The researcher aims to investigate the correlations between U.S. macroeconomic indicators announcements and the
volatility of each Chinese equity mutual fund. The researcher will choose 11 conventional indicators to test, not including other conventional indicators or other objective factors. In addition, the testing is only focused on the relevant data of Chinese equity mutual funds and the announcements in the U.S. The data used in testing are secondary data, all collected from the Reuter Terminal during January 1st, 2010 to June 30th, 2016.

The dependent variable in this research is the volatility of each Chinese mutual fund. Twelve well-known macroeconomic indicators are independent variables including Nonfarm Payrolls, CPI, GDP QoQ, Unemployment Rate, Retail Sales & Food Services, Total MoM, Housing Starts Number MM, PMI Chicago, Import Price Index, Industrial Production, CCI and Durable Goods Orders.

1.5 Limitations of the Study

Firstly, the result will represent only the NAV volatilities of top 10 Chinese equity mutual funds. 10 equity mutual fund cannot represent all fund observations, so the data may not large enough to assure the widest range of explore results.

Secondly, although there are many factors which lead to the volatility of foreign exchange rate, in this study the researcher has focused only on the chosen 11 U.S. macroeconomic indicators, namely: Non-farm Payrolls, CPI, GDP QoQ, Unemployment Rate, Retail Sales & Food Services, Total MoM, Housing Starts Number MM, PMI Chicago, Import Price Index, Industrial Production, CCI and Durable Goods Orders, since it is not feasible to take all. Additionally, there are still many other subjective factors that could impact the dependent variable (the NAV volatility of Chinese equity mutual fund), such as changing of the government policy, a terrorist attack, outbreak of infectious diseases, all of
which could not be tested easily due to the limited data availability and immeasurable characteristic.

Lastly, for all variables, this research may not be applied to other time period as it will be collected only during January 1st, 2010 to June 30th, 2016. As it is within the range of six and half years, it may not be long enough to guarantee the highest veracity of investigated result.

1.6 Significance of the Study

The researcher makes effort to find out whether the US macroeconomic announcements surprises are impacting the NAV volatility of Chinese equity mutual funds. In this regard, the relationship between those two markets will be given a deep look in this paper. For the following, the researcher, fund manager and investor and police maker in China Securities Regulatory Commission could get useful information from result of this research.

As one of largest economy entity, China is hot, there are lots of researchers are interested to study Chinese economy. This paper will bring a new idea and reference as the related field research.

With the responsibility of making benefits for investors by manage their capital, fund manager need hold as much and accurate as possible information to make decision on equity mutual fund operation. This research could give an implication to fund manager.

When the economy going up, investors are intending to select investment portfolio to
maximize the profit. Mutual fund is the best investment choice for those investors who are afraid to take high risk but want to gain more return than saving in bank. This article will give investor a source while they are making investment, even the investor put their money to fund manager, they also need to have knowledge about mutual fund.

To police maker in China Securities Regulatory Commission, this article can be a suggestion help them to make fair regulation and revise the outdate rules.

1.7 Definitions of Terms

**Announcement surprise** is the difference between the scheduled macroeconomic announcement value which is forecasted preciously and its actual value. This difference is regarded as true information to market. (Gupta and Reid, 2013)

**Consumer Price index** as one of the best-known lagging indicators which represents the changes in the purchasing-power of a currency and the rate of inflation. The consumer price index expresses the current prices of a group of goods and services to show effect of inflation on purchasing power during the same period in a previous year. (http://www.businessdictionary.com/definition/consumer-price-index-CPI.html, retrieved on 2nd December 2016)

**Durable goods orders** is a measurement of long-term purchases, products which are desired to be used more than three years. It provides an estimating way of the future in the manufacturing industry. (http://www.investorwords.com/5530/durable_goods_orders.html, accessed on 2nd December 2016)

**Equity mutual fund** is a kind of mutual fund which is expected in fund management to find
good opportunities to invest in stock markets that will grow, taking off ever-increasing gushers of profit for the owners. (https://www.thebalance.com/what-is-an-equity-fund-357477, accessed on 2nd December 2016)

**Gross domestic product** is all the output generated within the borders of a country which includes market and non-market (government education service, defenses…) goods and services in a quarter or a year. It measures the monetary value of final goods and service. (http://www.investorwords.com/2153/GDP.html, accessed on 2nd December 2016)

**Housing starts** is the start of construction of a house or apartment building since digging the foundation which is monitored by Department of Commerce and is a category of residential construction. (Downes and Goodman, 1998)

**Import price index** is a measurement of the change rate over time in the price of imported goods and service purchased by residents of that country from, and supplied by foreign sellers. (https://www.imf.org/external/np/sta/xipim/pdf/xipim, access on 2nd December 2016)

**Industrial production** measures the total output volume which is produced by the industries. It is contained manufacturing, mining, and utilities industries in US. In general, this is known as performance of fundamental or real economy. (Albuquerque& Vega, 2008)

**NAV** is price per share of a mutual fund on a specific date or time. According to the value of all portfolio of securities, all liabilities and the number of found share outstanding, the per-share dollar amount of the fund with both security types will be computed. (http://www.investopedia.com/terms/n/nav.asp, access on 2nd December 2016)
**Nonfarm payroll** is an influential statistic and economic indicator which impacts the foreign exchange market, the bond market, and the stock market. As part of a report on the state of the labor market, it is released monthly by the United States Department of Labor. (http://www.investopedia.com/terms/n/nav.asp, access on 2nd December 2016)

**PMI Chicago** is a survey summary form Chicago managers which are specializing industrial purchase. This report contains the evaluation of manufacturing orders, inventories and price dynamics in that manufacturing field. (https://freshforex.com/encyclopedia-forex/Chicago-PMI-index/, accessed on 2nd December 2016)

**Retail sales** is a measurement of consumer spending as a part of the United States GDP and offered by Bureau of Census monthly. Using only reported both current and previous month data units, the change in sales from previous month and total sales is estimated; and total sales is estimated by multiplying this rate by the preliminary sales estimate for the previous month. (http://www.mypivots.com/dictionary/definition/329/retail-sales, accessed on 2nd December 2016)

**Unemployment rate** is the amount of people who have no job but are available and looking for a job currently, out of the total labor force within a country. (Fang et al., 2008)

**Volatility** is a characteristic of a security, commodities, or market movement which has a sharp rise or fall during a short-term period. (Downes and Goodman, 1998)
1.8 List of Abbreviations in the Research

**ARMA**: autoregressive and moving average

**CCI**: Commodity Channel Index

**CPI**: Consumer Price Index

**EGARCH**: The Exponential GARCH

**GARCH**: Autoregressive Conditional Heteroskedasticity

**GDP**: Gross Domestic Product

**ISM**: Institute for Supply Management

**MoM**: Month on Month

**NAV**: Net Asset Value

**PMI**: Purchasing Managers Index

**QoQ**: Quarter on Quarter
CHAPTER II
LITERATURE REVIEW

Some previous studies and researches related to and about the topic would be discussed in this chapter which comprises of three sections. The first section presents the definition of dependent variable. The next section addresses the independent variables. The last section reviews the previous study.

2.1 Explanation of Dependent Variables

NAV of mutual fund is a market value of a fund share which is also well-known as bid price. Due to the public pays to buy shares, the NAV, market price and offering price of no-load funds are not dissimilar. What is different with no-load fund market is that offer prices in load fund are bid after adding the sales charge to the net asset value. NAV is computed by the exchanges each day.

The dependent variable in this research is the volatility of mutual fund in China. Net asset value or price per share of a mutual fund depends on the price of its underlying securities, such as stocks or bonds. The mutual fund volatility is a net asset value and typical fluctuation of fund. In other word, more risk comes with a high volatility that can generate big return than one with low volatility. You can measure a mutual fund’s volatility using its beta and standard deviation, which are two widely-available statistics. The volatility of mutual fund is calculated by using its beta and standard deviation.
These dependent variables in this paper include 10 largest size equity mutual funds in China, which are ChinaAMC CSI 300 Feeder ETF, E Fund SZSE 100 Feeder ETF, BOCOM Blue Chip Mixed, China Universal SCI Index Fund, GF CSI500 Index ETF Feeder Fund (LOF)A, TEDA Preferred Enterprises Equity Fund, BOCOM Schroders SSE180 Corporate Governance ETF Feeder, BOCOM Growth Mixed A, Lion Value Growth Mixed and ChinaAMC SSE 50 ETF.

2.2 Explanation of independent variables

The independent variables in this research are U.S. macroeconomic announcement indicators. The researcher selected 11 well-known indicators in the U.S. to test the volatility of equity mutual fund in China. These indicators will be described as follow:

2.2.1 Nonfarm Payroll

Nonfarm payroll is a report to describe the total number of paid U.S. workers of any business excluding general government jobs, private household jobs, employees of nonprofit organizations and far employees. It is conducted and reported by the U.S. Bureau of Labor Statistics monthly. (http://www.investpedia.com, accessed on 2nd December 2016)

2.2.2 Consumer Price Index-CPI

The Consumer Price Index(CPI) is an economic indicator which reflects periods of inflation or deflation and the cost of living. It studies weighted average prices of a group of consumer goods and service (ie. transportation, food and medical care) by taking and averaging price changes of each item in the goods predetermined group. (http://www.investpedia.com, accessed on 2nd December 2016)
2.2.3 Gross Domestic Product

The gross domestic product measures the total dollar value of all goods and services produced over a certain time period. It is one of the most frequently used statistics for estimating the health of a country’s economy. GDP is described as a comparison to the previous quarter or year generally. (http://www.investpedia.com, accessed on 2nd December 2016)

2.2.4 Unemployment rate

Unemployment rate examined the percentage of the total labor force that is unemployed but willing to work and seeking employment actively. (http://www.investpedia.com, accessed on 2nd December 2016)

2.2.5 Retail sales

Retail sales is estimated to model an entire country according to a data sampling. Retail sales are an aggregated measure of the sales of retail goods over a determined time period. Measuring consumer demand for finished goods, retail sales help gauge the pulse of an economy and its projected path rowed expansion or contraction. As a leading macroeconomic indicator, healthy retail sales figures typically elicit positive movements in equity markets. (http://www.investpedia.com, accessed on 2nd December 2016)

2.2.6 Housing starts

As a critical indicator of economic strength, housing starts are the number of new residential construction projects that have begun during any particular month. The New
Residential construction is commonly referred to as “housing starts” which is released on or around the 17th of each month by the U.S. Commerce Department. The report includes building permits, housing starts and housing completions data. The data is compiled form surveys of homebuilders nationwide. (http://www.investpedia.com, accessed on 2nd December 2016)

### 2.2.7 Purchasing manager index

Purchasing manager index is developed from monthly business surveys which intend to provide information about current business conditions to company decision makers, analysts and purchasing managers. It is an indicator of the economic health of the manufacturing sector and based on five indicators: new orders, inventory levels, production, supplier deliveries and the employment environment. (http://www.investpedia.com, accessed on December 2nd, 2016)

### 2.2.8 Import price index

Import price index is created by compiling the prices of goods purchased in U.S. but produced out of country. (http://www.investpedia.com, accessed on 2nd December 2016)

### 2.2.9 Industrial production

An economic indicator measures the amount of output from the manufacturing, mining, electric and gas industries. It is released monthly by the Federal Reserve Board. The reference year for the index is 2002 and a level of 100. (http://www.investpedia.com, accessed on 2nd December 2016)

### 2.2.10 Consumer confidence index
Consumer confidence index measures how optimistic or pessimistic consumers are with respect to the economy in the near future. It is reported by the Conference Board monthly. The consumer confidence index represent, that if consumers are optimistic, they tend to purchase more goods and services. This increase in spending inevitably stimulates the whole economy. (http://www.investpedia.com, accessed on 2nd December 2016)

2.2.11 Durable goods orders

Durable goods orders which are released by the Bureau of Census come in two releases per month: the advance report on durable goods and the manufactures’ shipments, inventories and orders. As an economic indicator, it represents new orders placed with domestic manufactures for delivery of factory hard goods (durable goods) in the near term or future. (http://www.investpedia.com, accessed on 2nd December 2016)

2.3 Previous studies

Chatrath, Miao, Ramchander and Villupuram (2012) investigated the impact of macroeconomic news releases on corporate bonds. Multivariate regression model and pooled regression model were employed in this research. They find high-yield bonds are more sensitive to macroeconomics than investment grade bonds. And they further suggested that corporate bonds which are similar to equity are more sensitive to negative economic shocks than positive shocks.

Chen, Gong and Chen (2012) studied the dynamic relationship between Chinese stock market and bond market based on U.S. information shocks by bivariate GARCH model, in turn affects the stock market and bond market. It is not only the effect on linear assets return but also the effect on nonlinear asset volatility. Also Chen, Gong and Chen (2012) explored
that short effect of return mainly conducted by the public information. Private information mainly performs a permanent effect on volume. This result is consistent with the findings of Clare, Ioannides and Skinner (2000), who find that a combination of Treasuries in their portfolio does perform better in terms of hedging interest rate risk.

Andersen and Bollerslev (1998) used an annual sample of five-minute return to investigate the characterisation of volatility in Deutshe mark-U.S. dollar foreign exchange market and U.S. macroeconomic announcements. The approach captures the intraday activity (ARCH) patterns, macroeconomic announcements and volatility persistence. Most portion of return variability at the intraday and daily level quantifies and describes different function. They found and discussed fundamental influence behind this volatility “driving force”. The high-frequency returns is valuable to a broad range of issue in financial economics.

Nguyen’s (2011) framework used time-varying (MA-EGARCH) model to explore the spillover effect of the 12 key US macroeconomic news in the first two moments of the Vietnamese stock market returns. This result is interpreted as evidence of the USA’s real economic activities other than other variables deliberated by Vietnamese market participants. It is also exhibited that even though the Vietnamese stock market returns are significantly impacted by the US stock market (proxied by S&P500 index), the spillover effect of the US macroeconomic news is still significant.

Haataja (2011) intended to find out what is exactly U.S. macroeconomic news announcements on bond prices around the announcement moment using seven major economic indicators from Bureau of Labor Statistics. There, three key results were to be explored. First, the resect finds a statistical significance between bulletin of the scheduled
Gurgul and Wojtowicz (2014) analysed the effect on intraday returns of Polish stock exchange indices which is the largest and the most liquid stock market among the new European Union member countries. This research indicates the relatively high efficiency of the largest, medium-sized and small firms. The result shows that there is a slower but more persistent impact on smaller firms’ stock returns. They found that Nonfarm Payroll as a describing economic indicator of the US labor market is the most influential announcement. Good and bad news about the US economy are similarly affected to Polish stock exchange return. Gurgul and Wojtowicz (2015) also tested the impact of several U.S. macroeconomic news announcements on the stock prices quoted on the Vienna Stock Exchange. All computations in this study are based on one-minute log-returns of the AXT from January 2007 to December 2013. Using nonparametric rank test in the framework of event study methodology, they discovered that the speed and strength of price reactions, the duration of price adjustments after news announcement and the features of price responses reflect the level of the informational efficiency of the VSE. The event study also performed in the sun-period reveals a significantly stronger reaction of the ATX to U.S. news announcements during the crisis of 2008.

Nikkinen, Omran, Sahlstrom and Aijo (2008) tested whether the volatilities of emerging stock market in the Asia-Pacific region are impacted by United States
macroeconomic news announcement. Four important scheduled US macroeconomic announcements (CPI, Employment Situation, ISM Manufacturing and PPI) are examined with nine major emerging markets (China, India, Indonesia, Malaysia, Pakistan, Philippines, Korea, Taiwan and Thailand) and developed market (Australia, Honking, Singapore and Japan) intended to investigate the behaviour of GARCH volatility. This suggests that the stock valuation perspective is influenced by the prospect of the US macroeconomic news announcements.

Cai, Joo and Zhang (2009) tested the effect of exchange rate in emerging market on macroeconomic news in the U.S. and domestic economic news utilising a unique high-frequency database and OLS regression. They found that major U.S. macroeconomic news strongly influence the returns and volatilities of exchange rate in emerging market, but many domestic news does not. In a nutshell, currencies in emerging market is more sensitive to U.S. news in recent years. They also observed that market sentiment is able to sway the effect of news on the exchange rates systematically. Market uncertainty interacts with macroeconomic news in a statistically significant way as well.

Anderson, Bollerslev, Diebold and Vega (2003) depicted the US dollar spot exchange rate of the conditional means through the use of six years real time exchange market, macroeconomic expectations and achieve macroeconomic data sets. This research employed the autocorrelation model. The result shows that conditional mean jump is driven by an announcement surprise; therefore, the high-frequency exchange rate is relative to the fundamentals vigorously. It is interesting that the details of this connection are linked to the influence of time and the news announcements released. Symbolic effect is that they are linked to the latest information about the price discovery process and theory. Asymmetric
market reaction appears to the news conducted that bad news has greater impact than good news.

Santos, Garcia and Medeiros (2013) utilised linear regression to uncover the relationship between macroeconomic fundamentals and asset price to explore the influence of macroeconomic announcements in the Brazilian futures markets. Using intraday data from October 2008 to January 2011, researchers find that domestic news (Interest rate decision, Consumer price and Industrial production) is mainly impacted to Interest Rate future contracts, while external macroeconomic announcements (U.S. Interest rate decision, U.S. Consumer price and U.S. Non-farm Payroll) dominate price change in the Foreign Exchange and Ibovespa future market. They provided an evidence that price reactions are conditional on the state of the economy and document the impact on volume and bid ask as well.

Almeida, Goodhart and Payne (1997) analysed that publicly announced macroeconomic information engaging from Germany and the U.S. reflected the high frequency of the DEM/USD exchange rate. By using a set of market exaction figures provided by MMS International and a high (5 minute) frequency data, they identified systematic impacts of most announcements on the exchange rate change in the 15 minutes’ post-announcement. However, when the observation horizon for the exchange rate is increased, the impact of ‘news’ on exchange rate seems to lose significant very quickly. Therefore, most of announcements have little effect of ‘news’ on the exchange rate change by the end of the three hours immediately after release. There are broadly consistent with a monetary authority ‘reaction function’ hypothesis affected by both the U.S. and German ‘news’. Due to the German news unlike U.S. news which are released as scheduled, the use of German data allows to test wider than previous literature. The result shows as follow: first,
the reaction of exchange rate of U.S. scheduled announcement is quicker than German unscheduled announcement.

Ervina (2015) explored the impact of macroeconomic news on government bond in Indonesian government bond market. Daily returns of Indonesian government bond benchmark series over five-year period is applied to investigate the effect of domestic and global macroeconomic news announcement. This study uses economic forecast survey produced by Bloomberg as the proxy of market exceptions needed to calculate domestic (Indonesia) and global (US) macroeconomic news announcements surprise. The result shows that surprises of global macroeconomic news announcement are more important than domestic ones for bond returns, especially for recent years, both surprises of global and domestic macroeconomic news announcements affect bond returns volatility.

Li and Hu (1998) intended to test stock market reaction to a wide list of macroeconomic announcements (including money supply, inflation, employment, housing starts, and trade balance, etc.) that employed the daily returns of the Dow Jones Industrial Index, the S&P 500 index, the Russell 1000 index, and the Russell 2000 index. A common model linking stock prices to information posits that stock price equal the present discounted value of a rationally forecasted dividend stream is employed. This paper focused on the differentiation of the economic states and study the reactions of stock market to macroeconomic announcement across states. They consistently found preliminary evidence for varying responses of the stock market to macroeconomic shocks by small cap stock and large cap stocks.

Brenner, Pasquariello and Subrahmanyam (2016) provided a deeper insight into
the relationship between financial and the real economy. They examined the impact of the first release of surprise U.S. macroeconomic information on the short-term anticipation and response of U.S. stock, Treasury, and corporate bond markets. This paper emphasized on the impact of these announcements both on the level and on the volatility and co-movement of those assets’ returns. The excess holding-period returns on seven portfolios of the assets classes are estimated by several extensions of the parsimonious multivariate GARCH-DCC model of Engle (2002). This analysis reveals that not only the process of price formation in each of those financial markets, but also their interaction is driven by fundamentals. This study shows a statically and economically significant dichotomy between the responses of the stock and market to the arrival of unexpected fundamental information as well. Conditional mean, volatility, and co-movement among stock, Treasury, and corporate bond returns is asymmetrical to the surprise announcement. As a conclusion, new information is incorporated into prices within and across U.S. financial market.

Nofsinger and Prucyk (2003) applied Lee and Ready (1991) an algorithm and option-pricing model to examine how 21 different types of scheduled macroeconomic news announcements impact on S&P 100 stock-index option volume and indicated volatility. The result is found that there is a 2-h delay after the announcement before volume increases. But there is an immediate increase in volatility while it slowly dissipates over several hours. They further analyze that bad news announcement released creates the high volume and volatility, however, good news leads to lower volume and is not involved in higher volatility. These results do not share the same views with the predictions of any one model. They also find that the largest reaction in the equity option market comes from Consumer Credit, Consumer Spending, Factory Inventories, NAPM, and Non-Farm Payroll. Six other announcements elicit a mild response.
Gupta and Reid (2013) investigated the impact of monetary policy and macroeconomic news to the sensitivity of industry-specific stock returns. A series of industry-specific South African stock market indices and various unanticipated macroeconomic shocks are examined by an event study and Bayesian vector autoregressive (BVAR) model which provides insight into the dynamic effects of the shocks on the stock market data. The result form event study shows that CPI surprise plays a significant role, whereas monetary surprise is the only variable that consistently and negatively affects the stock returns significantly, both at the aggregate and sectoral levels. The BVAR model which is based on the monthly data indicates that not only the monetary policy surprises, but also the CPI and PPI surprises impact aggregate stock return significantly. But CPI and PPI surprises dominate shorter horizons immediately after the shock and are quite small in magnitude.

Using a GARCH model, Buttner, Hayo, and Neuenkirch (2012) examined the impact of euro area and US macroeconomic news on financial markets in the Czech Republic, Hungary, Poland (CEE-3) from 1999 to 2006. They investigate the effects of announcement news on daily returns of 3-month interest rates, stock market indices, exchange betas versus the euro, and the US dollar. The result of this study shows that both US and European macroeconomic news have a significant impact on CEEC-3 financial markets firstly; second, the European integration process provides alongside an increasing importance of euro area news linked to US news; third, there are country-specific differences: for instance, the Czech stock market is relatively more influenced by foreign news since the Copenhagen Summit in December 2002. The results provide an evidence to the hypothesised a deepening euro area impact on the CEEC-3 overtime and a corresponding reduction in the relative importance of
US shocks.

