

B+



## **Underpricing and short-term performance of IPO stocks in Thailand**

Thammasat University, Bangkok Thailand

Semester 2/2017

Bachelor of Economics International Program

By

Kan Phonsuksiri 5704640563

Date: May 2018

### **Abstract**

IPO stocks usually have very high popularity among investors for a very long period of time. Volume always ranked as one of the most volume traded in every stock exchange. On first day trade and few days after, the volume makes price fluctuate in underpricing and short-run return a lot. So I find the variable that is likely to affect price in short run most. With 109 observations from the year 2004 to 2013 in Stock Exchange of Thailand. There are variables that significantly affect underpricing which is the size of the firm, the bigger the firm the smaller underpricing. And factor that negatively affect price in short run mostly is by technical analysis which is hotissuance.

## **1.Introduction**

When people buy stock, questions were raised on my head with a different dimension. How much money each person invests in stock market? Is the economy now is good or bad? Which factor of fundamental analysis affect price the most? Does technical analysis affect price? Why the price of each stock is so unique and fluctuate in its own way? Does manipulate stock prices