Using GARCH-M model, Simpson and Ramchander (2004) analysed the impact of daily cash and futures price for several Treasury securities on the release of U.S. macroeconomic announcement by two plausible hypotheses—“Fisher” and “real activity”. In the accordance with the notion of market integration, the futures market is suggested to be co-integrated with the corresponding cash market. Nineteen of twenty-three types of periodic macroeconomic announcements have a significant effect on either the cash or future price. In particularly, non-farm payroll surprise and Treasury budget impact the cash and futures market across the whole maturity spectrum significantly. Macroeconomic news conveys higher inflation and/or economic growth has a negative effect on cash and future prices, which is consistent with the Fisher and real activity hypothesis.

Hess (2004) investigated the response of T-bond future intraday prices to U.S. macroeconomic news announcement surprise. The researcher intends to find the answer for “What determines the relative price impact of release?” by distinguishing several types of information referring to inflation and economic strength and testing the explanatory power of the type of information. Based on T-bond futures prices are dominated by investors’ expectations of real interest rates and future inflation rates. Headline figures in scheduled macroeconomic releases are distinguished into two widely content categories—news linked to inflation expectations and economic activity. Among them, five subcategories are classified. The result shows that all but one of the coefficients capture the immediate futures price significantly. And if headline figures are differentiated by the type of information, test results are much more favourable.
Jiang, Lo and Valente (2014) examined the impact of major macroeconomic news announcements on high-frequency (HF) market and limit orders in the U.S. Treasury markets. I-cross which is an exogenous event introduced by BrokerTec at the end of 2007 applies as a tool to explore the effect of HF activities on liquidity and price efficiency. They widen spreads during the pre-announcement period and lower depth on the order book during the post-announcement. They find that liquidity of HF activities is affected by economic announcements negatively. Even so, HF trades price response efficiently not only during the pre-announcement but also during the post-announcement.

**Table 2-1: Summary Table of Previous Related Studies**

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Year</th>
<th>Methodology</th>
<th>Independent variables</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andersen, T.G., and Bollerslev, T.</td>
<td>1998</td>
<td>ARCH model</td>
<td>Employment Report, the Merchandise Trade Deficit, the Producer Price Index (PPI), Durable Goods, estimates and revisions to quarterly Gross Domestic Product (GDP), Retail Sales, Housing Starts, Leading Indicators, and Jobless Claims</td>
<td>PPI, Retail Sales, and Durable Goods</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Year</td>
<td>Method</td>
<td>Variables</td>
<td>Notes</td>
</tr>
<tr>
<td>-----------</td>
<td>------</td>
<td>--------</td>
<td>-----------</td>
<td>-------</td>
</tr>
<tr>
<td>Brenner, M., Pasquariello, P., and Subrahmanyam, M.,</td>
<td>2016</td>
<td>GARCH-DCC model</td>
<td>Total CPI, the unemployment rate, and nonfarm payroll employment, and the target federal funds rate</td>
<td>Total CPI, and nonfarm payroll employment</td>
</tr>
<tr>
<td>Buttner, D., Hayo, B., and Neuenkirch, M.,</td>
<td>2012</td>
<td>GARCH model</td>
<td>Consumer price index, producer price index, gross domestic product, retail sales, industrial production, trade balance, unemployment rate, consumer confidence, business climate, IFO index, ISM index</td>
<td>US real economic news announcements like ISM index moving the stock market.</td>
</tr>
<tr>
<td>Cai, F., Joo, H., and Zhang, Z.W.,</td>
<td>2009</td>
<td>Regression</td>
<td>Business Inventories, Budget Deficit, Current Account, Capacity Utilization, Consumer Confidence, Consumer Credit, Construction Spending, Consumer Price Index, Durable Goods Orders, Factory Orders, Gross Domestic Product, Housing Starts, Imports, Interest rate (FOMC), Industrial production, NAPM, Leading Indicators, New Home Sales, Nonfarm Payroll Employment, Personal Spending, Personal Income, Producer Price, Retail Sales, Trade Balance, Initial Unemployment, Whole sales</td>
<td>Even the domestic also get the significant result, but the US economic news announcement showed a stronger significant result</td>
</tr>
<tr>
<td>Authors</td>
<td>Year</td>
<td>Methodology</td>
<td>Variables</td>
<td>Model Specifics</td>
</tr>
<tr>
<td>--------------------------</td>
<td>------</td>
<td>-------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Chen, Q., Gong, Y.T., and Chen, D.L.</td>
<td>2012</td>
<td>modified BEKK model, SVAR model</td>
<td>US public information</td>
<td>regardless on Chinse stock market or bond market, the public information has significant short-term positive shocks on the rate of return</td>
</tr>
<tr>
<td>Ervina, D.</td>
<td>2015</td>
<td>ARMA model</td>
<td>Consumer price index, GDP, Current balance, Retail sales and Producer price index</td>
<td>Consumer price index, Current balance, Retail sales and Producer price index</td>
</tr>
<tr>
<td>Gupta, R., and Reid, M.</td>
<td>2013</td>
<td>event study and Bayesian vector autoregressive (BVAR) model</td>
<td>GDP, Current account, Consumer price index and Producer price index</td>
<td>Current account, Consumer price index and Producer price index</td>
</tr>
<tr>
<td>Gurgul, H., and Wojtowicz, T.</td>
<td>2014</td>
<td>ARMA model</td>
<td>Consumer Price Index, the Producer Price Index, Industrial Production, Retail Sales, Durable Goods Orders and Nonfarm Payrolls</td>
<td>Consumer Price Index, the Producer Price Index, Indus-trial Production, Retail Sales, Durable Goods Orders and Nonfarm Payrolls</td>
</tr>
<tr>
<td>Gurgul, H., and Wojtowicz, T.</td>
<td>2015</td>
<td>Using nonparametric rank test in the framework of event study methodology</td>
<td>the Consumer Price Index, the Producer Price Index, Industrial Production, Retail Sales, Durable Goods Orders, Nonfarm Payrolls, Existing Home Sales, Housing Starts, New Home Sales and Consumer Confidence</td>
<td>Industrial Production, Retail Sales, Durable Goods Orders, Nonfarm Payrolls, Existing Home Sales, Housing Starts, New Home Sales and Consumer Confidence</td>
</tr>
<tr>
<td>Haataja, J.</td>
<td>2011</td>
<td>Regression</td>
<td>Nonfarm payroll, Consumer price index, Producer price index, Retail sales, Import price, Consumer confidence index ISM index</td>
<td>Consumer Price Index, Nonfarm Payroll, Retail Sales, Import Prices and ISM Index</td>
</tr>
<tr>
<td>Authors</td>
<td>Year</td>
<td>Method</td>
<td>Variables</td>
<td>Models/Results</td>
</tr>
<tr>
<td>--------</td>
<td>------</td>
<td>--------</td>
<td>---------------------------------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Li, L., and Hu Z.L.F.</td>
<td>1998</td>
<td>Regression</td>
<td>Business Inventories, Capacity Utilization, Home sales, Consumer Price Index, Durable Goods Orders, Factory Orders, Housing Starts, Imports, Industrial production, Leading Indicators, Unemployment, Nonfarm Payroll, Producer Price, Retail Sales, Trade Balance, M1</td>
<td>Industrial production, Unemployment, Housing Starts, Nonfarm Payroll, M1, Producer Price, Consumer Price Index,</td>
</tr>
<tr>
<td>Nguyen, T.</td>
<td>2011</td>
<td>MA-EGARCH model</td>
<td>Nonfarm payroll, Housing statistics, Unemployment rate, GDP, Industrial production, Leading indicator, Retail sales, Consumer price index, Producer price index, Current account, Trade balance and the Federal reserve’s target rates</td>
<td>Real economic variables like Housing statistics, Retail sales, Consumer price index, Producer index and Current account have significant effect of Vietnamese stock market.</td>
</tr>
<tr>
<td>Authors</td>
<td>Year</td>
<td>Model</td>
<td>Data</td>
<td>Notes</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>------</td>
<td>-------------</td>
<td>--------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Nikkinen, J., Omran, M., Sahlstrom, P., and Aijo, J.,</td>
<td>2008</td>
<td>GARCH model</td>
<td>CPI, Employment Situation, ISM Manufacturing and PPI</td>
<td>the employment and ISM are the most important US news releases among the emerging Asian countries</td>
</tr>
<tr>
<td>Nofsinger, J.N., and Prucyk, B.,</td>
<td>2003</td>
<td>algorithm and option-pricing model</td>
<td>Consumer credit, Consumer price index, Consumer spending, Consumer confidence, Durable goods, Employment costs, GDP, Housing starts, Industrial production, Leading indicator, Producer price, Retail sales, Trade Deficit, Unemployment claim, Factory inventories, NAPM, New home sales and Nonfarm payroll</td>
<td>Consumer credit, Consumer spending, Factory inventories, NAPM, New home sales and Nonfarm payroll</td>
</tr>
<tr>
<td>Santos, F., Garcia, M., and Medeiros, M.,</td>
<td>2013</td>
<td>Linear model</td>
<td>FOMC interest rate decision, Nonfarm payroll and Consumer price index</td>
<td>FOMC interest rate decision, Nonfarm payroll</td>
</tr>
</tbody>
</table>
CHAPTER III
RESEARCH FRAMEWORK

This chapter includes four sections which portrays the theories of modeling, conceptual framework conducting, process of research model establishing and hypothesis testing. The first section presents the theoretical framework of the research, which includes the previous studies being applied to constitute it. According to theoretical framework, the following second section introduces conceptual framework of the study. The independent and dependent variables are defined and their relationship are illustrated in this section as well. The third section addresses the models of research according to the hypotheses that we set; and after that, all hypotheses we set which are based on our conceptual frameworks will be listed in the last part.

3.1 Theoretical Framework find

The core purpose underlying this research is attempting to study the relationship between Chinese mutual funds volatility and the macroeconomic news from the United States; Several useful and well-known indicators are tested by researcher, to develop a meaningful equation to forecast the NAV volatility of the Chinese equity mutual fund. Based on the feature of equity mutual fund which is a portfolio investment of stock and linked extremely closely to stock market, in other words, equity mutual fund market changed its status with the change of stock market. Although there is no research that directly studied the relationship between equity mutual fund and U.S. macroeconomic news surprise, several
theories can be drawn from referred studies to support and help to develop research model. The following papers have been considered:

Nguyen’s (2011) framework used time-varying MA-EGARCH (1,1) model to explore the spillover effect of the 12 key US macroeconomic news in the first two moments of the Vietnamese stock market returns. U.S. exception and actual announcement data are provided monthly by Bloomberg. This study uses conditional mean return and condition variance of daily closing data in Vietnamese stock market index as dependent variables. Data time of twelve key macroeconomic announcements is from August 2000 to September 2009. These independent data are distinguished into four groups: Real economic variables comprising of Non-farm payroll, Unemployment level, GDP, Housing Statistics, Industrial Production, Leading indicators and Retail sales; Price variables consist of Consumer Price Index and Producer Price Index; Trade variables contain Current account and Balance of trading; Monetary policy variables include the Federal Reserve’s target rate.

Wongswan (2006) studied how information which represent the important macroeconomic announcements in the United States and Japan to Korean and Thai transmit from the United States and Japan to Korean and Thai equity markets. Dependent variables in this paper consisted of Korea and Thai high frequency intraday stock value and trading volume during Jan 1995 to Dec 2000. Data, time, median and standard deviation of macroeconomic announcement expectations formed independent variables which came from four groups: U.S. macroeconomic news including Employment Report (EMP) divided into Unemployment Rate (EMPU) and Non-farm Payrolls (EMPNF), the Producer Price Index (PPI), the Consumer Price Index (CPI), and FOMC decisions; Japanese macroeconomic announcements comprising of Gross Domestic Product (GDP), the Industrial
Production Index (IPI), the Wholesale Price Index (WPI), the Tankan Business Survey (TK), and Monetary Policy Meeting (MPM) decisions; Korean announcements constituted by GDP, IPI, CPI, and Trade Balance (TB) and Thai macroeconomic announcements made up by GDP, CPI, and TB. All dependent and independent variables are conducted by GARCH model with the dummy variables. The researcher eliminates the time difference between the United States and Asia by applying the absolute value of the daily volatility spillover return on the U.S. S&P 500 index to minimise the potential effect for Asia market.

Nikkinen et al., (2006) studied how 35 countries’ stock market return volatility are impacted by US macroeconomic news surprise all together. These totally 35 stock markets are classified into 7 groups in term of regions, each group represents one dependent variable. These groups and variables are F7 countries, European countries, Asian countries, developed Asian countries, emerging countries, Transition countries and Latin American countries. Independent variables in this study consist of Consumer Confidence, Consumer Price Index, Employment cost index, Employment situation, Gross Domestic Product, import and export indices, NAPM (National Association of Purchasing manager-changed to be ISM PIM) Manufacturing, NAPM Non-manufacturing and Produce Price Index and Retail sales. Most of them used by the author are released monthly. The volatility of each group was tested by GARCH model, but the relationship between volatility in each group and US macroeconomic announcement was estimated with Cross-Sectional regression analysis.

3.2 Conceptual Framework

The relationship between independent variables and dependent variables which are functionally related to the given independent variables are presented in the conceptual framework, in order to investigate the most significant macroeconomic determinants of the
NAV volatilities of the greatest size of China equity mutual funds. According to the literature review in chapter 2, the conceptual framework is conducted as shown in figure 3-1. It’s concluded from theoretical frameworks of previous studies according to the available secondary data from reliable sources. For this reason, eleven selected independent variables were generated as the most relevant factors for the volatilities of China mutual funds. These independent variables contain Nonfarm Payrolls, CPI, GDP QoQ, Unemployment Rate, Retail Sales & Food Services, Total MoM, Housing Starts Number MM, PMI Chicago, Import Price Index, Industrial Production, CCI and Durable Goods Orders. The dependent variable is volatility of each Chinese mutual funds in this paper. All these variables are explored during the period during January 1st, 2010 to June 30th, 2016.

Figure 3-1: Conceptual framework of this research
3.3 Research Models

In order to test the relationship between eleven independent variables and ten dependent variables to find out whether the macroeconomic news surprise variables have a significant relationship with Chinese equity mutual fund NAV volatility, the models of research will be as follows, according to the hypotheses that we set:

$$\sigma^2 = \text{[selected GARCH typed models’ variables]} + \text{Nfpr, + Cpim, + Gdpq, + Uepr, + Rtsm, + Hsnm, + Pnic, + Impi, + Indp, + Ccfi, + Dgod,}$$
Where:

\[ \sigma^2 = \text{The NAV volatility of Chinese equity mutual fund} \]
\[ t = \text{The time of period “Month”} \]

\[ \text{Nfpr} = \text{the Surprises of Nonfarm Payrolls} \]
\[ \text{Cpim} = \text{the Surprises of CPI (Consumer Price Index) Month on Month} \]
\[ \text{Gdpq} = \text{the Surprises of GDP (Gross Domestic Product) Quarter on Quarter} \]
\[ \text{Uepr} = \text{the Surprises of Unemployment Rate} \]
\[ \text{Rtsm} = \text{the Surprises of Retail Sales & Food Services Total MoM} \]
\[ \text{Hsnm} = \text{the Surprises of Housing Starts Number MM} \]
\[ \text{Pmic} = \text{the Surprises of PMI Chicago} \]
\[ \text{Impi} = \text{the Surprises of Import Price Index} \]
\[ \text{Indp} = \text{the Surprises of Industrial Production} \]
\[ \text{Ccfi} = \text{the Surprises of CCI (Consumer Confidence Index)} \]
\[ \text{Dgod} = \text{the Surprises of Durable Goods Orders} \]

The surprise value = actual value of announcement - expected value of announcement

3.4 Hypotheses

This study includes eleven independent variables for each dependent variable, and in total there are 10 dependent variables. Therefore, 110 hypotheses are developed according to the conceptual frameworks in this study, to test the significant relationships between dependent variables and independent variables during the period from 1/1/2010 to 6/30/2016. Null hypothesis (Ho) and alternative hypothesis (Ha) are stated as follows:
Hypothesis 1:

$H_{10}$: There is no significant relationship between the announcements of “Nonfarm Payrolls” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

$H_{1a}$: There is a significant relationship between the announcements of “Nonfarm Payrolls” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

Hypothesis 2:

$H_{20}$: There is no significant relationship between the announcements of “CPI” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

$H_{2a}$: There is a significant relationship between the announcements of “CPI” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

Hypothesis 3:

$H_{30}$: There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

$H_{3a}$: There is a significant relationship between the announcements of “GDP QoQ” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

Hypothesis 4:

$H_{40}$: There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

$H_{4a}$: There is a significant relationship between the announcements of “Unemployment Rate” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.
Hypothesis 5:

$H_{50}$: There is no significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

$H_{5a}$: There is a significant correlation between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

Hypothesis 6:

$H_{60}$: There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

$H_{6a}$: There is a significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

Hypothesis 7:

$H_{70}$: There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

$H_{7a}$: There is a significant relationship between the announcements of “PMI Chicago” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

Hypothesis 8:

$H_{80}$: There is no significant relationship between the announcements of “Import Price Index” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

$H_{8a}$: There is a significant relationship between the announcements of “Import Price Index” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.
Hypothesis 9:

H9₀: There is no significant relationship between the announcements of “Industrial Production” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

H9ₐ: There is a significant relationship between the announcements of “Industrial Production” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

Hypothesis 10:

H10₀: There is no significant relationship between the announcements of “Consumer Confidence Index” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

H10ₐ: There is a significant relationship between the announcements of “Consumer Confidence Index” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

Hypothesis 11:

H11₀: There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

H11ₐ: There is a significant relationship between the announcements of “Durable Goods Orders” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

Hypothesis 12:

H12₀: There is no significant relationship between the announcements of “Non-farm Payroll” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

H12ₐ: There is a significant relationship between the announcements of “Non-farm Payroll” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.
Hypothesis 13:

H13₀: There is no significant relationship between the announcements of “CPI” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

H13ₐ: There is a significant relationship between the announcements of “CPI” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

Hypothesis 14:

H14₀: There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

H14ₐ: There is a significant relationship between the announcements of “GDP QoQ” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

Hypothesis 15:

H15₀: There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

H15ₐ: There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

Hypothesis 16:

H16₀: There is no significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

H16ₐ: There is a significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.
Hypothesis 17:
H17₀: There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.
H17ₐ: There is a significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

Hypothesis 18:
H18₀: There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.
H18ₐ: There is a significant relationship between the announcements of “PMI Chicago” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

Hypothesis 19:
H19₀: There is no significant relationship between the announcements of “Import Price Index” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.
H19ₐ: There is a significant relationship between the announcements of “Import Price Index” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

Hypothesis 20:
H20₀: There is no significant relationship between the announcements of “Industrial Production” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.
H20ₐ: There is a significant relationship between the announcements of “Industrial Production” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.
Hypothesis 21:

H$_{210}$: There is no significant relationship between the announcements of “CCI” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

H$_{21a}$: There is a significant relationship between the announcements of “CCI” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

Hypothesis 22:

H$_{220}$: There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

H$_{22a}$: There is a significant relationship between the announcements of “Durable Goods Orders” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

Hypothesis 23:

H$_{230}$: There is no significant relationship between the announcements of “Non-Farm Payroll” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

H$_{23a}$: There is a significant relationship between the announcements of “Non-Farm Payroll” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

Hypothesis 24:

H$_{240}$: There is no significant relationship between the announcements of “CPI” in the U.S. and BOCOM Blue Chip M NAV volatility.

H$_{24a}$: There is a significant relationship between the announcements of “CPI” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.
Hypothesis 25:
H$$25_0$$: There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.
H$$25_a$$: There is a significant relationship between the announcements of “GDP QoQ” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

Hypothesis 26:
H$$26_0$$: There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.
H$$26_a$$: There is a significant relationship between the announcements of “Unemployment Rate” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

Hypothesis 27:
H$$27_0$$: There is no significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.
H$$27_a$$: There is a significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

Hypothesis 28:
H$$28_0$$: There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.
H$$28_a$$: There is a significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.
Hypothesis 29:

H29_0: There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

H29_α: There is a significant relationship between the announcements of “PMI Chicago” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

Hypothesis 30:

H30_0: There is no significant relationship between the announcements of “Import Price Index” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

H30_α: There is a significant relationship between the announcements of “Import Price Index” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

Hypothesis 31:

H31_0: There is no significant relationship between the announcements of “Industrial Production” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

H31_α: There is a significant relationship between the announcements of “Industrial Production” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

Hypothesis 32:

H32_0: There is no significant relationship between the announcements of “CCI” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

H32_α: There is a significant relationship between the announcements of “CCI” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.
Hypothesis 33:

$H_{33}^0$: There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

$H_{33}^a$: There is a significant relationship between the announcements of “Durable Goods Orders” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

Hypothesis 34:

$H_{34}^0$: There is no significant relationship between the announcements of “Non-Farm Payroll” in the U.S. and China Universal SCI Index Fund NAV volatility.

$H_{34}^a$: There is a significant relationship between the announcements of “Non-Farm Payroll” in the U.S. and China Universal SCI Index Fund NAV volatility.

Hypothesis 35:

$H_{35}^0$: There is no significant relationship between the announcements of “CPI” in the U.S. and China Universal SCI Index Fund NAV volatility.

$H_{35}^a$: There is a significant relationship between the announcements of “CPI” in the U.S. and China Universal SCI Index Fund NAV volatility.

Hypothesis 36:

$H_{36}^0$: There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and China Universal SCI Index Fund NAV volatility.

$H_{36}^a$: There is a significant relationship between the announcements of “GDP QoQ” in the U.S. and China Universal SCI Index Fund NAV volatility.
Hypothesis 37:
H₃⁷₀: There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and China Universal SCI Index Fund NAV volatility.
H₃⁷₁: There is a significant relationship between the announcements of “Unemployment Rate” in the U.S. and China Universal SCI Index Fund NAV volatility.

Hypothesis 38:
H₃⁸₀: There is no significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and China Universal SCI Index Fund NAV volatility.
H₃⁸₁: There is a significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and China Universal SCI Index Fund NAV volatility.

Hypothesis 39:
H₃⁹₀: There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and China Universal SCI Index Fund NAV volatility.
H₃⁹₁: There is a significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and China Universal SCI Index Fund NAV volatility.

Hypothesis 40:
H₄₀₀: There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and China Universal SCI Index Fund NAV volatility.
H₄₀₁: There is a significant relationship between the announcements of “PMI Chicago” in the U.S. and China Universal SCI Index Fund NAV volatility.
Hypothesis 41:
H41_0: There is no significant relationship between the announcements of “Import Price Index” in the U.S. and China Universal SCI Index Fund NAV volatility.
H41_a: There is a significant relationship between the announcements of “Import Price Index” in the U.S. and China Universal SCI Index Fund NAV volatility.

Hypothesis 42:
H42_0: There is no significant relationship between the announcements of “Industrial Production” in the U.S. and China Universal SCI Index Fund NAV volatility.
H42_a: There is a significant relationship between the announcements of “Industrial Production” in the U.S. and China Universal SCI Index Fund NAV volatility.

Hypothesis 43:
H43_0: There is no significant relationship between the announcements of “CCI” in the U.S. and China Universal SCI Index Fund NAV volatility.
H43_a: There is a significant relationship between the announcements of “CCI” in the U.S. and China Universal SCI Index Fund NAV volatility.

Hypothesis 44:
H44_0: There is no significant relationship between the announcements of “Durable Goods Order” in the U.S. and China Universal SCI Index Fund NAV volatility.
H44_a: There is a significant relationship between the announcements of “Durable Goods Order” in the U.S. and China Universal SCI Index Fund NAV volatility.
Hypothesis 45:

H450: There is no significant relationship between the announcements of “Non-Farm Payroll” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

H45a: There is a significant relationship between the announcements of “Non-Farm Payroll” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

Hypothesis 46:

H460: There is no significant relationship between the announcements of “CPI” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

H46a: There is a significant relationship between the announcements of “CPI” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

Hypothesis 47:

H470: There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

H47a: There is a significant relationship between the announcements of “GDP QoQ” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

Hypothesis 48:

H480: There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

H48a: There is a significant relationship between the announcements of “Unemployment Rate” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.
Hypothesis 49:

$H_{49_0}$: There is no significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

$H_{49_a}$: There is a significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

Hypothesis 50:

$H_{50_0}$: There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

$H_{50_a}$: There is a significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

Hypothesis 51:

$H_{51_0}$: There is no significant correlation between the announcements of “PMI Chicago” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

$H_{51_a}$: There is a significant relationship between the announcements of “PMI Chicago” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

Hypothesis 52:

$H_{52_0}$: There is no significant relationship between the announcements of “Import Price Index” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.
H52a: There is a significant relationship between the announcements of “Import Price Index” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

Hypothesis 53:

H530: There is no significant relationship between the announcements of “Industrial Production” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

H53a: There is a significant relationship between the announcements of “Industrial Production” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

Hypothesis 54:

H540: There is no significant relationship between the announcements of “CCI” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

H54a: There is a significant relationship between the announcements of “CCI” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

Hypothesis 55:

H550: There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

H55a: There is a significant relationship between the announcements of “Durable Goods Orders” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

Hypothesis 56:

H560: There is no significant relationship between the announcements of “Non-Farm Payroll” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.
H56ₐ: There is a significant relationship between the announcements of “Non-Farm Payroll” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

Hypothesis 57:

H57₀: There is no significant relationship between the announcements of “CPI” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

H57ₐ: There is a relationship correlation between the announcements of “CPI” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

Hypothesis 58:

H58₀: There is no relationship correlation between the announcements of “GDP QoQ” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

H58ₐ: There is a relationship correlation between the announcements of “GDP QoQ” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

Hypothesis 59:

H59₀: There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

H59ₐ: There is a significant relationship between the announcements of “Unemployment Rate” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

Hypothesis 60:

H60₀: There is no significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.
volatility.

H60a: There is a significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

Hypothesis 61:

H610: There is no relationship correlation between the announcements of “Housing Starts Number MM” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

H61a: There is a relationship correlation between the announcements of “Housing Starts Number MM” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

Hypothesis 62:

H620: There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

H62a: There is a significant relationship between the announcements of “PMI Chicago” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

Hypothesis 63:

H630: There is no significant relationship between the announcements of “Import Price Index” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

H63a: There is a significant relationship between the announcements of “Import Price Index” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

Hypothesis 64:
H64₀: There is no significant relationship between the announcements of “Industrial Production” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

H64ₐ: There is a significant relationship between the announcements of “Industrial Production” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

Hypothesis 65:

H65₀: There is no significant relationship between the announcements of “CCI” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

H65ₐ: There is a significant relationship between the announcements of “CCI” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

Hypothesis 66:

H66₀: There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

H66ₐ: There is a significant relationship between the announcements of “Durable Goods Orders” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

Hypothesis 67:

H67₀: There is no significant relationship between the announcements of “Non-Farm Payroll” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

H67ₐ: There is a significant relationship between the announcements of “Non-Farm Payroll” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.
Hypothesis 68:

H68₀: There is no significant relationship between the announcements of “CPI” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

H68ₐ: There is a significant relationship between the announcements of “CPI” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

Hypothesis 69:

H69₀: There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

H69ₐ: There is a significant relationship between the announcements of “GDP QoQ” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

Hypothesis 70:

H70₀: There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

H70ₐ: There is a significant relationship between the announcements of “Unemployment Rate” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

Hypothesis 71:

H71₀: There is no significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and BOCOM Schroders SSE180 Corporate
Governance ETF Feeder NAV volatility.

H71a: There is a significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

Hypothesis 72:

H720: There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

H72a: There is a significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

Hypothesis 73:

H730: There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

H73a: There is a significant relationship between the announcements of “PMI Chicago” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

Hypothesis 74:

H740: There is no significant relationship between the announcements of “Import Price Index” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

H74a: There is a significant relationship between the announcements of “Import Price Index”
in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

Hypothesis 75:
H750: There is no significant relationship between the announcements of “Industrial Production” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder volatility.
H75a: There is a significant correlation between the announcements of “Industrial Production” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

Hypothesis 76:
H760: There is no significant relationship between the announcements of “CCI” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.
H76a: There is a significant relationship between the announcements of “CCI” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

Hypothesis 77:
H770: There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.
H77a: There is a significant relationship between the announcements of “Durable Goods Orders” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.
Hypothesis 78:

H78\(_0\): There is no significant relationship between the announcements of “Non-Farm Payroll” in the U.S. and BOCOM Growth Mixed A NAV volatility.

H78\(_a\): There is a significant relationship between the announcements of “Non-Farm Payroll” in the U.S. and BOCOM Growth Mixed A NAV volatility.

Hypothesis 79:

H79\(_0\): There is no significant relationship between the announcements of “CPI” in the U.S. and BOCOM Growth Mixed A NAV volatility.

H79\(_a\): There is a significant relationship between the announcements of “CPI” in the U.S. and BOCOM Growth Mixed A NAV volatility.

Hypothesis 80:

H80\(_0\): There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and BOCOM Growth Mixed A NAV volatility.

H80\(_a\): There is a significant relationship between the announcements of “GDP QoQ” in the U.S. and BOCOM Growth Mixed A NAV volatility.

Hypothesis 81:

H81\(_0\): There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and BOCOM Growth Mixed A NAV volatility.

H81\(_a\): There is a significant relationship between the announcements of “Unemployment Rate” in the U.S. and BOCOM Growth Mixed A NAV volatility.
Hypothesis 82:

$H_{82_0}$: There is no significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and BOCOM Growth Mixed A NAV volatility.

$H_{82_a}$: There is a significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and BOCOM Growth Mixed A NAV volatility.

Hypothesis 83:

$H_{83_0}$: There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and BOCOM Growth Mixed A NAV volatility.

$H_{83_a}$: There is a significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and BOCOM Growth Mixed A NAV volatility.

Hypothesis 84:

$H_{84_0}$: There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and BOCOM Growth Mixed A NAV volatility.

$H_{84_a}$: There is a significant relationship between the announcements of “PMI Chicago” in the U.S. and BOCOM Growth Mixed A NAV volatility.

Hypothesis 85:

$H_{85_0}$: There is no significant relationship between the announcements of “Import Price Index” in the U.S. and BOCOM Growth Mixed A NAV volatility.

$H_{85_a}$: There is a significant relationship between the announcements of “Import Price Index” in the U.S. and BOCOM Growth Mixed A NAV volatility.
Hypothesis 86:

H86₀: There is no significant relationship between the announcements of “Industrial Production” in the U.S. and BOCOM Growth Mixed A NAV volatility.

H86ₐ: There is a significant relationship between the announcements of “Industrial Production” in the U.S. and BOCOM Growth Mixed A NAV volatility.

Hypothesis 87:

H87₀: There is no significant relationship between the announcements of “CCI” in the U.S. and BOCOM Growth Mixed A NAV volatility.

H87ₐ: There is a significant relationship between the announcements of “CCI” in the U.S. and BOCOM Growth Mixed A NAV volatility.

Hypothesis 88:

H88₀: There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and BOCOM Growth Mixed A NAV volatility.

H88ₐ: There is a significant relationship between the announcements of “Durable Goods Orders” in the U.S. and BOCOM Growth Mixed A NAV volatility.

Hypothesis 89:

H89₀: There is no significant relationship between the announcements of “Non-Farm Payroll” in the U.S. and Lion Value Growth Mixed NAV volatility.

H89ₐ: There is a significant relationship between the announcements of “Non-Farm Payroll” in the U.S. and Lion Value Growth Mixed NAV volatility.
Hypothesis 90:

H90₀: There is no significant relationship between the announcements of “CPI” in the U.S. and Lion Value Growth Mixed NAV volatility.

H90₁: There is a significant relationship between the announcements of “CPI” in the U.S. and Lion Value Growth Mixed NAV volatility.

Hypothesis 91:

H91₀: There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and Lion Value Growth Mixed NAV volatility.

H91₁: There is a significant relationship between the announcements of “GDP QoQ” in the U.S. and Lion Value Growth Mixed NAV volatility.

Hypothesis 92:

H92₀: There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and Lion Value Growth Mixed NAV volatility.

H92₁: There is a significant relationship between the announcements of “Unemployment Rate” in the U.S. and Lion Value Growth Mixed NAV volatility.

Hypothesis 93:

H93₀: There is no significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and Lion Value Growth Mixed NAV volatility.

H93₁: There is a significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and Lion Value Growth Mixed NAV volatility.
Hypothesis 94:

H940: There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and Lion Value Growth Mixed NAV volatility.

H94a: There is a significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and Lion Value Growth Mixed NAV volatility.

Hypothesis 95:

H950: There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and Lion Value Growth Mixed NAV volatility.

H95a: There is a significant relationship between the announcements of “PMI Chicago” in the U.S. and Lion Value Growth Mixed NAV volatility.

Hypothesis 96:

H960: There is no significant relationship between the announcements of “Import Price Index” in the U.S. and Lion Value Growth Mixed NAV volatility.

H96a: There is a significant relationship between the announcements of “Import Price Index” in the U.S. and Lion Value Growth Mixed NAV volatility.

Hypothesis 97:

H970: There is no significant relationship between the announcements of “Industrial Production” in the U.S. and Lion Value Growth Mixed NAV volatility.

H97a: There is a significant relationship between the announcements of “Industrial Production” in the U.S. and Lion Value Growth Mixed NAV volatility.
Hypothesis 98:

H98₀: There is no significant relationship between the announcements of “CCI” in the U.S. and Lion Value Growth Mixed NAV volatility.

H98ₐ: There is a significant relationship between the announcements of “CCI” in the U.S. and Lion Value Growth Mixed NAV volatility.

Hypothesis 99:

H99₀: There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and Lion Value Growth Mixed NAV volatility.

H99ₐ: There is a significant relationship between the announcements of “Durable Goods Orders” in the U.S. and Lion Value Growth Mixed NAV volatility.

Hypothesis 100:

H100₀: There is no significant relationship between the announcements of “Non-Farm Payroll” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

H100ₐ: There is a significant relationship between the announcements of “Non-Farm Payroll” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

Hypothesis 101:

H101₀: There is no significant relationship between the announcements of “CPI” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.
H101: There is a significant correlation between the announcements of “CPI” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

Hypothesis 102:
H102\(_0\): There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.
H102\(_a\): There is a significant relationship between the announcements of “GDP QoQ” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

Hypothesis 103:
H103\(_0\): There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.
H103\(_a\): There is a significant relationship between the announcements of “Unemployment Rate” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

Hypothesis 104:
H104\(_0\): There is no significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.
H104\(_a\): There is a significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

Hypothesis 105:
H105\(_0\): There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.
H105\textsubscript{a}: There is a significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

Hypothesis 106:

H106\textsubscript{0}: There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and Cambodian Riel NAV volatility.

H106\textsubscript{a}: There is a significant relationship between the announcements of “PMI Chicago” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

Hypothesis 107:

H107\textsubscript{0}: There is no significant relationship between the announcements of “Import Price Index” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

H107\textsubscript{a}: There is a significant relationship between the announcements of “Import Price Index” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

Hypothesis 108:

H108\textsubscript{0}: There is no significant relationship between the announcements of “Industrial Production” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

H108\textsubscript{a}: There is a significant relationship between the announcements of “Industrial Production” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

Hypothesis 109:

H109\textsubscript{0}: There is no significant relationship between the announcements of “CCI” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.
H109_a: There is a significant relationship between the announcements of “CCI” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

Hypothesis 110:

H110_0: There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

H110_a: There is a significant relationship between the announcements of “Durable Goods Orders” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

CHAPTER IV
RESEARCH METHODOLOGY

This chapter is going through the process and method used for running this study and describing how it was conducted. The first part provides the information and background of data sources; the second part introduces the statistical treatment of data sample and research methodologies including ARMA model and GARCH-typed models; the statistics treatment will be presented last. Data stationary testing, ARMA model construction and GARCH-typed models building processes will be explained.
4.1 Data source and data collection

To investigate the cause-and-effect relationship between two factors (explanatory and dependent variable) in statistics, causal research is adopted in this paper. In this case, variable regression models are conducted to test how these surprise news announcements have effect on Chinese equity mutual fund market.

With benefits of already there- no hassles of data collection, being less expensive and without personal responsibility for data quality, secondary is data employed in this study, which is collected from other previous cases and currently available for latter studies. The intention of the researcher is to study the relationship between Chinese equity funds volatility and the announcements of macroeconomic indicators from the US, so that the researcher establishes a data sequence conditional heteroskedasticity models. The work file structure is dated-regular frequency and the data specification of the frequency is 5-day week since fund’s NAV data and macroeconomic information are not released on the weekend.

4.1.1 Chinese equity mutual fund variables and collection

With fastest-growing in emerging market, China surpassed Singapore to become the second-largest market in East Asia which is the third-largest mutual funds market worldwide. Chinese mutual funds’ assets had expended to roughly USD 1.3 trillion which was almost doubled in 2015. There are 5 kinds of Open-ended mutual funds which are equity mutual funds, mixed mutual funds, bond mutual funds, monetary mutual fund and QDII (Qualified Domestic Institutional Investor). All of funds values come from Sina Finance which is the most influent mainstream media in China. As the biggest financial internet media, Sina Finance was established at Aug 1999, which occupied more than one in three financial media market share that is 3 times more than the second large one.
Based on the research intention, the author selects 10 largest size of equity mutual funds as beginning of the 1st of Jan 2010 to the 30th of June 2016 from 680 equity mutual funds. The dependent data sample consists of daily data of top 10 Chinese equity mutual fund’s NAVs in term of sizing, named as ChinaAMC CSI 300 Feeder ETF, E Fund SZSE 100 Feeder ETF, BOCOM Blue Chip Mixed, China Universal SCI Index Fund, GF CSI500 Index ETF Feeder Fund (LOF)A, TEDA Preferred Enterprises Equity Fund, BOCOM Schroders SSE180 Corporate Governance ETF Feeder, BOCOM Growth Mixed A, Lion Value Growth Mixed and ChinaAMC SSE 50 ETF. Totally 1611 observations which contain six and half year’s daily data for each fund are collected to establish the sequence.

For the dependent variables, the NAV values of Chinese mutual funds is daily closing rate. There is fund’s NAV only released on work day but on weekends or any other holidays like traditional Chinese holidays (Chinese New Year, Mid-autumn Festival, Dragon Boat Festival and so forth) and international holidays (Labor Day, New Year etc.), when no information is released, the researcher would simply adjust the same daily fund’s NAV as the last day with funds trading information. For instant, one of equity mutual funds started from 4th of Jan 2010, and the NAV released weekly in the first month, where values were filled same as the last day. There is day time in China while it is night in U.S. It means that the researcher sets the log difference of that specified fund’s NAV in these days as 1.

4.1.2 Monthly US macroeconomic announcements variables and collection

There are lots of powerful evidences from a great many previous studies showing the importance of US economic status on global financial market. Countless indices of economic conditions and statistics are regularly released weekly, monthly, quarterly and annually. All
of these announcements of public macroeconomic indicators employed in this study are monthly but GDP is reported quarterly; the latest data for this variable regression is from Aug 13th, 2016. In order to test the data without bias, the researcher brings all these days from January 1st, 2010 to June 30th, 2016.

After summarizing empirical studies, the researcher picks most effect and frequently applied eleven announcements from all that macroeconomic information. The U.S. macroeconomic indicators include: Non-farm Payrolls, CPI, GDP QoQ, Unemployment Rate, Retail Sales & Food Services Total MoM, Housing Starts Number MM, PMI Chicago, Import Price Index, Industrial Production, CCI and Durable Goods Orders. The release time order of these news announcement is as follow: Nonfarm payroll, Unemployment rate and Durable goods orders are released at the beginning of each month; Consumer price index, GDP, Retail sales, Import price index and Industrial production are reported at the middle of the month; the rest news like GDP, PMI Chicago and Consumer confidence index are released in the end of the month. For the independent variables, the surprise value of each macroeconomic is utilized, based on the difference between forecasting value and actual release value from Thomson Reuter. As multinational media and financial information resource, Thomson Reuter moved beyond the realm of financial news with the release of a more affordable option to the Bloomberg Terminal in 2011 which is named as Thomson Rueter Eikon. To comfort to dependent variables which are Chinese equity mutual fund market, sample period of these macroeconomic announcements was covered from beginning of 2010 until mid of 2016 as well.

Table 4-1-3: Summary of Data Source

<table>
<thead>
<tr>
<th>Variables</th>
<th>Time period</th>
<th>Data sources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Monthly U.S. actual and forecast macroeconomic announcement of Non-farm Payrolls, Consumer Price Index, GDP QoQ, Unemployment Rate, Retail Sales & Food Services Total MoM, Housing Starts Number MM, Purchase Manager Index Chicago, Import Price Index, Industrial Production, Consumer Confidence Index and Durable Goods Orders.

### 4.2 Research Method

#### 4.2.1 The Autoregressive (AR) Model

AR model indicates the current value of time series, and it depends on the values taken by the variable from previous periods and an error term (Brooks, 2008). The AR(p) model is described as follows:

\[ X_t = \phi_1 X_{t-1} + \phi_2 X_{t-2} + \ldots + \phi_p X_{t-p} + \epsilon_t \]

Where: 
- \( X_t \) = the data value at time
- \( \phi \) = the estimated autoregressive coefficient at lag p
- \( \epsilon_t \) = the error term or conditional residual at time
4.2.2 The Moving Average (MA) Model

As a time series model, MA model is simply combined from the white noise processes (Brooks, 2008). Therefore, it is determined by the current and past values in a white noise disturbance term. The MA equation is shown as follows:

\[ X_t = \varepsilon_t + \theta_1 \varepsilon_{t-1} + \ldots + \theta_q \varepsilon_{t-q} \]

Where:
- \( X_t \) = the data value at time
- \( \theta \) = the estimated moving average coefficient at lag q
- \( \varepsilon_t \) = the error term or conditional residual at time

4.2.3 The Auto Regressive Moving Average (ARMA) Model

Introduced by and Brook (2008), the ARMA model presents the current value of series from linearity with the sum of its own previous value, current and previous values of a residual term. The equation of ARMA (p,q) model is described as follows:

\[ X_t = \varphi_1 X_{t-1} + \varphi_2 X_{t-2} + \ldots + \varphi_p X_{t-p} + \varepsilon_t + \theta_1 \varepsilon_{t-1} + \ldots + \theta_q \varepsilon_{t-q} \]

Where:
- \( X_t \) = the data value at time
- \( \varphi \) = the estimated autoregressive coefficient at lag p
- \( \theta \) = the estimated moving average coefficient at lag q
- \( \varepsilon_t \) = the error term or conditional residual at time

4.2.4 The Autoregressive Conditional Heteroscedasticity (ARCH) model

The ARCH model introduced by Engle (1982) is for modeling volatility. It models the autocorrelation in volatility when previous value of squared error determines the error conditional variance. The equation of ARCH model is described as follows:
\[ \sigma_t^2 = \alpha_0 + \alpha_1 \varepsilon_{t-1}^2 + \alpha_2 \varepsilon_{t-2}^2 + \cdots + \alpha_q \varepsilon_{t-q}^2 \]

Where: \( \alpha_q \) = the ARCH coefficient of the conditional variance at lag q

\( \varepsilon_{t-q}^2 \) = the conditional variance of error at time t which depends on q lag square error

For the conditional variance is positive, it requires the parameter \( \sigma_0 > 0 \) and \( \varepsilon_{t-q}^2 \geq 0 \)

### 4.2.5 The Generalized ARCH (GARCH) Model

The ARCH model is modified by Bollerslev (1986) to generate GARCH model, which is accepted as a more advance model in modeling volatility clustering in time series. GARCH model is different from ARCH model as the variance of return. The GARCH(q,p) model is described as follows:

\[ \sigma_t^2 = \alpha_0 + \alpha_1 \varepsilon_{t-1}^2 + \cdots + \alpha_q \varepsilon_{t-q}^2 + \cdots + \beta_1 \sigma_{t-1}^2 + \cdots + \beta_p \sigma_{t-p}^2 \]

Where: \( \alpha_0 \) = the constant term

\( \alpha \) = the GARCH coefficients of the conditional variance on lag q

\( \beta \) = the GARCH coefficients of the conditional variance on lag p

\( \varepsilon \) = the error term

\( \sigma_t^2 \) = conditional variance of the return at time t

### 4.2.6. The Exponential GARCH (EGARCH) Model

EGARCH model is introduced by Nelson (1991) to address the asymmetry problem. The EGARCH model is expressed as follows:

\[ \ln(\sigma_t^2) = \alpha_0 + \sum_{j=1}^{q} \frac{|\varepsilon_{t-j}|^{\gamma} \varepsilon_{t-j}}{\sigma_{t-j}} + \sum_{i=1}^{p} \beta_i \ln \sigma_{t-i}^2 \]

Where:
\[ \alpha_0 \quad = \text{the constant term} \]

\[ \alpha, \beta, \gamma \quad = \text{the EGARCH coefficients of the conditional variance and residual} \]

\[ \sigma^2_t \quad = \text{the conditional variance of the return at time} \]

\[ \varepsilon_t \quad = \text{the conditional error at time} \]

### 4.3 The Statistical Data Treatments

This research organized all daily data in six and half years, in this case, the dependent variables are 2365 days’ NAV. For the top 10 largest Chinese equity mutual funds, the researcher studies how they are impacted by eleven selected independent variables, including Nonfarm Payrolls, CPL, GDP QoQ, Unemployment Rate, Retail Sales & Food Services, Total MoM, Housing Starts Number MM, PMI Chicago, Import Price Index, Industrial Production, CCI, and Durable Goods Orders.

Before we process the assumption of the relationship between independent variables and dependent variable, the researcher chooses several statistics tests to ensure the generated data match with the supposition of this regression model. There are some tests we conduct which are comprised in this section. They are Stationary test, ARMA test and GARCH-typed test.

#### 4.3.1 Data stationary testing

In case of avert spurious regression when conducting estimated equation and losing significant of test result, time series data are collected to investigate the object for this study, which is required as stationary data. When constant mean and variance go along with change of time, time series data is stationary.
This paper selects Augmented Dickey-Fuller (Dickey& Fuller 1979) to generate the unit root test, which is one of the popular ways among DFGLS test, PP test, KPSS test, ERS test and NP test. Augmented Dickey-Fuller is developed from Dickey-Fuller test. Only while the series is AR (1), Dickey-Fuller is valid; however, it is not modelled while the autocorrelation in the dependent variable of the regression is run. To “augment” the test is the solution that p lags of the dependent variable is applied for the test.

The null hypothesis of the Augmented Dickey-Fuller t-test is

\[ H_0: \beta_1 = 0 \]

versus the alternative hypothesis of

\[ H_0: \beta_1 < 0 \]

And the formula is

\[ \Delta Y_t = \beta_0 + \beta_1 Y_{t-1} + V_1 \]

Where

\( \beta_1 \) is the correlation of previous value of the variable. And \( \beta_1 = \square - 1 \)

\( V_1 \) is the stochastic error term.

Null hypothesis can be rejected when \( \beta_1 \) is significantly less than 0 at one-side significance level of 0.05.

There are several methods of Augmented Dickey-Fuller to correct failing rejecting null hypothesis, which are showed as follow:

Use first difference of the variable which is described as \( Y_t = X_t - X_{t-1} \)

Use Log difference of the variable which is described as \( Y_t = \log(X_t) - \log(X_{t-1}) \)
The researcher selects log difference but first difference or percentage change for these non-stationary according to theories of previous papers.

4.3.2 ARMA model estimation

After time series data stationary is completed, as a critical step to conduct GARCH model, ARMA model can be estimated. Autoregressive model abbreviated as AR (p) describes the relationship between current value and historical value, which has an equation as \( X_t = \sum a_k X_{t-k} + \varepsilon_t \), where \( \{\varepsilon_t\} \) is zero-mean white noise, \( \varepsilon_t \) is uncorrelated with \( X_{t-1} \), \( X_{t-2} \) ... Moving average model known as MA(q) portrays accumulated error of autoregressive section, its formula is shown as \( X_t = \sum b_k \varepsilon_{t-k} \), where \( b_0 = 1 \). ARMA model contains p units of autoregressive and q units of moving average, which is stated as \( X_t = \sum a_j X_{t-j} + \sum b_j \varepsilon_{t-j} + \varepsilon_t \),

where \( \{\varepsilon_t\} \) is zero-mean white noise, \( \varepsilon_t \) is uncorrelated with \( X_{t-1} \), \( X_{t-2} \) ...

ARMA model processes under the previous clarified basic principle in this study. The operation of ARMA model is divided into four stages,

Firstly, the researcher defines an appropriate model for time series intended to explore dynamic features of data. According to basic principle, ACF (the correlogram of autocorrelation function) is required by moving average (MA), and PACF (partial correlation function) presents for AR (autoregressive) model.

Secondly, there is a mixed model which merges AR and MA models to estimate and identify ARMA model. Model estimating parameters and least squares (maximum likelihood) simultaneously are specified in this stage.
Thirdly, to confirm the existence of a zero mean in residuals and their uncorrelattion, a diagnose test is desirable. Serial correlation problem and heteroscedasticity problem are conducted in diagnostic process. While serial correlation problem is finished off completely by LM test (Serial Correlation Lagrange Multiplier), the heteroscedasticity problem is tested. There is nothing causing serial correlation problem, since all value of $r$ is to be equivalent to zero. If the probability value is higher than 0.05, it denotes no serial correlation problem. For the sake of discarding serial correlation problems in estimate ARMA model, it is essential that continuing run the estimation process until the correlation problem is cleared.

In this condition that heteroscedasticity problem is against the assumption of constant error variance, the ARCH LM test is generated by the squares of errors from the previous model, and estimating error on the $q$ lagged value.

While the probability value of ARCH LM test is higher than 0.05, there is no heteroscedasticity problem contained in regression equation. And in case of heteroscedasticity problem, White's Heteroscedasticity standard error will be utilized into the variance model. After that, cutting process of ARMA model is conducted. However, if probability value is less than 0.05, the researcher rejects this variable. When there is any variable significant, estimation procedure and diagnostic process must be started all over again.

Finally, due to final ARMA model being applied into the process of ARCH/GARCH estimation, the best ARMA model will be sorted out from all significant regression equation. The BIC (Bayes Information Criterion) is known as SIC (Schwarz Information Criterion), the model which shows the lowest value of SIC is chosen as the best ARMA model according
to the estimated standard errors. The SIC equation is generated from the log-likelihood function value when tested in statistics program. The formula is presented as follows:

\[
SIC_t = \frac{-2l}{T} + \frac{(k \log T)}{T}
\]

\[
l = -\frac{T}{2} \left[ 1 + \log(2\pi) + \log \left( \frac{u'u}{T} \right) \right]
\]

Where:

- \( l \) = the log-likelihood
- \( k \) = the number of parameters
- \( T \) = the sample size
- \( u \) = the estimator of the regressions disturbances variance

4.3.3 The developing process of GARCH-typed models

Based on the mean equation ARMA model is constructed. GARCH model will be established for the volatility estimation. There are three GARCH-typed models employed in this study:

1. **ARCH (q) Model**
   \[
   \sigma_t^2 = \alpha_0 + \alpha_1 \varepsilon_{t-1}^2 + \alpha_2 \varepsilon_{t-2}^2 + \cdots + \alpha_q \varepsilon_{t-q}^2
   \]

2. **GARCH (p,q) Model**
   \[
   \sigma_t^2 = \alpha_0 + \alpha_1 \varepsilon_{t-1}^2 + \cdots + \alpha_q \varepsilon_{t-q}^2 + \beta_1 \sigma_{t-1}^2 + \cdots + \beta_p \sigma_{t-p}^2
   \]

3. **EGARCH (p,q) Model**
   \[
   \ln(\sigma_t^2) = \omega + \sum_{i=1}^{p} \beta_i \ln(\sigma_{t-i}^2) + \gamma \frac{u_{t-i}}{\sigma_{t-i}^2} + \sum_{j=1}^{q} \alpha_j \frac{u_{t-j}}{\sigma_{t-j}^2}
   \]

The maximum likelihood estimation technique is used to confirm the most accurate parameters from GARCH-typed models, thus, these models are not a linear form. Brooks
(2008) explained the steps for estimating GARCH model as:

1. To decide the appropriate equation for mean and variance,
Example as: AR (3) MA (3) – EGARCH (2,2) model.

2. Using the log-likelihood function (LLF) to maximize and under an assumption for disturbances. The coefficient value that maximizes L is:

\[ L = -\frac{T}{2} \log(2\pi) - \frac{1}{2} \sum_{t=1}^{T} \log(\sigma_t^2) - \frac{1}{2} \sum_{t=1}^{T} (y_t - \mu - \phi y_{t-1})^2 / \sigma_t^2 \]

3. Later on, computer program will maximize the function, generate the appropriate value of parameter and construct the standard errors.

4.3.4 Summaries of Statistical Data Treatments

Figure 4-3-4
Mutual fund NAV of data collection

ADF unit root test

Stationary or not?

Yes

Estimate the best ARMA model

Find the volatility equation form GARCH-type model

Select the best GARCH-type model from using the minimum of SIC

Apply the best GARCH-type model to estimate the conditional variance of the data and test the unexpected value of news announcements

Analysis the outcomes

Transfer to stationary data by log difference

CHAPTER V
PRESENTATION OF DATA AND CRITICAL DISCUSSION OF RESULTS

This chapter describes all statistical data which contain both independent and dependent variables. Secondary data is employed in this study including NAV of top 10 Chinese equity mutual fund and US macroeconomic announcements during 2010 to 2016. This chapter is organized into three parts. The first part presents basic characteristics of each data set (mean, maximum, minimum, etc.). The second part is about statistical data treatment, in case of invalid result, it should be run before empirical test. Based on the empirical results from running model analysis in computer program, each hypothesis is discussed in the last part.

5.1 Descriptive Statistics

There are ten top equity mutual funds from Chinese funds market collected as dependent variables and 11 macroeconomic announcements from the US. It is necessary to show that all those macroeconomic announcements do not just highlight specific numbers, but also contain surprise variables. So that, statistical explanation like mean, median, maximum, minimum value, standard deviation, skewness, kurtosis, and observation discussed as follows are all about the surprise of announcements.
Table 5.1 Descriptive Statistics summary of US macroeconomic announcement surprises

<table>
<thead>
<tr>
<th></th>
<th>Nonfarm Payrolls</th>
<th>CPI</th>
<th>GDP</th>
<th>Unemployment Rate</th>
<th>Retail Sales</th>
<th>Housing Starts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>1.182495</td>
<td>-0.000774</td>
<td>-0.001428</td>
<td>-0.003786</td>
<td>0.001552</td>
<td>0.001773</td>
</tr>
<tr>
<td>Median</td>
<td>0.000000</td>
<td>0.000000</td>
<td>0.000000</td>
<td>0.000000</td>
<td>0.000000</td>
<td>0.000000</td>
</tr>
<tr>
<td>Maximum</td>
<td>197.0000</td>
<td>0.474000</td>
<td>1.100000</td>
<td>0.300000</td>
<td>1.100000</td>
<td>0.173000</td>
</tr>
<tr>
<td>Minimum</td>
<td>-161.0000</td>
<td>-0.419000</td>
<td>-1.200000</td>
<td>-0.400000</td>
<td>-1.100000</td>
<td>-0.076000</td>
</tr>
<tr>
<td>Std. Dev</td>
<td>17.15234</td>
<td>0.039290</td>
<td>0.070520</td>
<td>0.039302</td>
<td>0.099833</td>
<td>0.013230</td>
</tr>
<tr>
<td>Skewness</td>
<td>3.585296</td>
<td>-0.472598</td>
<td>-1.159871</td>
<td>-5.430981</td>
<td>-0.371986</td>
<td>6.775813</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>62.62586</td>
<td>58.20353</td>
<td>183.4833</td>
<td>57.83965</td>
<td>57.64536</td>
<td>69.57592</td>
</tr>
<tr>
<td>Observations</td>
<td>1161</td>
<td>1161</td>
<td>1161</td>
<td>1161</td>
<td>1161</td>
<td>1161</td>
</tr>
</tbody>
</table>

Table 5.2 Descriptive Statistics summary of US macroeconomic announcement surprises

<table>
<thead>
<tr>
<th></th>
<th>PMI Chicago</th>
<th>Import Price Index</th>
<th>Industrial Production</th>
<th>CCI</th>
<th>Durable Goods Orders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.021664</td>
<td>-0.000248</td>
<td>-0.004345</td>
<td>0.036747</td>
<td>-0.003724</td>
</tr>
<tr>
<td>Median</td>
<td>0.000000</td>
<td>0.000000</td>
<td>0.000000</td>
<td>0.000000</td>
<td>0.000000</td>
</tr>
<tr>
<td>Maximum</td>
<td>10.60000</td>
<td>0.800000</td>
<td>0.700000</td>
<td>11.200000</td>
<td>15.100000</td>
</tr>
<tr>
<td>Minimum</td>
<td>-11.20000</td>
<td>-0.900000</td>
<td>-1.200000</td>
<td>-9.000000</td>
<td>-8.200000</td>
</tr>
<tr>
<td>Std. Dev</td>
<td>0.0905543</td>
<td>0.090341</td>
<td>0.083739</td>
<td>1.086742</td>
<td>0.604105</td>
</tr>
<tr>
<td>Skewness</td>
<td>0.766646</td>
<td>-0.622072</td>
<td>-5.778026</td>
<td>1.709061</td>
<td>6.752442</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>69.71131</td>
<td>53.12737</td>
<td>84.38081</td>
<td>46.23870</td>
<td>280.9812</td>
</tr>
</tbody>
</table>
### Table 5.3 Descriptive Statistics summary NAVs of equity mutual fund

<table>
<thead>
<tr>
<th></th>
<th>MF1</th>
<th>MF2</th>
<th>MF3</th>
<th>MF4</th>
<th>MF5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>0.850806</td>
<td>0.857053</td>
<td>0.785267</td>
<td>0.873294</td>
<td>1.036796</td>
</tr>
<tr>
<td><strong>Median</strong></td>
<td>0.783000</td>
<td>0.819000</td>
<td>0.756000</td>
<td>0.818000</td>
<td>0.966000</td>
</tr>
<tr>
<td><strong>Maximum</strong></td>
<td>1.584000</td>
<td>1.1510000</td>
<td>1.580000</td>
<td>1.696000</td>
<td>2.4440000</td>
</tr>
<tr>
<td><strong>Minimum</strong></td>
<td>0.622000</td>
<td>0.615000</td>
<td>0.620000</td>
<td>0.657000</td>
<td>0.627000</td>
</tr>
<tr>
<td><strong>Std. Dev</strong></td>
<td>0.184468</td>
<td>0.166679</td>
<td>0.132457</td>
<td>0.188337</td>
<td>0.298163</td>
</tr>
<tr>
<td><strong>Skewness</strong></td>
<td>1.376319</td>
<td>0.989824</td>
<td>2.846751</td>
<td>1.690533</td>
<td>1.694834</td>
</tr>
<tr>
<td><strong>Kurtosis</strong></td>
<td>4.894593</td>
<td>4.120848</td>
<td>13.91864</td>
<td>6.240792</td>
<td>6.560319</td>
</tr>
<tr>
<td><strong>Observations</strong></td>
<td>1161</td>
<td>1161</td>
<td>1161</td>
<td>1161</td>
<td>1161</td>
</tr>
</tbody>
</table>

### Table 5.4 Descriptive Statistics summary NAVs of equity mutual fund

<table>
<thead>
<tr>
<th></th>
<th>MF6</th>
<th>MF7</th>
<th>MF8</th>
<th>MF9</th>
<th>MF10</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>1.310403</td>
<td>0.865092</td>
<td>3.112684</td>
<td>0.885984</td>
<td>1.959393</td>
</tr>
<tr>
<td><strong>Median</strong></td>
<td>1.252000</td>
<td>0.791000</td>
<td>2.824000</td>
<td>0.847000</td>
<td>1.890000</td>
</tr>
<tr>
<td><strong>Maximum</strong></td>
<td>2.991000</td>
<td>1.666000</td>
<td>7.244000</td>
<td>1.655000</td>
<td>3.410000</td>
</tr>
<tr>
<td><strong>Minimum</strong></td>
<td>0.852000</td>
<td>0.638000</td>
<td>2.148000</td>
<td>0.635000</td>
<td>1.406000</td>
</tr>
<tr>
<td><strong>Std. Dev</strong></td>
<td>0.341641</td>
<td>0.200629</td>
<td>0.855018</td>
<td>0.181287</td>
<td>0.374481</td>
</tr>
<tr>
<td><strong>Skewness</strong></td>
<td>1.611593</td>
<td>1.551655</td>
<td>1.897461</td>
<td>1.200477</td>
<td>1.221685</td>
</tr>
<tr>
<td><strong>Kurtosis</strong></td>
<td>7.154562</td>
<td>5.245713</td>
<td>7.130381</td>
<td>4.749509</td>
<td>4.702438</td>
</tr>
<tr>
<td><strong>Observations</strong></td>
<td>1161</td>
<td>1161</td>
<td>1161</td>
<td>1161</td>
<td>1161</td>
</tr>
</tbody>
</table>
In table 5.1, 5.2, 5.3 and 5.4, the first columns respectively are the name of the macroeconomic variables and NAVs of Chinese equity mutual fund which these macroeconomic variables are the independent factors and NAVs of Chinese equity mutual fund is the dependent factor. The explanation of each index is as follows. Mean value is the average of numbers. The value which in the middle between the maximum value and the minimum value is median. Maximum is the highest value among many values, on the contrary, minimum is the lowest value among many values. As a measure of the dispersion of a set of data from its mean, standard deviation is calculated as the square root of variance by determining the variation between each data point relative to the mean. If the data points are further from the mean, it means that there is higher deviation within the data set.

Skewness is a measure of symmetry or lack of symmetry. If it looks the same to the left and right of the center point, the data set is a normal distribution; however, when it is lacks symmetry, it will be called “Skewness to the right or to the left”. Kurtosis is a measure about whether the data are heavy-tailed or light-tailed relative to a normal distribution. The data sets tend to have heavy tails or outliers while there is high kurtosis, data with low kurtosis tend to have light tails or lack of outliers.

5.2 Statistical Treatment of Data

In order to obtain valid and the best empirical test result, the researcher will portray the analysis of data by running several statistical tests about those sample data to ensure they are qualified for the model and analysis method applied in this paper. Unit root test analysis, ARMA model, Unexpected factor process, and GARCH type models will be employed in this part. As mentioned in chapter four formerly, unit root test is the analytic instrument to modify non-stationary data for operating the following ARMA model and GARCH types model;
ARMA model specifies models or predict values in future; Unexpected factor process are conducted by difference between actual released data and expected data; GARCH types model tests the fluctuation. The results of those tests for verification will be showed in following part:

5.2.1 Stationary Test

Based on the explanation in chapter 4, stationary data would be tested with Unit root by Augmented Dickey-Fuller (Dickey & Fuller, 1979). T-statistic of each data set computed by ADF would be compared with critical value for hypothesis as listed:

H₀: There is unit root in the data set.
H₁: There is no unit root in the data set.

When t-statistic is less than the critical value, the data will be stationary or has the unit root, H₀ would be rejected. However, if t-statistic is greater than the critical value, the data will be non-stationary or has not the unit root, H₀ would not be rejected. Results of test are shown as below:

Table 5.5 The t-test statistic results of macroeconomic variables and NAVs of equity mutual fund

<table>
<thead>
<tr>
<th></th>
<th>t-statistic</th>
<th>Critical value 5% level</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF1</td>
<td>-1.873934</td>
<td>-2.863139</td>
<td>Non-stationary</td>
</tr>
<tr>
<td>MF2</td>
<td>-0.300707</td>
<td>-1.941021</td>
<td>Non-stationary</td>
</tr>
<tr>
<td>MF3</td>
<td>-3.381548</td>
<td>-2.863139</td>
<td>Stationary</td>
</tr>
<tr>
<td>MF4</td>
<td>-2.101803</td>
<td>-2.863139</td>
<td>Non-stationary</td>
</tr>
<tr>
<td>MF5</td>
<td>-1.962226</td>
<td>-2.863141</td>
<td>Non-stationary</td>
</tr>
<tr>
<td>MF6</td>
<td>-2.464742</td>
<td>-2.863141</td>
<td>Non-stationary</td>
</tr>
</tbody>
</table>
As Table 5.5 indicates, the most data contain the unit root or doesn’t have the unit root, which is the non-stationary data, because the t-statistic values are greater than the critical value. The MF3 is called ChinaAMC CSI 300 Feeder ETF, for which the t-statistic value is less than the critical value meaning that doesn’t contain the unit root or has the unit root. By using log difference, the most of data that contain the unit root or doesn’t have the unit root, which is the non-stationary data can be converted to be the stationary data.

Table 5.6 The t-test statistic results of macroeconomic variables return and NAVs of equity mutual fund

<table>
<thead>
<tr>
<th>MF</th>
<th>t-statistic</th>
<th>Critical value 5% level</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF1</td>
<td>-38.62532</td>
<td>-1.941020</td>
<td>Stationary</td>
</tr>
<tr>
<td>MF2</td>
<td>-38.37876</td>
<td>-1.941020</td>
<td>Stationary</td>
</tr>
<tr>
<td>MF3</td>
<td>-29.20684</td>
<td>-1.941021</td>
<td>Stationary</td>
</tr>
<tr>
<td>MF4</td>
<td>-38.86648</td>
<td>-1.941020</td>
<td>Stationary</td>
</tr>
<tr>
<td>MF5</td>
<td>-36.58712</td>
<td>-1.941020</td>
<td>Stationary</td>
</tr>
<tr>
<td>MF6</td>
<td>-36.09149</td>
<td>-1.941020</td>
<td>Stationary</td>
</tr>
<tr>
<td>MF7</td>
<td>-39.50098</td>
<td>-1.941020</td>
<td>Stationary</td>
</tr>
<tr>
<td>MF8</td>
<td>-35.41434</td>
<td>-1.941020</td>
<td>Stationary</td>
</tr>
</tbody>
</table>
All of the data in Table 5.6 are converted to be the stationary data by using log difference. And these data can be evaluated in following step. The macroeconomic variables is including Non-farm Payrolls, CPI, GDP QoQ, Unemployment Rate, Retail Sales & Food Services, Total MoM, Housing Starts Number MM, PMI Chicago, Import Price Index, Industrial Production, CCI and Durable Goods Orders. These factors will be applied to choose the best ARMA model. The NAVs of Chinese mutual fund can be operated in ARMA model and GARCH types model.

5.2.2 The methodology of ARMA model

Ensure all data are stationary data, the progress of ARMA model is conducted. There are two targets of ARMA model which are to find the best ARMA model from depend variables and independent variables. In the finding, best ARMA model process, AR and MA are estimated from partial correlation function (PACF) and auto correlation function (ACF). After completed estimating equation with constant, checking the serial correlation LM test would be conducted. If the prob. Chi-square value in serial correlation LM test is less than 5% level (0.05), which means serial correlation LM test has problem and ARMA model need to be run PACF and ACF one more time. As a result, the prob. Chi-square value should greater than 5% level (0.05) to pass serial correlation LM test.

Heteroskedasticity test will be checked by ARCH test after passed serial correlation LM test. If the prob. Chi-square value in heteroskedasticity test is less than 5% level (0.05),
which means there is problem. This problem can be solved by white heteroskedasticity consistent standard errors. Cutting off the value which is more than 5% level (0.05), while it is inspecting AR, MA, and constant value. In addition, best ARMA model will be selected by the lowest Schwarz criterion value (SIC).

5.2.3 The methodology of GARCH types model

GARCH types model is utilized to find the formula of fluctuation. GARCH types model consists of ARMA (1,2), ARMA (1,8), ARMA (2,2), ARMA (7,1), ARMA (7,7), GARCH (1,1), EGARCH (3,4), GARCH (4,1), EGARCH (4,4). At the same time, the prob. Value in GARCH types model should have the value less than 5% level (0.05). If there are several GARCH types model in one dependent variable, it is necessary to compare the Schwarz criterion value (SIC). The best GARCH types model is with lowest Schwarz criterion value (SIC).

Table 5.7 The ARMA model and GARCH types model of NAVs of equity mutual fund

<table>
<thead>
<tr>
<th>Variables</th>
<th>ARMA model</th>
<th>GARCH types model</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF1</td>
<td>ARMA (2,2)</td>
<td>GARCH (1,1)</td>
</tr>
<tr>
<td>MF2</td>
<td>ARMA (2,2)</td>
<td>GARCH (4,1)</td>
</tr>
<tr>
<td>MF3</td>
<td>ARMA (7,7)</td>
<td>EGARCH (4,4)</td>
</tr>
<tr>
<td>MF4</td>
<td>ARMA (1,2)</td>
<td>EGARCH (3,4)</td>
</tr>
<tr>
<td>MF5</td>
<td>MA (1)</td>
<td>GARCH (1,1)</td>
</tr>
<tr>
<td>MF6</td>
<td>MA (1)</td>
<td>EGARCH (4,4)</td>
</tr>
<tr>
<td>MF7</td>
<td>ARMA (2,2)</td>
<td>GARCH (4,4)</td>
</tr>
</tbody>
</table>
5.3 Result of Hypotheses Testing

The researcher studied one hundred and ten hypotheses about the significantly interactive relationship between the dependent and independent variables. The dependent variables are top 10 NAVs of Chinese equity mutual fund and independent variables are surprise value of eleven U.S. macroeconomic variables; includes Nonfarm Payrolls, CPI, GDP QoQ, Unemployment Rate, Retail Sales & Food Services Total MoM, Housing Starts Number MM, PMI Chicago, Import Price Index, Industrial Production, CCI and Durable Goods Orders.

Hypothesis 1:

H10: There is no significant relationship between the announcements of “Non-farm Payrolls” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

H1a: There is a significant relationship between the announcements of “Non-farm Payrolls” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

Table 5.8 The estimation of the significant relationship between the Nonfarm Payrolls and ChinaAMC CSI 300 Feeder ETF NAV volatility

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonfarm payrolls</td>
<td>-7.69E-07</td>
<td>-2.386550</td>
<td>0.0170</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 1. Because p-value is 0.0170, which
is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 2:

H2₀: There is no significant relationship between the announcements of “CPI” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

H2ₐ: There is a significant relationship between the announcements of “CPI” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

Table 5.9 The estimation of the significant relationship between the CPI and ChinaAMC CSI 300 Feeder ETF NAV volatility

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPI</td>
<td>0.002293</td>
<td>0.539898</td>
<td>0.5893</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 2. Because p-value is 0.5893, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 3:

H3₀: There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

H3ₐ: There is a significant relationship between the announcements of “GDP QoQ” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

Table 5.10 The estimation of the significant relationship between the GDP QoQ and ChinaAMC CSI 300 Feeder ETF NAV volatility

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
</table>
This table shows statistical result of Hypothesis 3. Because p-value is 0.0474, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 4:

H4₀: There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

H₄ₐ: There is a significant relationship between the announcements of “Unemployment Rate” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

**Table 5.11 The estimation of the significant relationship between the Unemployment Rate and ChinaAMC CSI 300 Feeder ETF NAV volatility**

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment Rate</td>
<td>0.000615</td>
<td>5.218946</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 4. Because p-value is 0.000, which is less than 0.05, null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 5:

H₅₀: There is no significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

H₅ₐ: There is a significant correlation between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.
Table 5.12 The estimation of the significant relationship between the Retail Sales & Food Services, Total MoM and ChinaAMC CSI 300 Feeder ETF NAV volatility

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail Sales &amp; Food Services, Total MoM</td>
<td>-0.000179</td>
<td>-1.273161</td>
<td>0.2030</td>
</tr>
</tbody>
</table>

This table showed statistical result of Hypothesis 5. Because p-value is 0.2030, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 6:

H₆₀: There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

H₆₁: There is a significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

Table 5.13 The estimation of the significant relationship between the Housing Starts Number MM and ChinaAMC CSI 300 Feeder ETF NAV volatility

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing Starts Number MM</td>
<td>-0.002198</td>
<td>-6.681947</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 6. Because p-value is 0.0000, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 7:
H7₀: There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

H7ₐ: There is a significant relationship between the announcements of “PMI Chicago” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

Table 5.14 The estimation of the significant relationship between the PMI Chicago and ChinaAMC CSI 300 Feeder ETF NAV volatility

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMI Chicago</td>
<td>-1.67E-05</td>
<td>-1.360292</td>
<td>0.1737</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 7. Because p-value is 0.1737, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 8:

H8₀: There is no significant relationship between the announcements of “Import Price Index” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

H8ₐ: There is a significant relationship between the announcements of “Import Price Index” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

Table 5.15 The estimation of the significant relationship between the Import Price Index and ChinaAMC CSI 300 Feeder ETF NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Import Price Index</td>
<td>-0.000132</td>
<td>-0.716943</td>
<td>0.4734</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 8. Because p-value is 0.4734, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.
Hypothesis 9:

H9₀: There is no significant relationship between the announcements of “Industrial Production” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

H9ₐ: There is a significant relationship between the announcements of “Industrial Production” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

Table 5.16 The estimation of the significant relationship between the Industrial Production and ChinaAMC CSI 300 Feeder ETF NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial Production</td>
<td>-1.81E-05</td>
<td>-0.204614</td>
<td>0.8379</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 9. Because p-value is 0.8379, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 10:

H10₀: There is no significant relationship between the announcements of “Consumer Confidence Index” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

H10ₐ: There is a significant relationship between the announcements of “CCI” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

Table 5.17 The estimation of the significant relationship between the CCI and ChinaAMC CSI 300 Feeder ETF NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer Confidence</td>
<td>-1.79E-05</td>
<td>-1.822534</td>
<td>0.0684</td>
</tr>
</tbody>
</table>
This table shows statistical result of Hypothesis 10. Because p-value is 0.0684, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 11:

H11\(_0\): There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

H11\(_a\): There is a significant relationship between the announcements of “Durable Goods Orders” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.

Table 5.18 The estimation of the significant relationship between the Durable Goods Orders and ChinaAMC CSI 300 Feeder ETF NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durable Goods Orders</td>
<td>5.26E-07</td>
<td>0.022053</td>
<td>0.9824</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 11. Because p-value is 0.9824, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 12:

H12\(_0\): There is no significant relationship between the announcements of “Non-farm Payroll” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

H12\(_a\): There is a significant relationship between the announcements of “Non-farm Payroll” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.
Table 5.19 The estimation of the significant relationship between the Nonfarm Payrolls and E Fund SZSE 100 Feeder ETF NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonfarm Payrolls</td>
<td>-6.52E-07</td>
<td>-2.064220</td>
<td>0.0390</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 12. Because p-value is 0.0390, which is less than 0.05, the null hypothesis would be rejected with 5% confidence level in this case.

Hypothesis 13:

H13₀: There is no significant relationship between the announcements of “CPI” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

H13ₐ: There is a significant relationship between the announcements of “CPI” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

Table 5.20 The estimation of the significant relationship between the CPI and E Fund SZSE 100 Feeder ETF NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPI</td>
<td>0.000457</td>
<td>1.259987</td>
<td>0.2077</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 13. Because p-value is 0.2077, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 14:

H14₀: There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.
H14\textsubscript{a}: There is a significant relationship between the announcements of “GDP QoQ” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

Table 5.21 The estimation of the significant relationship between the GDP QoQ and E Fund SZSE 100 Feeder ETF NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP QoQ</td>
<td>0.000152</td>
<td>2.351553</td>
<td>0.0187</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 14. Because p-value is 0.0187, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 15:

H15\textsubscript{0}: There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

H15\textsubscript{a}: There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

Table 5.22 The estimation of the significant relationship between the Unemployment Rate and E Fund SZSE 100 Feeder ETF NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment Rate</td>
<td>0.000647</td>
<td>4.314227</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 15. Because p-value is 0.000, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 16:

H16\textsubscript{0}: There is no significant relationship between the announcements of “Retail
Sales & Food Services, Total MoM” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

H16*: There is a significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

**Table 5.23 The estimation of the significant relationship between the Retail Sales & Food Services, Total MoM and E Fund SZSE 100 Feeder ETF NAV volatility**

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail Sales &amp; Food Services, Total MoM</td>
<td>-0.00014</td>
<td>-0.991930</td>
<td>0.3212</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 16. Because p-value is 0.3212, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 17:

H170: There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

H17a: There is a significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

**Table 5.24 The estimation of the significant relationship between the Housing Starts Number MM and E Fund SZSE 100 Feeder ETF NAV volatility**

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing Starts Number MM</td>
<td>-0.001383</td>
<td>-2.034516</td>
<td>0.0419</td>
</tr>
</tbody>
</table>
This table shows statistical result of Hypothesis 17. Because p-value is 0.0419, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 18:

H18₀: There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

H18ₐ: There is a significant relationship between the announcements of “PMI Chicago” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

5.25 The estimation of the significant relationship between the PMI Chicago and E Fund SZSE 100 Feeder ETF NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMI Chicago</td>
<td>-1.42E-05</td>
<td>-1.425564</td>
<td>0.1540</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 18. Because p-value is 0.1540, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 19:

H19₀: There is no significant relationship between the announcements of “Import Price Index” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

H19ₐ: There is a significant relationship between the announcements of “Import Price Index” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

Table 5.26 The estimation of the significant relationship between the Import Price Index and E Fund SZSE 100 Feeder ETF NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
</table>
This table shows statistical result of Hypothesis 19. Because p-value is 0.2970, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case. Table

Hypothesis 20:

\( H_{20_0} \): There is no significant relationship between the announcements of “Industrial Production” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

\( H_{20_a} \): There is a significant relationship between the announcements of “Industrial Production” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

Table 5.27 The estimation of the significant relationship between the Industrial Production and E Fund SZSE 100 Feeder ETF NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial Production</td>
<td>-1.08E-05</td>
<td>-0.105560</td>
<td>0.9159</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 20. Because p-value is 0.9159, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 21:

\( H_{21_0} \): There is no significant relationship between the announcements of “CCI” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

\( H_{21_a} \): There is a significant relationship between the announcements of “CCI” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.
Table 5.28 The estimation of the significant relationship between the CCI and E Fund SZSE 100 Feeder ETF NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCI</td>
<td>-1.91E-05</td>
<td>-2.010943</td>
<td>0.0419</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 21. Because p-value is 0.0419, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 22:

$H_{22_0}$: There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

$H_{22_a}$: There is a significant relationship between the announcements of “Durable Goods Orders” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.

Table 5.29 The estimation of the significant relationship between the Durable Goods Orders and E Fund SZSE 100 Feeder ETF NAV volatility

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durable Goods Orders</td>
<td>1.03E-05</td>
<td>0.416286</td>
<td>0.6772</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 22. Because p-value is 0.6772, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 23:

$H_{23_0}$: There is no significant relationship between the announcements of “Nonfarm Payroll” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.
H23a: There is a significant relationship between the announcements of “Nonfarm Payroll” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

Table 5.30 The estimation of the significant relationship between the Nonfarm Payrolls and BOCOM Blue Chip Mixed NAV volatility

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonfarm Payroll</td>
<td>-0.000325</td>
<td>-0.395964</td>
<td>0.6921</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 23. Because p-value is 0.6921, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 24:

H240: There is no significant relationship between the announcements of “CPI” in the U.S. and BOCOM Blue Chip M NAV volatility.

H24a: There is a significant relationship between the announcements of “CPI” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

Table 5.31 The estimation of the significant relationship between the CPI and BOCOM Blue Chip Mixed NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPI</td>
<td>-1.080536</td>
<td>-2.605442</td>
<td>0.0092</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 24. Because p-value is 0.0092, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 25:
H250: There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

H25a: There is a significant relationship between the announcements of “GDP QoQ” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

Table 5.32 The estimation of the significant relationship between the GDP QoQ and BOCOM Blue Chip Mixed NAV volatility

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP QoQ</td>
<td>0.613216</td>
<td>3.636273</td>
<td>0.0003</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 25. Because p-value is 0.0003, which is less than 0.05, the null hypothesis would be rejected with 5% confidence level in this case.

Hypothesis 26:

H260: There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

H26a: There is a significant relationship between the announcements of “Unemployment Rate” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

Table 5.33 The estimation of the significant relationship between the Unemployment Rate and BOCOM Blue Chip Mixed NAV volatility

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment Rate</td>
<td>0.196299</td>
<td>0.956603</td>
<td>0.3388</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 26. Because p-value is 0.3388, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.
Hypothesis 27:

H27：<br>There is no significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

H27a: There is a significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

Table 5.34 The estimation of the significant relationship between the Retail Sales & Food Services, Total MoM and BOCOM Blue Chip Mixed NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail Sales &amp; Food Services, Total MoM</td>
<td>0.496498</td>
<td>3.802435</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 27. Because p-value is 0.0001, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 28:

H28：<br>There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

H28a: There is a significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

Table 5.35 The estimation of the significant relationship between the Housing Starts Number MM and BOCOM Blue Chip Mixed NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
</table>
This table shows statistical result of Hypothesis 28. Because p-value is 0.1057, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 29:

H$_{290}$: There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

H$_{29a}$: There is a significant relationship between the announcements of “PMI Chicago” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

Table 5.36 The estimation of the significant relationship between the PMI Chicago and BOCOM Blue Chip Mixed NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMI Chicago</td>
<td>-0.024702</td>
<td>-2.221954</td>
<td>0.0263</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 29. Because p-value is 0.0263, which is less than 0.05, the null hypothesis would be rejected with 5% confidence level in this case.

Hypothesis 30:

H$_{300}$: There is no significant relationship between the announcements of “Import Price Index” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

H$_{30a}$: There is a significant relationship between the announcements of “Import Price Index” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.
Table 5.37 The estimation of the significant relationship between the Import Price Index and BOCOM Blue Chip Mixed NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Import Price Index</td>
<td>-0.257389</td>
<td>-1.672521</td>
<td>0.0944</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 30. Because p-value is 0.0944, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 31:

H31₀: There is no significant relationship between the announcements of “Industrial Production” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

H31₁: There is a significant relationship between the announcements of “Industrial Production” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

Table 5.38 The estimation of the significant relationship between the Industrial Production and BOCOM Blue Chip Mixed NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial Production</td>
<td>-0.176543</td>
<td>-1.714293</td>
<td>0.0865</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 31. Because p-value is 0.0865, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 32:

H32₀: There is no significant relationship between the announcements of “CCI” in the
U.S. and BOCOM Blue Chip Mixed NAV volatility.

H32a: There is a significant relationship between the announcements of “CCI” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

**Table 5.39 The estimation of the significant relationship between the CCI and BOCOM Blue Chip Mixed NAV volatility.**

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCI</td>
<td>-0.014581</td>
<td>-1.201592</td>
<td>0.2295</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 32. Because p-value is 0.2295, which is greater than 0.05, null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 33:

H330: There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

H33a: There is a significant relationship between the announcements of “Durable Goods Orders” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.

**Table 5.40 The estimation of the significant relationship between the Durable Goods Orders and BOCOM Blue Chip Mixed NAV volatility.**

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durable Goods Orders</td>
<td>0.004508</td>
<td>0.220645</td>
<td>0.8254</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 33. Because p-value is 0.8254, which is greater than 0.05, the null hypothesis fails be rejected with 5% confidence level in this case.
Hypothesis 34:

H₃₄₀: There is no significant relationship between the announcements of “Nonfarm Payroll” in the U.S. and China Universal SCI Index Fund NAV volatility.

H₃₄ₐ: There is a significant relationship between the announcements of “Nonfarm Payroll” in the U.S. and China Universal SCI Index Fund NAV volatility.

Table 5.41 The estimation of the significant relationship between the Nonfarm Payrolls and China Universal SCI Index Fund NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonfarm Payroll</td>
<td>-0.000879</td>
<td>-2.576503</td>
<td>0.0100</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 34. Because p-value is 0.0100, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 35:

H₃₅₀: There is no significant relationship between the announcements of “CPI” in the U.S. and China Universal SCI Index Fund NAV volatility.

H₃₅ₐ: There is a significant relationship between the announcements of “CPI” in the U.S. and China Universal SCI Index Fund NAV volatility.

Table 5.42 The estimation of the significant relationship between the CPI and China Universal SCI Index Fund NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPI</td>
<td>0.011791</td>
<td>0.076972</td>
<td>0.9386</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 35. Because p-value is 0.9386, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this
Hypothesis 36:

H36\(_0\): There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and China Universal SCI Index Fund NAV volatility.

H36\(_a\): There is a significant relationship between the announcements of “GDP QoQ” in the U.S. and China Universal SCI Index Fund NAV volatility.

Table 5.43 The estimation of the significant relationship between the GDP QoQ and China Universal SCI Index Fund NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP QoQ</td>
<td>-0.022566</td>
<td>-0.259536</td>
<td>0.7952</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypotheses 36. Because p-value is 0.7952, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 37:

H37\(_0\): There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and China Universal SCI Index Fund NAV volatility.

H37\(_a\): There is a significant relationship between the announcements of “Unemployment Rate” in the U.S. and China Universal SCI Index Fund NAV volatility.

Table 5.44 The estimation of the significant relationship between the Unemployment Rate and China Universal SCI Index Fund NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
</table>
Unemployment Rate | -0.969666 | -4.869133 | 0.0000

This table shows statistical result of Hypothesis 37. Because p-value is 0.0000, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 38:
H38₀: There is no significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and China Universal SCI Index Fund NAV volatility.

H38₁: There is a significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and China Universal SCI Index Fund NAV volatility.

Table 5.45 The estimation of the significant relationship between the Retail Sales & Food Services, Total MoM and China Universal SCI Index Fund NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail Sales &amp; Food Services, Total MoM</td>
<td>-0.196149</td>
<td>-2.4789133</td>
<td>0.0132</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 38. Because p-value is 0.0132, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 39:
H39₀: There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and China Universal SCI Index Fund NAV volatility.
H39a: There is a significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and China Universal SCI Index Fund NAV volatility.

Table 5.46 The estimation of the significant relationship between the Housing Starts Number MM and China Universal SCI Index Fund NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing Starts Number MM</td>
<td>-2.635902</td>
<td>-4.417006</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 39. Because p-value is 0.0000, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 40:

H400: There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and China Universal SCI Index Fund NAV volatility.

H40a: There is a significant relationship between the announcements of “PMI Chicago” in the U.S. and China Universal SCI Index Fund NAV volatility.

Table 5.47 The estimation of the significant relationship between the PMI Chicago and China Universal SCI Index Fund NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMI Chicago</td>
<td>-0.018987</td>
<td>-2.347694</td>
<td>0.0189</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 40. Because p-value is 0.0189, which is less than 0.05, the null hypothesis would be rejected with 5% confidence level in this case.

Hypothesis 41:
H41₀: There is no significant relationship between the announcements of “Import Price Index” in the U.S. and China Universal SCI Index Fund NAV volatility.

H41₁: There is a significant relationship between the announcements of “Import Price Index” in the U.S. and China Universal SCI Index Fund NAV volatility.

Table 5.48 The estimation of the significant relationship between the Import Price Index and China Universal SCI Index Fund NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Import Price Index</td>
<td>0.265116</td>
<td>2.862456</td>
<td>0.0042</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 41. Because p-value is 0.0042, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 42:

H42₀: There is no significant relationship between the announcements of “Industrial Production” in the U.S. and China Universal SCI Index Fund NAV volatility.

H42₁: There is a significant relationship between the announcements of “Industrial Production” in the U.S. and China Universal SCI Index Fund NAV volatility.

Table 5.49 The estimation of the significant relationship between the Industrial Production and China Universal SCI Index Fund NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial Production</td>
<td>0.166594</td>
<td>1.796620</td>
<td>0.0742</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 42. Because p-value is 0.0742, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.
Hypothesis 43:

H₄₃₀: There is no significant relationship between the announcements of “CCI” in the U.S. and China Universal SCI Index Fund NAV volatility.

H₄₃ₐ: There is a significant relationship between the announcements of “CCI” in the U.S. and China Universal SCI Index Fund NAV volatility.

Table 5.50 The estimation of the significant relationship between the CCI and China Universal SCI Index Fund NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCI</td>
<td>0.003795</td>
<td>0.495449</td>
<td>0.6203</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 43. Because p-value is 0.6203, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 44:

H₄₄₀: There is no significant relationship between the announcements of “Durable Goods Order” in the U.S. and China Universal SCI Index Fund NAV volatility.

H₄₄ₐ: There is a significant relationship between the announcements of “Durable Goods Order” in the U.S. and China Universal SCI Index Fund NAV volatility.

Table 5.51 The estimation of the significant relationship between the Durable Goods Order and China Universal SCI Index Fund NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
</table>
This table shows statistical result of Hypothesis 44. Because p-value is 0.3775, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 45:

H_{45_0}^{H}: There is no significant relationship between the announcements of “Nonfarm Payroll” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

H_{45_a}^{H}: There is a significant relationship between the announcements of “Nonfarm Payroll” in the U.S. and P GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonfarm Payroll</td>
<td>-1.25E-06</td>
<td>-3.074264</td>
<td>0.0021</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 45. Because p-value is 0.0021, which is less than 0.05, null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 46:

H_{46_0}^{H}: There is no significant relationship between the announcements of “CPI” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

H_{46_a}^{H}: There is a significant relationship between the announcements of “CPI” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.
Table 5.53 The estimation of the significant relationship between the CPI and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPI</td>
<td>0.000246</td>
<td>0.512941</td>
<td>0.6080</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 46. Because p-value is 0.6080, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 47:
H47₀: There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.
H47₁: There is a significant relationship between the announcements of “GDP QoQ” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

Table 5.54 The estimation of the significant relationship between the GDP QoQ and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP QoQ</td>
<td>0.000223</td>
<td>2.374641</td>
<td>0.0176</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 47. Because p-value is 0.0176, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 48:
H48₀: There is no significant relationship between the announcements of
“Unemployment Rate” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

H48a: There is a significant relationship between the announcements of “Unemployment Rate” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

Table 5.55 The estimation of the significant relationship between the Unemployment Rate in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment Rate</td>
<td>0.000871</td>
<td>6.433679</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 48. Because p-value is 0.0000, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 49:

H490: There is no significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

H49a: There is a significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

Table 5.56 The estimation of the significant relationship between the Retail Sales & Food Services, Total MoM and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
</table>
This table shows statistical result of Hypothesis 49. Because p-value is 0.4263, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 50:

$H_{50_0}$: There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

$H_{50_A}$: There is a significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

Table 5.47 The estimation of the significant relationship between the Housing Starts Number MM and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing Starts Number MM</td>
<td>-0.002157</td>
<td>-3.082564</td>
<td>0.0021</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 50. Because p-value is 0.0021, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 51:
H51₀: There is no significant correlation between the announcements of “PMI Chicago” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

H5₁ᵃ: There is a significant relationship between the announcements of “PMI Chicago” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

Table 5.58 The estimation of the significant relationship between the PMI Chicago and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMI Chicago</td>
<td>-1.77E-05</td>
<td>-1.197348</td>
<td>0.2312</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 51. Because p-value is 0.2312, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 52:

H5₂₀: There is no significant relationship between the announcements of “Import Price Index” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

H5₂ᵃ: There is a significant relationship between the announcements of “Import Price Index” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

Table 5.59 The estimation of the significant relationship between the Import Price Index and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Import Price Index</td>
<td>-0.000140</td>
<td>-0.575014</td>
<td>0.5623</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 52. Because p-value is 0.5623, which
is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 53:

$H_{53_0}$: There is no significant relationship between the announcements of “Industrial Production” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

$H_{53_a}$: There is a significant relationship between the announcements of “Industrial Production” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

Table 5.60 The estimation of the significant relationship between the Industrial Production and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial Production</td>
<td>0.000176</td>
<td>1.1100480</td>
<td>0.2668</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 53. Because p-value is 0.2668, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 54:

$H_{54_0}$: There is no significant relationship between the announcements of “CCI” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

$H_{54_a}$: There is a significant relationship between the announcements of “CCI” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

Table 5.61 The estimation of the significant relationship between the CCI and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
</table>
This table shows statistical result of Hypothesis 54. Because p-value is 0.0659, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 55:

$H_{55_0}$: There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

$H_{55_a}$: There is a significant relationship between the announcements of “Durable Goods Orders” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.

**Table 5.62 The estimation of the significant relationship between the Durable Goods Orders and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility**

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durable Goods Orders</td>
<td>5.12E-06</td>
<td>0.169803</td>
<td>0.8652</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 55. Because p-value is 0.8652, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 56:

$H_{56_0}$: There is no significant relationship between the announcements of “Nonfarm Payroll” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

$H_{56_a}$: There is a significant relationship between the announcements of “Nonfarm
Payroll” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

**Table 5.63 The estimation of the significant relationship between the Nonfarm Payrolls and TEDA Preferred Enterprises Equity Fund NAV volatility.**

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonfarm Payrolls</td>
<td>0.009898</td>
<td>1.175605</td>
<td>0.2398</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 56. Because p-value is 0.2398, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 57:

H57₀: There is no significant relationship between the announcements of “CPI” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

H57₁: There is a relationship correlation between the announcements of “CPI” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

**Table 5.64 The estimation of the significant relationship between the CPI and TEDA Preferred Enterprises Equity Fund NAV volatility.**

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPI</td>
<td>-0.772644</td>
<td>-0.716673</td>
<td>0.4736</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 57. Because p-value is 0.4736, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.
Hypothesis 58:

H58_0: There is no relationship correlation between the announcements of “GDP QoQ” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

H58_a: There is a relationship correlation between the announcements of “GDP QoQ” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

Table 5.65 The estimation of the significant relationship between the GDP QoQ and TEDA Preferred Enterprises Equity Fund NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP QoQ</td>
<td>-0.289792</td>
<td>-0.849946</td>
<td>0.3954</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 58. Because p-value is 0.3954, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 59:

H59_0: There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

H59_a: There is a significant relationship between the announcements of “Unemployment Rate” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

Table 5.66 The estimation of the significant relationship between the Unemployment Rate and TEDA Preferred Enterprises Equity Fund NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
</table>
This table shows statistical result of Hypothesis 59. Because p-value is 0.8635, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 60:

H$_{600}$: There is no significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

H$_{60a}$: There is a significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

Table 5.67 The estimation of the significant relationship between the Retail Sales & Food Services, Total MoM and TEDA Preferred Enterprises Equity Fund NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail Sales &amp; Food Services, Total MoM</td>
<td>-0.528681</td>
<td>-1.743377</td>
<td>0.0813</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 60. Because p-value is 0.0813, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 61:

H$_{610}$: There is no relationship correlation between the announcements of “Housing
H61: There is a relationship correlation between the announcements of “Housing Starts Number MM” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

H61a: There is a relationship correlation between the announcements of “Housing Starts Number MM” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

<table>
<thead>
<tr>
<th>Table 5.68 The estimation of the significant relationship between the Housing Starts Number MM and TEDA Preferred Enterprises Equity Fund NAV volatility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent variable</td>
</tr>
<tr>
<td>Housing Starts Number MM</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 61. Because p-value is 0.0495, which is less than 0.05, the null hypothesis would be rejected with 5% confidence level in this case.

Hypothesis 62:

H620: There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

H62a: There is a significant relationship between the announcements of “PMI Chicago” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

<table>
<thead>
<tr>
<th>Table 5.69 The estimation of the significant relationship between the PMI Chicago and TEDA Preferred Enterprises Equity Fund NAV volatility.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent variable</td>
</tr>
<tr>
<td>PMI Chicago</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 62. Because p-value is 0.1290, which
is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 63:

H63₀: There is no significant relationship between the announcements of “Import Price Index” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

H63ₐ: There is a significant relationship between the announcements of “Import Price Index” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

Table 5.70 The estimation of the significant relationship between the Import Price Index and TEDA Preferred Enterprises Equity Fund NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Import Price Index</td>
<td>0.280907</td>
<td>0.829525</td>
<td>0.4068</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypotheses 63. Because p-value is 0.4068, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 64:

H64₀: There is no significant relationship between the announcements of “Industrial Production” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

H64ₐ: There is a significant relationship between the announcements of “Industrial Production” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

5.71 The estimation of the significant relationship between the Industrial Production and TEDA Preferred Enterprises Equity Fund NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
</table>
This table shows statistical result of Hypothesis 64. Because p-value is 0.2796, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 65:

H650: There is no significant relationship between the announcements of “CCI” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

H65a: There is a significant relationship between the announcements of “CCI” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

**Table 5.72 The estimation of the significant relationship between the CCI and TEDA Preferred Enterprises Equity Fund NAV volatility.**

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCI</td>
<td>-0.048389</td>
<td>-1.891982</td>
<td>0.0585</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 65. Because p-value is 0.0585, which is than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 66:

H660: There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.

H66a: There is a significant relationship between the announcements of “Durable Goods Orders” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.
Table 5.73 The estimation of the significant relationship between the Durable Goods Orders and TEDA Preferred Enterprises Equity Fund NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durable Goods Orders</td>
<td>-0.034843</td>
<td>-1.046692</td>
<td>0.2952</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypotheses 66. Because p-value is 0.2952, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 67:
H\(_{67_0}\): There is no significant relationship between the announcements of “Nonfarm Payroll” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

H\(_{67_a}\): There is a significant relationship between the announcements of “Nonfarm Payroll” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

Table 5.74 The estimation of the significant relationship between the Nonfarm Payrolls and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonfarm Payroll</td>
<td>-1.66E-07</td>
<td>-0.374777</td>
<td>0.7078</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 67. Because p-value is 0.7078, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.
Hypothesis 68:

H680: There is no significant relationship between the announcements of “CPI” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

H68a: There is a significant relationship between the announcements of “CPI” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

Table 5.75 The estimation of the significant relationship between the CPI and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPI</td>
<td>0.000318</td>
<td>0.877616</td>
<td>0.3802</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 68. Because p-value is 0.3802, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 69:

H690: There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

H69a: There is a significant relationship between the announcements of “GDP QoQ” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

Table 5.76 The estimation of the significant relationship between the GDP QoQ and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
</table>
This table shows statistical result of Hypothesis 69. Because p-value is 0.0580, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 70:

$H_{70_0}$: There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

$H_{70_a}$: There is a significant relationship between the announcements of “Unemployment Rate” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment Rate</td>
<td>0.000402</td>
<td>2.342994</td>
<td>0.0191</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 70. Because p-value is 0.0191, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 71:

$H_{71_0}$: There is no significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

$H_{71_a}$: There is a significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.
Governance ETF Feeder NAV volatility.

\[H71_\alpha: \text{There is a significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.}\]

Table 5.78 The estimation of the significant relationship between the Retail Sales & Food Services, Total MoM and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail Sales &amp; Food Services, Total MoM</td>
<td>-0.000104</td>
<td>-0.865789</td>
<td>0.3866</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 71. Because p-value is 0.3866, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 72:

\[H72_\alpha: \text{There is a significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.}\]

\[H72_0: \text{There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.}\]

Table 5.79 The estimation of the significant relationship between the Housing Starts Number MM and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

| Independent variable | Coefficient | z-Statistic | Prob. |
This table shows statistical result of Hypothesis 72. Because p-value is 0.0616, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 73:

H73_0: There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

H73_a: There is a significant relationship between the announcements of “PMI Chicago” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

5.79 The estimation of the significant relationship between the PMI Chicago and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMI Chicago</td>
<td>-1.19E-05</td>
<td>-1.096657</td>
<td>0.2728</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 73. Because p-value is 0.2728, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 74:

H74_0: There is no significant relationship between the announcements of “Import
Price Index” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

H74\textsubscript{a}: There is a significant relationship between the announcements of “Import Price Index” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

Table 5.81 The estimation of the significant relationship between the Import Price Index and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Import Price Index</td>
<td>-0.000142</td>
<td>-0.840062</td>
<td>0.4009</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 74. Because p-value is 0.4009, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 75:

H75\textsubscript{0}: There is no significant relationship between the announcements of “Industrial Production” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder volatility.

H75\textsubscript{a}: There is a significant correlation between the announcements of “Industrial Production” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

Table 5.82 The estimation of the significant relationship between the Industrial Production and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
</table>
This table shows statistical result of Hypothesis 75. Because p-value is 0.5271, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 76:

H76₀: There is no significant relationship between the announcements of “CCI” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

H76ₐ: There is a significant relationship between the announcements of “CCI” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

Table 5.83 The estimation of the significant relationship between the CCI and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCI</td>
<td>-5.12E-06</td>
<td>-0.571454</td>
<td>0.5677</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypotheses 76. Because p-value is 0.5677, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 77:

H77₀: There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.
H77\textsubscript{a}: There is a significant relationship between the announcements of “Durable Goods Orders” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.

**Table 5.84 The estimation of the significant relationship between the Durable Goods Orders and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.**

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durable Goods Orders</td>
<td>1.24E-06</td>
<td>-0.055091</td>
<td>0.9561</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 77. Because p-value is 0.9561, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypotheses 78:

H78\textsubscript{0}: There is no significant relationship between the announcements of “Nonfarm Payroll” in the U.S. and BOCOM Growth Mixed A NAV volatility.

H78\textsubscript{a}: There is a significant relationship between the announcements of “Nonfarm Payroll” in the U.S. and BOCOM Growth Mixed A NAV volatility.

**Table 5.85 The estimation of the significant relationship between the Nonfarm Payrolls and BOCOM Growth Mixed A NAV volatility**

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonfarm Payrolls</td>
<td>0.000801</td>
<td>1.653426</td>
<td>0.0982</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 78. Because p-value is 0.0982, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.
Hypothesis 79:

H79₀: There is no significant relationship between the announcements of “CPI” in the U.S. and BOCOM Growth Mixed A NAV volatility.

H79ₐ: There is a significant relationship between the announcements of “CPI” in the U.S. and BOCOM Growth Mixed A NAV volatility.

Table 5.86 The estimation of the significant relationship between the CPI and BOCOM Growth Mixed A NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPI</td>
<td>-0.259034</td>
<td>-0.987875</td>
<td>0.3232</td>
</tr>
</tbody>
</table>

This table showed statistical result of Hypothesis 79. Because p-value is 0.3232, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 80:

H80₀: There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and BOCOM Growth Mixed A NAV volatility.

H80ₐ: There is a significant relationship between the announcements of “GDP QoQ” in the U.S. and BOCOM Growth Mixed A NAV volatility.

Table 5.87 The estimation of the significant relationship between the GDP QoQ and BOCOM Growth Mixed A NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP QoQ</td>
<td>-0.470707</td>
<td>-3.834765</td>
<td>0.0001</td>
</tr>
</tbody>
</table>
This table shows statistical result of Hypothesis 80. Because p-value is 0.0001, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 81:

H81₀: There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and BOCOM Growth Mixed A NAV volatility.

H81ₐ: There is a significant relationship between the announcements of “Unemployment Rate” in the U.S. and BOCOM Growth Mixed A NAV volatility.

Table 5.88 The estimation of the significant relationship between the Unemployment Rate and BOCOM Growth Mixed A NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment Rate</td>
<td>-0.409572</td>
<td>-1.664581</td>
<td>0.0960</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 81. Because p-value is 0.0960, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 82:

H82₀: There is no significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and BOCOM Growth Mixed A NAV volatility.

H82ₐ: There is a significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and BOCOM Growth Mixed A NAV volatility.

Table 5.89 The estimation of the significant relationship between the Retail Sales & Food Services, Total MoM and BOCOM Growth Mixed A-0.4 NAV volatility.
This table shows statistical result of Hypothesis 82. Because p-value is 0.5894, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 83:
H83₀: There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and BOCOM Growth Mixed A NAV volatility.
H83₁: There is a significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and BOCOM Growth Mixed A NAV volatility.

Table 5.90 The estimation of the significant relationship between the Housing Starts Number MM and BOCOM Growth Mixed A NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing Starts Number MM</td>
<td>0.405806</td>
<td>0.671724</td>
<td>0.5018</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 83. Because p-value is 0.5018, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 84:
**H84ₐ**: There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and BOCOM Growth Mixed A NAV volatility.

**H84ₐ**: There is a significant relationship between the announcements of “PMI Chicago” in the U.S. and BOCOM Growth Mixed A NAV volatility.

**Table 5.91 The estimation of the significant relationship between the PMI Chicago and BOCOM Growth Mixed A NAV volatility.**

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMI Chicago</td>
<td>-0.049187</td>
<td>-4.799398</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 84. Because p-value is 0.0000, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

**Hypothesis 85:**

**H85₀**: There is no significant relationship between the announcements of “Import Price Index” in the U.S. and BOCOM Growth Mixed A NAV volatility.

**H85ₐ**: There is a significant relationship between the announcements of “Import Price Index” in the U.S. and BOCOM Growth Mixed A NAV volatility.

**Table 5.92 The estimation of the significant relationship between the Import Price Index and BOCOM Growth Mixed A NAV volatility.**

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Import Price Index</td>
<td>-0.270113</td>
<td>-2.462960</td>
<td>0.0138</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 85. Because p-value is 0.0138, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.
Hypothesis 86:

H86₀: There is no significant relationship between the announcements of “Industrial Production” in the U.S. and BOCOM Growth Mixed A NAV volatility.

H86ₐ: There is a significant relationship between the announcements of “Industrial Production” in the U.S. and BOCOM Growth Mixed A NAV volatility.

Table 5.93 The estimation of the significant relationship between the Industrial Production and BOCOM Growth Mixed A NAV volatility

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial Production</td>
<td>0.007765</td>
<td>0.078238</td>
<td>0.9376</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 86. Because p-value is 0.9376, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 87:

H87₀: There is no significant relationship between the announcements of “CCI” in the U.S. and BOCOM Growth Mixed A NAV volatility.

H87ₐ: There is a significant relationship between the announcements of “CCI” in the U.S. and BOCOM Growth Mixed A NAV volatility.

Table 5.94 The estimation of the significant relationship between the CCI and BOCOM Growth Mixed A NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCI</td>
<td>-0.041940</td>
<td>-4.431113</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 87. Because p-value is 0.0000, which
is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 88:

H$_{880}$: There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and BOCOM Growth Mixed A NAV volatility.

H$_{88a}$: There is a significant relationship between the announcements of “Durable Goods Orders” in the U.S. and BOCOM Growth Mixed A NAV volatility.

Table 5.95 The estimation of the significant relationship between the Durable Goods Orders and BOCOM Growth Mixed A NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>$z$-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durable Goods Orders</td>
<td>-0.006663</td>
<td>-0.455192</td>
<td>0.6490</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 88. Because p-value is 0.6490, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 89:

H$_{890}$: There is no significant relationship between the announcements of “Nonfarm Payroll” in the U.S. and Lion Value Growth Mixed NAV volatility.

H$_{89a}$: There is a significant relationship between the announcements of “Nonfarm Payroll” in the U.S. and Lion Value Growth Mixed NAV volatility.

5.95 The estimation of the significant relationship between the Nonfarm Payrolls and Lion Value Growth Mixed NAV volatility

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>$z$-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
</table>
This table shows statistical result of Hypothesis 89. Because p-value is 0.2718, which is greater than 0.05, the null hypothesis fails be rejected with 5% confidence level in this case.

Hypothesis 90:

H$_{90_0}$: There is no significant relationship between the announcements of “CPI” in the U.S. and Lion Value Growth Mixed NAV volatility.

H$_{90_a}$: There is a significant relationship between the announcements of “CPI” in the U.S. and Lion Value Growth Mixed NAV volatility.

Table 5.97 The estimation of the significant relationship between the CPI and Lion Value Growth Mixed NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPI</td>
<td>-0.483941</td>
<td>-1.389372</td>
<td>0.1647</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 90. Because p-value is 0.1647, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 91:

H$_{91_0}$: There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and Lion Value Growth Mixed NAV volatility.

H$_{91_a}$: There is a significant relationship between the announcements of “GDP QoQ”
in the U.S. and Lion Value Growth Mixed NAV volatility.

**Table 5.98 The estimation of the significant relationship between the GDP QoQ and Lion Value Growth Mixed NAV volatility.**

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP QoQ</td>
<td>0.093865</td>
<td>0.379740</td>
<td>0.7041</td>
</tr>
</tbody>
</table>

This table showed statistical result of Hypothesis 91. Because p-value is 0.7041, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 92:

H$_{920}$: There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and Lion Value Growth Mixed NAV volatility.

H$_{92a}$: There is a significant relationship between the announcements of “Unemployment Rate” in the U.S. and Lion Value Growth Mixed NAV volatility.

**Table 5.99 The estimation of the significant relationship between the Unemployment Rate and Lion Value Growth Mixed NAV volatility.**

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment Rate</td>
<td>-0.603238</td>
<td>-1.605484</td>
<td>0.1084</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 92. Because p-value is 0.1084, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 93:
H93₀: There is no significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and Lion Value Growth Mixed NAV volatility.

H93₁: There is a significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and Lion Value Growth Mixed NAV volatility.

**Table 5.100 The estimation of the significant relationship between the Retail Sales & Food Services, Total MoM and Lion Value Growth Mixed NAV volatility.**

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail Sales &amp; Food Services, Total MoM</td>
<td>0.115029</td>
<td>0.798137</td>
<td>0.4248</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 93. Because p-value is 0.4248, which is than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 94:

H94₀: There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and Lion Value Growth Mixed NAV volatility.

H94₁: There is a significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and Lion Value Growth Mixed NAV volatility.

**Table 5.101 The estimation of the significant relationship between the Housing Starts Number MM and Lion Value Growth Mixed NAV volatility.**

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing Starts Number MM</td>
<td>4.124476</td>
<td>2.936605</td>
<td>0.0033</td>
</tr>
</tbody>
</table>
This table shows statistical result of Hypothesis 94. Because p-value is 0.0033, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 95:

H950: There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and Lion Value Growth Mixed NAV volatility.

H95a: There is a significant relationship between the announcements of “PMI Chicago” in the U.S. and Lion Value Growth Mixed NAV volatility.

### Table 5.102 The estimation of the significant relationship between the PMI Chicago and Lion Value Growth Mixed NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMI Chicago</td>
<td>-0.038102</td>
<td>-2.413244</td>
<td>0.0158</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 95. Because p-value is 0.0158, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 96:

H960: There is no significant relationship between the announcements of “Import Price Index” in the U.S. and Lion Value Growth Mixed NAV volatility.

H96a: There is a significant relationship between the announcements of “Import Price Index” in the U.S. and Lion Value Growth Mixed NAV volatility.

### Table 5.103 The estimation of the significant relationship between the Import Price Index and Lion Value Growth Mixed NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
</table>
This table shows statistical result of Hypothesis 96. Because p-value is 0.2361, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 97:

H97₀: There is no significant relationship between the announcements of “Industrial Production” in the U.S. and Lion Value Growth Mixed NAV volatility.

H97₁: There is a significant relationship between the announcements of “Industrial Production” in the U.S. and Lion Value Growth Mixed NAV volatility.

Table 5.104 The estimation of the significant relationship between the Industrial Production and Lion Value Growth Mixed NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial Production</td>
<td>-0.024686</td>
<td>-0.184508</td>
<td>0.8536</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 97. Because p-value is 0.8536, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 98:

H98₀: There is no significant relationship between the announcements of “CCI” in the U.S. and Lion Value Growth Mixed NAV volatility.

H98₁: There is a significant relationship between the announcements of “CCI” in the
U.S. and Lion Value Growth Mixed NAV volatility.

Table 5.105 The estimation of the significant relationship between the CCI and Lion Value Growth Mixed NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCI</td>
<td>-0.032621</td>
<td>-1.794110</td>
<td>0.0728</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 98. Because p-value is 0.0728, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 99:
H99₀: There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and Lion Value Growth Mixed NAV volatility.
H99₁: There is a significant relationship between the announcements of “Durable Goods Orders” in the U.S. and Lion Value Growth Mixed NAV volatility.

Table 5.106 The estimation of the significant relationship between the Durable Goods Orders and Lion Value Growth Mixed NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durable Goods Orders</td>
<td>-0.004649</td>
<td>-0.149614</td>
<td>0.8811</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 99. Because p-value is 0.8811, which is than 0.05, the null hypothesis would be rejected with 5% confidence level in this case.

Hypothesis 100:
H100₀: There is no significant relationship between the announcements of “Nonfarm
Payroll” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

H100$_a$: There is a significant relationship between the announcements of “Nonfarm Payroll” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

Table 5.107 The estimation of the significant relationship between the Nonfarm Payrolls and ChinaAMC SSE50 ETF NAV volatility

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonfarm Payrolls</td>
<td>0.003879</td>
<td>6.020657</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 100. Because p-value is 0.000, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 101:

H101$_0$: There is no significant relationship between the announcements of “CPI” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

H101$_a$: There is a significant correlation between the announcements of “CPI” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

Table 5.108 The estimation of the significant relationship between the CPI in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPI</td>
<td>-0.210063</td>
<td>-1.035580</td>
<td>0.3004</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 101. Because p-value is 0.3004, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.
Hypothesis 102:

H102_0: There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

H102_a: There is a significant relationship between the announcements of “GDP QoQ” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

Table 5.109 The estimation of the significant relationship between the GDP QoQ and ChinaAMC SSE50 ETF NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP QoQ</td>
<td>-0.113067</td>
<td>-0.923544</td>
<td>0.35557</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 102. Because p-value is 0.35557, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 103:

H103_0: There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

H103_a: There is a significant relationship between the announcements of “Unemployment Rate” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

Table 5.110 The estimation of the significant relationship between the Unemployment Rate and ChinaAMC SSE50 ETF NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment Rate</td>
<td>0.325851</td>
<td>1.704873</td>
<td>0.0882</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 103. Because p-value is 0.0882,
which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 104:

H104₀: There is no significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

H104ₐ: There is a significant relationship between the announcements of “Retail Sales & Food Services, Total MoM” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

Table 5.111 The estimation of the significant relationship between the Retail Sales & Food Services, Total MoM and ChinaAMC SSE50 ETF NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail Sales &amp; Food Services, Total MoM</td>
<td>-0.315714</td>
<td>-3.952729</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 104. Because p-value is 0.0001, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 105:

H105₀: There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

H105ₐ: There is a significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

Table 5.112 The estimation of the significant relationship between the Housing Starts Number MM and ChinaAMC SSE50 ETF NAV volatility.
<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing Starts Number MM</td>
<td>0.971078</td>
<td>1.251029</td>
<td>0.2109</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 105. Because p-value is 0.2109, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 106:

H106₀: There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and Cambodian Riel NAV volatility.

H₁₀₆ₐ: There is a significant relationship between the announcements of “PMI Chicago” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

Table 5.113 The estimation of the significant relationship between the PMI Chicago and ChinaAMC SSE50 ETF NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMI Chicago</td>
<td>-0.030340</td>
<td>-2.925780</td>
<td>0.0034</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 106. Because p-value is 0.0034, which is less than 0.05, the null hypothesis is rejected with 5% confidence level in this case.

Hypothesis 107:

H₁₀₇₀: There is no significant relationship between the announcements of “Import Price Index” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.
H107_a: There is a significant relationship between the announcements of “Import Price Index” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

**Table 5.114 The estimation of the significant relationship between the Import Price Index and ChinaAMC SSE50 ETF NAV volatility.**

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Import Price Index</td>
<td>-0.066591</td>
<td>-0.673577</td>
<td>0.5006</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 107. Because p-value is 0.5006, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.

Hypothesis 108:

H108₀: There is no significant relationship between the announcements of “Industrial Production” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

H108ₐ: There is a significant relationship between the announcements of “Industrial Production” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

**Table 5.113 The estimation of the significant relationship between the Industrial Production and ChinaAMC SSE50 ETF NAV volatility**

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial Production</td>
<td>-0.191342</td>
<td>-1.561361</td>
<td>0.1184</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 108. Because p-value is 0.1184, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.
Hypothesis 109:

H109₀: There is no significant relationship between the announcements of “CCI” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

H109ₐ: There is a significant relationship between the announcements of “CCI” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

Table 5.116 The estimation of the significant relationship between the CCI and ChinaAMC SSE50 ETF NAV volatility.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCI</td>
<td>0.011921</td>
<td>1.492537</td>
<td>0.1356</td>
</tr>
</tbody>
</table>

This table shows statistical result of Hypothesis 109. Because p-value is 0.1356, which is than 0.05, the null hypothesis would be rejected with 5% confidence level in this case.

Hypothesis 110:

H110₀: There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

H110ₐ: There is a significant relationship between the announcements of “Durable Goods Orders” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.

Table 5.117 The estimation of the significant relationship between the Durable Goods Orders and ChinaAMC SSE50 ETF NAV volatility

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Coefficient</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durable Goods Orders</td>
<td>-0.009470</td>
<td>-0.635188</td>
<td>0.5253</td>
</tr>
</tbody>
</table>
This table shows statistical result of Hypothesis 110. Because p-value is 0.5253, which is greater than 0.05, the null hypothesis fails to be rejected with 5% confidence level in this case.
CHAPTER VI
SUMMARY FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter is the summary of the research results. First part is about the summarizing statistical results from data analysis. Detailed discussions about these results are portrayed in the next part, and conclusions would be drawn depended on all information found and discussed. Finally, recommendations on issue revealed in research are stated in the last part, together with advice for future studies.

6.1 Summary of Findings

This research examined relationship between NAVs of Chinese equity mutual fund and eleven US macroeconomic news announcements surprise in six and half years from Jan, 2010 to June, 2016 in order to find the connection of Chinese equity mutual fund market to the globes leading economy. According to results of 110 hypotheses, NAVs of all ten indexes had significant coefficient to several of the eleven US macroeconomic surprise variables, although strength of significance is different with each index. The empirical result is valid enough to conclude that US macroeconomic status partially impacted Chinese equity mutual funds.

Level of confidence in this research is 0.05 or 5% and null hypothesis is rejected when calculated p value is less than it. Summary of each hypotheses results are highlighted in table 6.1 exhibits which news surprise factors were exactly influencing NAVs of Chinese equity mutual fund.

Table 6.1 Result of Hypotheses Test of NAVs of Chinese equity mutual fund
<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Coefficient</th>
<th>Prob. value</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1&lt;sub&gt;0&lt;/sub&gt;: There is no significant relationship between</td>
<td>-7.69E-07</td>
<td>0.0170</td>
<td>Reject H1&lt;sub&gt;0&lt;/sub&gt;</td>
</tr>
<tr>
<td>the announcements of “Non-farm Payrolls” in the U.S. and ChinaAMC CSI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>300 Feeder ETF NAV volatility.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H2&lt;sub&gt;0&lt;/sub&gt;: There is no significant relationship between</td>
<td>0.002293</td>
<td>0.5893</td>
<td>Fail to reject H2&lt;sub&gt;0&lt;/sub&gt;</td>
</tr>
<tr>
<td>the announcements of “CPI” in the U.S. and ChinaAMC CSI 300 Feeder ETF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NAV volatility.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H3&lt;sub&gt;0&lt;/sub&gt;: There is no significant relationship between</td>
<td>0.000148</td>
<td>0.0474</td>
<td>Reject H3&lt;sub&gt;0&lt;/sub&gt;</td>
</tr>
<tr>
<td>the announcements of “GDP QoQ” in the U.S. and ChinaAMC CSI 300 Feeder</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ETF NAV volatility.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H4&lt;sub&gt;0&lt;/sub&gt;: There is no significant relationship between</td>
<td>0.000615</td>
<td>0.0000</td>
<td>Reject H4&lt;sub&gt;0&lt;/sub&gt;</td>
</tr>
<tr>
<td>the announcements of “Unemployment Rate” in the U.S. and ChinaAMC CSI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>300 Feeder ETF NAV volatility.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H5&lt;sub&gt;0&lt;/sub&gt;: There is no significant relationship between</td>
<td>-0.000179</td>
<td>0.2030</td>
<td>Fail to reject H5&lt;sub&gt;0&lt;/sub&gt;</td>
</tr>
<tr>
<td>the announcements of “Retail Sales &amp; Food Services, Total MoM” in the U.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypothesis</td>
<td>Relationship</td>
<td>Test Statistic</td>
<td>p-value</td>
</tr>
<tr>
<td>------------</td>
<td>--------------</td>
<td>----------------</td>
<td>---------</td>
</tr>
<tr>
<td>$H_6_0$</td>
<td>There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.</td>
<td>-0.002198</td>
<td>0.0000</td>
</tr>
<tr>
<td>$H_7_0$</td>
<td>There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.</td>
<td>-1.67E-05</td>
<td>0.1737</td>
</tr>
<tr>
<td>$H_8_0$</td>
<td>There is no significant relationship between the announcements of “Import Price Index” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.</td>
<td>-0.000132</td>
<td>0.4734</td>
</tr>
<tr>
<td>$H_9_0$</td>
<td>There is no significant relationship between the announcements of “Industrial Production” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.</td>
<td>-1.81E-05</td>
<td>0.8379</td>
</tr>
<tr>
<td>$H_{10_0}$</td>
<td>There is no significant relationship between the announcements of “Consumer Confidence Index” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.</td>
<td>-1.79E-05</td>
<td>0.0684</td>
</tr>
<tr>
<td>Hypothesis</td>
<td>Test Statistic</td>
<td>p-Value</td>
<td>Decision</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>----------------</td>
<td>----------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>H11$_0$: There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and ChinaAMC CSI 300 Feeder ETF NAV volatility.</td>
<td>5.26E-07</td>
<td>0.9824</td>
<td>Fail to reject H11$_0$</td>
</tr>
<tr>
<td>H12$_0$: There is no significant relationship between the announcements of “Non-farm Payroll” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.</td>
<td>-6.52E-07</td>
<td>0.0390</td>
<td>Reject H12$_0$</td>
</tr>
<tr>
<td>H13$_0$: There is no significant relationship between the announcements of “CPI” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.</td>
<td>0.000457</td>
<td>0.2077</td>
<td>Fail to reject H13$_0$</td>
</tr>
<tr>
<td>H14$_0$: There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.</td>
<td>0.000152</td>
<td>0.0187</td>
<td>Reject H14$_0$</td>
</tr>
<tr>
<td>H15$_0$: There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.</td>
<td>0.000647</td>
<td>0.0000</td>
<td>Reject H15$_0$</td>
</tr>
<tr>
<td>H16$_0$: There is no significant relationship between the announcements of “Retail Sales &amp; Food Services, Total MoM” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.</td>
<td>-0.000141</td>
<td>0.3212</td>
<td>Fail to reject H16$_0$</td>
</tr>
<tr>
<td>Hypothesis</td>
<td>Description</td>
<td>t-value</td>
<td>p-value</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>H17&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.</td>
<td>-0.001383</td>
<td>0.0419</td>
</tr>
<tr>
<td>H18&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.</td>
<td>-1.42E-05</td>
<td>0.1540</td>
</tr>
<tr>
<td>H19&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “Import Price Index” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.</td>
<td>-0.000208</td>
<td>0.2970</td>
</tr>
<tr>
<td>H20&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “Industrial Production” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.</td>
<td>-1.08E-05</td>
<td>0.9159</td>
</tr>
<tr>
<td>H21&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “CCI” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.</td>
<td>-1.91E-05</td>
<td>0.0443</td>
</tr>
<tr>
<td>H22&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and E Fund SZSE 100 Feeder ETF NAV volatility.</td>
<td>1.03E-05</td>
<td>0.6772</td>
</tr>
<tr>
<td>Hypothesis</td>
<td>Description</td>
<td>Test Statistic</td>
<td>p-value</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
<td>----------------</td>
<td>---------</td>
</tr>
<tr>
<td>H23(_0)</td>
<td>There is no significant relationship between the announcements of “Nonfarm Payroll” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.</td>
<td>-0.000325</td>
<td>0.6921</td>
</tr>
<tr>
<td>H24(_0)</td>
<td>There is no significant relationship between the announcements of “CPI” in the U.S. and BOCOM Blue Chip M NAV volatility.</td>
<td>-1.080536</td>
<td>0.0092</td>
</tr>
<tr>
<td>H25(_0)</td>
<td>There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.</td>
<td>0.613216</td>
<td>0.0003</td>
</tr>
<tr>
<td>H26(_0)</td>
<td>There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.</td>
<td>0.196299</td>
<td>0.3388</td>
</tr>
<tr>
<td>H27(_0)</td>
<td>There is no significant relationship between the announcements of “Retail Sales &amp; Food Services, Total MoM” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.</td>
<td>0.496498</td>
<td>0.0001</td>
</tr>
<tr>
<td>H28(_0)</td>
<td>There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and BOCOM Blue Chip Mixed</td>
<td>1.293139</td>
<td>0.1057</td>
</tr>
<tr>
<td>Hypothesis</td>
<td>Relationship Description</td>
<td>Test Statistic</td>
<td>p-value</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------</td>
<td>----------------</td>
<td>---------</td>
</tr>
<tr>
<td>H29&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.</td>
<td>-0.024702</td>
<td>0.0263</td>
</tr>
<tr>
<td>H30&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “Import Price Index” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.</td>
<td>-0.257389</td>
<td>0.0944</td>
</tr>
<tr>
<td>H31&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “Industrial Production” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.</td>
<td>-0.176543</td>
<td>0.0865</td>
</tr>
<tr>
<td>H32&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “CCI” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.</td>
<td>-0.014581</td>
<td>0.2295</td>
</tr>
<tr>
<td>H33&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and BOCOM Blue Chip Mixed NAV volatility.</td>
<td>0.004508</td>
<td>0.8254</td>
</tr>
<tr>
<td>Hypothesis</td>
<td>Description</td>
<td>t-statistic</td>
<td>p-value</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
<td>-------------</td>
<td>---------</td>
</tr>
<tr>
<td>H34&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “Nonfarm Payroll” in the U.S. and China Universal SCI Index Fund NAV volatility.</td>
<td>-0.000879</td>
<td>0.0100</td>
</tr>
<tr>
<td>H35&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “CPI” in the U.S. and China Universal SCI Index Fund NAV volatility.</td>
<td>0.011791</td>
<td>0.9386</td>
</tr>
<tr>
<td>H36&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and China Universal SCI Index Fund NAV volatility.</td>
<td>-0.022566</td>
<td>0.7952</td>
</tr>
<tr>
<td>H37&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and China Universal SCI Index Fund NAV volatility.</td>
<td>-0.969666</td>
<td>0.0000</td>
</tr>
<tr>
<td>H38&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “Retail Sales &amp; Food Services, Total MoM” in the U.S. and China Universal SCI Index Fund NAV volatility.</td>
<td>-0.196149</td>
<td>0.0132</td>
</tr>
<tr>
<td>H39&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and China Universal SCI Index Fund NAV volatility.</td>
<td>-2.635902</td>
<td>0.0000</td>
</tr>
<tr>
<td>Hypothesis</td>
<td>Description</td>
<td>t-statistic</td>
<td>p-value</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
<td>-------------</td>
<td>---------</td>
</tr>
<tr>
<td>H40&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and China Universal SCI Index Fund NAV volatility.</td>
<td>-0.018987</td>
<td>0.0189</td>
</tr>
<tr>
<td>H41&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “Import Price Index” in the U.S. and China Universal SCI Index Fund NAV volatility.</td>
<td>0.265116</td>
<td>0.0042</td>
</tr>
<tr>
<td>H42&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “Industrial Production” in the U.S. and China Universal SCI Index Fund NAV volatility.</td>
<td>0.166594</td>
<td>0.0742</td>
</tr>
<tr>
<td>H43&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “CCI” in the U.S. and China Universal SCI Index Fund NAV volatility.</td>
<td>0.003795</td>
<td>0.6203</td>
</tr>
<tr>
<td>H44&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “Durable Goods Order” in the U.S. and China Universal SCI Index Fund NAV volatility.</td>
<td>-0.009766</td>
<td>0.3775</td>
</tr>
<tr>
<td>Hypothesis</td>
<td>Description</td>
<td>Test Statistic</td>
<td>p-value</td>
</tr>
<tr>
<td>------------</td>
<td>------------------------------------------------------------------------------</td>
<td>----------------</td>
<td>---------</td>
</tr>
<tr>
<td>$H_{45_0}$</td>
<td>There is no significant relationship between the announcements of “Nonfarm Payroll” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.</td>
<td>-1.25E-06</td>
<td>0.0021</td>
</tr>
<tr>
<td>$H_{46_0}$</td>
<td>There is no significant relationship between the announcements of “CPI” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.</td>
<td>0.000246</td>
<td>0.6080</td>
</tr>
<tr>
<td>$H_{47_0}$</td>
<td>There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.</td>
<td>0.000223</td>
<td>0.0176</td>
</tr>
<tr>
<td>$H_{48_0}$</td>
<td>There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.</td>
<td>0.000871</td>
<td>0.0000</td>
</tr>
<tr>
<td>$H_{49_0}$</td>
<td>There is no significant relationship between the announcements of “Retail Sales &amp; Food Services, Total MoM” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.</td>
<td>-0.000173</td>
<td>0.4263</td>
</tr>
<tr>
<td>Hypothesis</td>
<td>Description</td>
<td>t-statistic</td>
<td>p-value</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
<td>-------------</td>
<td>---------</td>
</tr>
<tr>
<td>H50_0</td>
<td>There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.</td>
<td>-0.002157</td>
<td>0.0021</td>
</tr>
<tr>
<td>H51_0</td>
<td>There is no significant correlation between the announcements of “PMI Chicago” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.</td>
<td>-1.77E-05</td>
<td>0.2312</td>
</tr>
<tr>
<td>H52_0</td>
<td>There is no significant relationship between the announcements of “Import Price Index” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.</td>
<td>-0.000140</td>
<td>0.5623</td>
</tr>
<tr>
<td>H53_0</td>
<td>There is no significant relationship between the announcements of “Industrial Production” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.</td>
<td>0.000176</td>
<td>0.2668</td>
</tr>
<tr>
<td>H54_0</td>
<td>There is no significant relationship between the announcements of “CCI” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.</td>
<td>-2.59E-05</td>
<td>0.0659</td>
</tr>
<tr>
<td>$H_{55}$: There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and GF CSI500 Index ETF Feeder Fund (LOF) A NAV volatility.</td>
<td>5.12E-06</td>
<td>0.8652</td>
<td>Fail to reject $H_{55}$</td>
</tr>
<tr>
<td>$H_{56}$: There is no significant relationship between the announcements of “Nonfarm Payroll” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.</td>
<td>0.009898</td>
<td>0.2398</td>
<td>Fail to reject $H_{56}$</td>
</tr>
<tr>
<td>$H_{57}$: There is no significant relationship between the announcements of “CPI” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.</td>
<td>-0.772644</td>
<td>0.4736</td>
<td>Fail to reject $H_{57}$</td>
</tr>
<tr>
<td>$H_{58}$: There is no relationship correlation between the announcements of “GDP QoQ” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.</td>
<td>-0.289792</td>
<td>0.3954</td>
<td>Fail to reject $H_{58}$</td>
</tr>
<tr>
<td>$H_{59}$: There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.</td>
<td>-0.163597</td>
<td>0.8635</td>
<td>Fail to reject $H_{59}$</td>
</tr>
<tr>
<td>Hypothesis</td>
<td>Correlation Coefficient</td>
<td>p-value</td>
<td>Conclusion</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------</td>
<td>---------</td>
<td>------------</td>
</tr>
<tr>
<td>H60: There is no significant relationship between the announcements of “Retail Sales &amp; Food Services, Total MoM” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.</td>
<td>-0.528681</td>
<td>0.0813</td>
<td>Fail to reject H60</td>
</tr>
<tr>
<td>H61: There is no relationship correlation between the announcements of “Housing Starts Number MM” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.</td>
<td>5.240231</td>
<td>0.0495</td>
<td>Reject H61</td>
</tr>
<tr>
<td>H62: There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.</td>
<td>-0.140344</td>
<td>0.1290</td>
<td>Fail to reject H62</td>
</tr>
<tr>
<td>H63: There is no significant relationship between the announcements of “Import Price Index” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.</td>
<td>0.289792</td>
<td>0.4068</td>
<td>Fail to reject H63</td>
</tr>
<tr>
<td>H64: There is no significant relationship between the announcements of “Industrial Production” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.</td>
<td>-0.482054</td>
<td>0.2796</td>
<td>Fail to reject H64</td>
</tr>
<tr>
<td>H65₀: There is no significant relationship between the announcements of “CCI” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.</td>
<td>-0.048389</td>
<td>0.0585</td>
<td>Fail to reject H65₀</td>
</tr>
<tr>
<td>H66₀: There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and TEDA Preferred Enterprises Equity Fund NAV volatility.</td>
<td>-0.034843</td>
<td>0.2952</td>
<td>Fail to reject H66₀</td>
</tr>
<tr>
<td>H67₀: There is no significant relationship between the announcements of “Nonfarm Payroll” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.</td>
<td>-1.66E-07</td>
<td>0.7078</td>
<td>Fail to reject H67₀</td>
</tr>
<tr>
<td>H68₀: There is no significant relationship between the announcements of “CPI” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.</td>
<td>0.000318</td>
<td>0.3802</td>
<td>Fail to reject H68₀</td>
</tr>
<tr>
<td>H69₀: There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.</td>
<td>0.000134</td>
<td>0.0580</td>
<td>Fail to reject H69₀</td>
</tr>
<tr>
<td>Hypothesis</td>
<td>Description</td>
<td>t-statistic</td>
<td>P-value</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
<td>-------------</td>
<td>---------</td>
</tr>
<tr>
<td>H70&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.</td>
<td>0.000402</td>
<td>0.0191</td>
</tr>
<tr>
<td>H71&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “Retail Sales &amp; Food Services, Total MoM” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.</td>
<td>-0.000104</td>
<td>0.3866</td>
</tr>
<tr>
<td>H72&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.</td>
<td>-0.001227</td>
<td>0.0616</td>
</tr>
<tr>
<td>H73&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.</td>
<td>-1.19E-05</td>
<td>0.2728</td>
</tr>
<tr>
<td>H74&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “Import Price Index” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.</td>
<td>-0.000142</td>
<td>0.4009</td>
</tr>
<tr>
<td>Hypothesis</td>
<td>Relationship Description</td>
<td>t-value</td>
<td>p-value</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>H75$_0$</td>
<td>There is no significant relationship between the announcements of “Industrial Production” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder volatility.</td>
<td>-4.05E-05</td>
<td>0.5271</td>
</tr>
<tr>
<td>H76$_0$</td>
<td>There is no significant relationship between the announcements of “CCI” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.</td>
<td>-5.12E-06</td>
<td>0.5677</td>
</tr>
<tr>
<td>H77$_0$</td>
<td>There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and BOCOM Schroders SSE180 Corporate Governance ETF Feeder NAV volatility.</td>
<td>-1.24E-06</td>
<td>0.9561</td>
</tr>
<tr>
<td>H78$_0$</td>
<td>There is no significant relationship between the announcements of “Nonfarm Payroll” in the U.S. and BOCOM Growth Mixed A NAV volatility.</td>
<td>0.000801</td>
<td>0.0982</td>
</tr>
<tr>
<td>H79$_0$</td>
<td>There is no significant relationship between the announcements of “CPI” in the U.S. and BOCOM Growth Mixed A NAV volatility.</td>
<td>-0.259034</td>
<td>0.3232</td>
</tr>
<tr>
<td>H80$_0$</td>
<td>There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and BOCOM Growth Mixed A NAV volatility.</td>
<td>-0.470707</td>
<td>0.0001</td>
</tr>
<tr>
<td>Hypothesis</td>
<td>Description</td>
<td>T-Value</td>
<td>P-Value</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>H81</strong></td>
<td>There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and BOCOM Growth Mixed A NAV volatility.</td>
<td>-0.409572</td>
<td>0.0960</td>
</tr>
<tr>
<td><strong>H82</strong></td>
<td>There is no significant relationship between the announcements of “Retail Sales &amp; Food Services, Total MoM” in the U.S. and BOCOM Growth Mixed A NAV volatility.</td>
<td>-0.056008</td>
<td>0.5894</td>
</tr>
<tr>
<td><strong>H83</strong></td>
<td>There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and BOCOM Growth Mixed A NAV volatility.</td>
<td>0.405806</td>
<td>0.5018</td>
</tr>
<tr>
<td><strong>H84</strong></td>
<td>There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and BOCOM Growth Mixed A NAV volatility.</td>
<td>-0.049187</td>
<td>0.0000</td>
</tr>
<tr>
<td><strong>H85</strong></td>
<td>There is no significant relationship between the announcements of “Import Price Index” in the U.S. and BOCOM Growth Mixed A NAV volatility.</td>
<td>-0.270113</td>
<td>0.0138</td>
</tr>
<tr>
<td><strong>H86</strong></td>
<td>There is no significant relationship between the announcements of “Industrial Production” in the U.S. and BOCOM Growth Mixed A NAV volatility.</td>
<td>0.007765</td>
<td>0.9376</td>
</tr>
<tr>
<td>Hypothesis</td>
<td>Description</td>
<td>Coefficient</td>
<td>p-value</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
<td>-------------</td>
<td>---------</td>
</tr>
<tr>
<td>H87₀</td>
<td>There is no significant relationship between the announcements of “CCI” in the U.S. and BOCOM Growth Mixed A NAV volatility.</td>
<td>-0.041940</td>
<td>0.0000</td>
</tr>
<tr>
<td>H88₀</td>
<td>There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and BOCOM Growth Mixed A NAV volatility.</td>
<td>-0.006663</td>
<td>0.6490</td>
</tr>
<tr>
<td>H89₀</td>
<td>There is no significant relationship between the announcements of “Nonfarm Payroll” in the U.S. and Lion Value Growth Mixed NAV volatility.</td>
<td>0.000996</td>
<td>0.2718</td>
</tr>
<tr>
<td>H90₀</td>
<td>There is no significant relationship between the announcements of “CPI” in the U.S. and Lion Value Growth Mixed NAV volatility.</td>
<td>-0.483941</td>
<td>0.1647</td>
</tr>
<tr>
<td>H91₀</td>
<td>There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and Lion Value Growth Mixed NAV volatility.</td>
<td>0.093865</td>
<td>0.7041</td>
</tr>
<tr>
<td>H92₀</td>
<td>There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and Lion Value Growth Mixed NAV volatility.</td>
<td>-0.603237</td>
<td>0.1084</td>
</tr>
<tr>
<td>Hypothesis</td>
<td>Description</td>
<td>t-value</td>
<td>p-value</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------</td>
<td>---------</td>
</tr>
<tr>
<td>H93&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “Retail Sales &amp; Food Services, Total MoM” in the U.S. and Lion Value Growth Mixed NAV volatility.</td>
<td>0.115029</td>
<td>0.4248</td>
</tr>
<tr>
<td>H94&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and Lion Value Growth Mixed NAV volatility.</td>
<td>4.124476</td>
<td>0.0033</td>
</tr>
<tr>
<td>H95&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and Lion Value Growth Mixed NAV volatility.</td>
<td>-0.038102</td>
<td>0.0158</td>
</tr>
<tr>
<td>H96&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “Import Price Index” in the U.S. and Lion Value Growth Mixed NAV volatility.</td>
<td>0.192229</td>
<td>0.2361</td>
</tr>
<tr>
<td>H97&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “Industrial Production” in the U.S. and Lion Value Growth Mixed NAV volatility.</td>
<td>-0.024686</td>
<td>0.8536</td>
</tr>
<tr>
<td>H98&lt;sub&gt;0&lt;/sub&gt;</td>
<td>There is no significant relationship between the announcements of “CCI” in the U.S. and Lion Value Growth Mixed NAV volatility.</td>
<td>-0.032621</td>
<td>0.0728</td>
</tr>
<tr>
<td>$H_{990}$: There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and Lion Value Growth Mixed NAV volatility.</td>
<td>-0.004649</td>
<td>0.8811</td>
<td>Fail to reject $H_{990}$</td>
</tr>
<tr>
<td>$H_{1000}$: There is no significant relationship between the announcements of “Nonfarm Payroll” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.</td>
<td>0.003879</td>
<td>0.0000</td>
<td>Reject $H_{1000}$</td>
</tr>
<tr>
<td>$H_{1010}$: There is no significant relationship between the announcements of “CPI” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.</td>
<td>-0.210063</td>
<td>0.3004</td>
<td>Fail to reject $H_{1010}$</td>
</tr>
<tr>
<td>$H_{1020}$: There is no significant relationship between the announcements of “GDP QoQ” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.</td>
<td>-0.113067</td>
<td>0.3557</td>
<td>Fail to reject $H_{1020}$</td>
</tr>
<tr>
<td>$H_{1030}$: There is no significant relationship between the announcements of “Unemployment Rate” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.</td>
<td>0.325851</td>
<td>0.0882</td>
<td>Fail to reject $H_{1030}$</td>
</tr>
<tr>
<td>$H_{1040}$: There is no significant relationship between the announcements of “Retail Sales &amp; Food Services, Total MoM” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.</td>
<td>-0.315714</td>
<td>0.0001</td>
<td>Reject $H_{1040}$</td>
</tr>
<tr>
<td>Hypothesis</td>
<td>Description</td>
<td>Test Statistic</td>
<td>p-value</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
<td>----------------</td>
<td>--------</td>
</tr>
<tr>
<td>H105&lt;sub&gt;0&lt;/sub&gt;: There is no significant relationship between the announcements of “Housing Starts Number MM” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.</td>
<td></td>
<td>0.971078</td>
<td>0.2109</td>
</tr>
<tr>
<td>H106&lt;sub&gt;0&lt;/sub&gt;: There is no significant relationship between the announcements of “PMI Chicago” in the U.S. and Cambodian Riel NAV volatility.</td>
<td></td>
<td>-0.030340</td>
<td>0.0034</td>
</tr>
<tr>
<td>H107&lt;sub&gt;0&lt;/sub&gt;: There is no significant relationship between the announcements of “Import Price Index” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.</td>
<td></td>
<td>-0.066591</td>
<td>0.5006</td>
</tr>
<tr>
<td>H108&lt;sub&gt;0&lt;/sub&gt;: There is no significant relationship between the announcements of “Industrial Production” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.</td>
<td></td>
<td>-0.191342</td>
<td>0.1184</td>
</tr>
<tr>
<td>H109&lt;sub&gt;0&lt;/sub&gt;: There is no significant relationship between the announcements of “CCI” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.</td>
<td></td>
<td>0.011921</td>
<td>0.1356</td>
</tr>
<tr>
<td>H110&lt;sub&gt;0&lt;/sub&gt;: There is no significant relationship between the announcements of “Durable Goods Orders” in the U.S. and ChinaAMC SSE50 ETF NAV volatility.</td>
<td></td>
<td>-0.009470</td>
<td>0.5253</td>
</tr>
</tbody>
</table>
Overall, some US news surprise variables are confirmed to have effect on Chinese equity mutual fund NAVs. GDP, House starting, Nonfarm payroll, PMI Chicago and Unemployment rate have a strong significant effect on the NAVs volatilities; Consumer price index, Retail sales, Import price index and Consumer confidence index have a weak significant relationship between them; The remaining variables fail to find any significant relationship with NAVs of Chinese equity mutual as Industrial production and Durable goods.

6.2 Discussion and Conclusions

With the globalization nowadays, the economy in most countries cannot stand by itself. Foreign news as well as world which is integrated with international trade and investment brings about reaction in local markets. This research also proved that US macro economy does have an impact on Chinese equity mutual fund market, although not all news surprise factors examined have significant effect. So to say, US economy does affect, but partially on Chinese equity mutual fund market. In another words, Chinese equity mutual fund market is reacting only to several perspectives of the US economy.

CPI and Import price indicators can be classified as pricing information or inflation. But the result did not show a relationship with the NAVs. Because Industrial production describes current status of business cycle and economic growth which will finally reflect in unemployment rate and GDP, however as the middle factor, it has no effect on NAV of equity mutual fund. However, GDP, House starting, Nonfarm payroll, Unemployment rate and Retail sales are grouped as Real economic variables which have a strong significant reflection on the dependent variables except CCI. It is obvious that volatility of NAV of Chinese equity mutual fund are influenced by the US economy. Leading indicators are PMI.
Chicago, Durable goods orders which show how market see economy in future, which is different from others, PMI Chicago is the only indicator have negative significant relationship with NAVs.

In conclusion, investors who invest in Chinese financial sector especially in equity mutual fund market, should take account not only general economic conditions in US but should also be concerned about forward-looking of US economy. Beside these statistical results, there is another reason that might be one of the causes to have this significant relationship. US as one of the biggest overseas investor countries in Chinese equity market trading value, and it has been proved that equity market has impact on equity mutual fund market.

Detailed discussions of each individual variable studied are listed and explained as follows:

6.2.1 Consumer Price Index Discussion

The US Consumer Price Index (CPI) surprise has been found to have a significantly negative relationship with NAV of Chinese equity mutual fund in BOCOM Blue ChipMixed NAV volatility only. But this relationship does not exist in other NAV indexes. This result shows the equity mutual fund market is impacted by sensitivity regarding US inflation rate. While the actual inflation rate is higher than forecasted, the NAV in Chinese equity mutual fund market will behave negatively. On the contrary, if the actual US CPI is lower than forecasted, the NAV in Chinese equity mutual fund market will be positive. Kim (2003) investigated Asia Pacific markets in Australia, Japan, Hong Kong and Singapore, and found similar evidence that CPI news from US has a significant effect on that market. Nguyen and
Ngo (2014)’s evidence showed that consumer price index have the strongest effect on all the Asian countries they studied.

6.2.2 Import price Discussion

The US Import price surprise has no significant influence on NAV volatility of Chinese equity mutual fund with all ten NAV index examined. Balduzzi et al., (2001) also failed to find any significant relationship in US bond market. This is contrast to paper of Nikkinen et al., (2006) which found the positive significant relationship in Asia emerging markets.

6.2.3 Industrial production Discussion

The US Industrial production surprise cannot find any significant relationship with Chinese equity mutual fund market. Buttler et al., (2012) found the same result of US Industrial production surprise in Poland, Hungary and Czech equity market. However, Andritzky et al., (2005) have a different conclusion as US Industrial production news had positive significant relationship on emerging bond market. Industrial production surprise during this period is all positive which means the economy doing better than expected, it may lead to potential economic overheating issue. And this news as the middle factor, the equity mutual fund is affected by the real economic indicators, and equity mutual fund is reflected by the trend of stock. There are even some previous studies that showed significant relationship with stock market but the influence is reduced while the information transfer to equity mutual fund market.
6.2.4 GDP Discussion

The hypothesis results regarding US GDP surprise and Chinese equity mutual fund market NAV index confirmed a significant relationship between them. This relationship is valid among top three mutual fund which stand for great size of equity mutual fund in the market. Most of NAV indexes presented a positive relationship with this news, only one showed a negative relationship on it. This result is line with Fuss et al., (2014) and Buttner et al., (2012), who found a significant relationship in US Real Estate Investment Trust return and Czech stock market. However, Veredas (2003) studied the GDP news in bond market, he failed to prove significance of that relationship. There another tow researchers, Kim (2003) and Nikkinen et al., (2006) also cannot find the significant result, this research examined Advanced Asia Pacific stock market and stock market of seven regions in the world (G7, Europe, Asia Developed, Asia Emerging, Transition economies, and Latin America).

6.2.5 House starting Discussion

The US Nonfarm payroll surprise has been found to have a strong significantly relationship with NAV of Chinese equity mutual fund, which affected most NAVs comparing with other news announcements in this article. Nguyen (2011) examined the important relationship between the macroeconomic variables and stock returns volatility in Vietnam and also found a significant relationship on it. As one of the main foreign country investing to China, Real estate is the second selection for US except Manufacturing industry. So House starting is an important indicator to watch.

6.2.6 Nonfarm payroll Discussion

The US Nonfarm payroll surprise has significantly relationship with NAV of Chinese equity mutual fund, which shows strong significant impact with half NAV indexes. This
result insists with previous studies indicating a fast and significant reaction of European
developed market to macroeconomic news (Harju and Hussain, 2011; Dimpfl, 2011). The
announcement of NFP presented strongest reaction, because it is the first macroeconomic
news released each month. Nguyen (2011) and Balduzzi et al., (2001) also found Nonfarm
payroll surprise was very important announcement affecting stock return in Vietnamese
market and bond price in US market. Mastronardi, Patane and Tucci (2013) found the
significant relationship between the macroeconomic variables and the equity market returns
volatility in Italy. They found that the news of nonfarm payroll had an impact on the equity
index volatility.

6.2.7 Unemployment rate Discussion

The hypothesis results regarding US Unemployment rate surprise and Chinese equity
mutual fund market NAV index confirmed a significant relationship between them. This
result is insisted with the study of Mastronardi, Patane and Tucci (2013). Nguyen and Ngo
(2014) detected the significant relationship between the US macroeconomic news on Asian
stock markets. Their evidence showed that unemployment rate has the strongest spillover
impact on the Asian stock markets.

6.2.8 Retail Sales Discussion

There are three Chinese equity mutual fund NAV Indexes in this research have been
found a statically strong significant relationship with US Retail sales change surprise. While
retail sales changed different from what market expected, Chinese equity mutual fund is
reacting with it. Two of them have a negative effect, one impacted positively. The paper form
Butnner et al., (2012) is approved with this result which showed Retail sales change move
Poland and Hungarian stock market significantly.
6.2.9 CCI Discussion

The Consumer confidence index surprise has negative significant impact on as NAVs of Chinese equity mutual fund. There are three NAV indexes showed the strong impact on this US news surprise. It means when US CCI is actually showed higher than forecasted, NAV of Chinese equity market will suffer decrease. On the other hand, if the actual news announcement is lower than surveyed value, NAV of Chinese equity market will be positive. Veredas (2003) found the similar result, it showed that there is a significant relationship CCI surprise in bond market. Mastronardi, Patane and Tucci (2013) also found a significant relationship between the macroeconomic variable of consumer confidence and the equity market returns volatility in Italy.

6.2.10 PMI Chicago Discussion

The PMI Chicago surprise have negative significant impact on as NAVs of Chinese equity mutual fund, which is valid to four NAV indexes, which means when actual US PMI Chicago is showed higher than forecasted, NAV of Chinese equity market will decline. However, if the actual news announcement is lower than surveyed value, NAV of Chinese equity market will be increase. Brazys et al., (2014) found the similar result that showed most significant announcement is US PMI Chicago surprise on the treasury market in US. Balduzzi et al.,(2001) also insisted this result and confirmed that this surprise change would impact the bond price in US, even Construction spending is released with PMI Chicago index at same time but it is not affect to the US bond market.

6.2.11 Durable goods Discussion

The hypothesis results regarding US Durable goods surprise and Chinese equity mutual fund
market NAV index doesn’t find a significant relationship between them. But Gurgel and Wojtowicz (2008) give a different answer, they found the significant relationship between them in Polish stock market, which showed good news imply positive return and bad news imply negative return.

In conclusion, GDP, House starting, Nonfarm payroll, PMI Chicago and Unemployment rate have a strong significant effect on the NAVs volatilities; This relationship is valid among half indexes sampled as NAVs of Chinese equity mutual fund. The p value of them are low and close to 0.01 which means when those US news or inflation have strong significant on equity mutual fund NAVs. Especially, there are more than half index show that house starting index has strong effect. PMI Chicago confirmed a significant negative relationship between them. This means when US PMI Chicago or inflation rate is actually showed higher than forecasted, NAV of Chinese equity mutual market. On the contrary, if the inflation rate is lower than market expectation, NAVs will be positive. The result of GDP, Nonfarm payroll, and Unemployment rate are in line with previous papers of similar design.

Consumer price index, Retail sales, Import price indices and Consumer confidence index have a weak significant relationship between them; those macroeconomic news impacted less than half mutual funds which in total are ten. Consumer price index only has significant result with one equity mutual fund, Retail sales is impacted three fund index and Import price index is influenced two NAV index. But the p value of them are low and close to 0.01.

And Industrial production and Durable goods fail to find any significant relationship with NAVs of Chinese equity mutual, none of these variables show any significant relationship with the NAV index, this result also in line with some previous papers.
6.3 Recommendations

With all studies and hypotheses results, US macroeconomic surprise has been verified to be significantly influential on Chinese equity mutual fund market. Consequently, the researcher, fund manager and investor and policy makers in China Securities Regulatory Commission could get useful information from result of this research.

With the responsibility of making benefits for investors by managing their capital, fund managers need hold as much and accurate as possible information to make decision on equity mutual fund operation. They should keep constant check on US macroeconomic consensus forecast and current situation before making investment strategies.

For investors who are afraid to take high risk but want to gain more return than saving in bank, mutual fund is the best investment choice for them. Comparing with only watching trend of equity mutual fund market and equity market every day, they should also pay attention to US macroeconomic news information, especially those variables found significant relationship in this research.

To policy makers in China Securities Regulatory Commission, since mutual fund market is in developing stage and growing at high speed, they should make an effort to attract more investors from elsewhere and build a health rule for participators. In this way, Chinese equity mutual fund market can become diversified and influential.
6.4 Future research

The test result of this paper is agreed with similar previous studies which examined on financial market which are stock, bond and exchange market. Even equity mutual fund market is financial as well, those differences could be from different causes; It would be valuable and interesting for further studies to be based on those differences.

Firstly, this research just is the prediction the impact of macroeconomic factors and their unexpected macroeconomic variables on the NAV volatility on the period from January, 2010 to June, 2016 which examines only the outside factors but in the truth the volatility of NAVs of equity mutual fund don’t depend on the only the external factors.

Secondly, there are many causes of the fluctuation such as the personal income, operation of fund manager, the strategic plan in the asset management companies, and so on. Each inside factor also would impact the volatility of NAVs of equity mutual fund in certain level, for example, the experience and knowledge of fund manager is the key factor that lead a fund going to thriving or defeating.

Thirdly, since the researcher uses the 5% level (0.05) of significant confidence level in the hypotheses because it helps to certainly prove the impact of macroeconomic volatility. But it doesn’t mean; the other factors don’t have the effect on equity mutual fund NAVs volatility, some dependent variable which are Industrial production and Durable goods have the effect on NAVs volatility of equity mutual fund which have a weak significant relationship on the fluctuation of NAVs of equity mutual fund at 10 % level (0.1) of confidence. This research can indicate the cause of the volatility of equity mutual fund volatility in long term.
Bibliography


Website

http://faculty.smu.edu/tfomby/eco6375/bj%20notes/adf%20notes.pdf, retrieved on 12/1/2017

http://public.econ.duke.edu/~boller/Published_Papers/ben_hand_94.pdf, retrieved on 12/1/2017

https://www.fitchratings.com/site/pr/1004627, retrieved on 12/1/2017


http://www.researchandmarkets.com/reports/544585analyzing_chinas_mutual_fund_industry_2016, retrieved on 12/1/2017


http://www.researchandmarkets.com/reports/544585analyzing_chinas_mutual_fund_industry_2016, retrieved on 12/1/2017

http://public.econ.duke.edu/~boller/Published_Papers/ben_hand_94.pdf, retrieved on 12/1/2017


http://www.amac.org.cn/tjsj/qgtjjsj/, retrieved on 12/1/2017

http://faculty.chicagobooth.edu/ruey.tsay/teaching/uts/lec2-08.pdf, retrieved on 12/1/2017


http://www.businessdictionary.com/definition/consumer-price-index-CPI.html, retrieved on 12/1/2017


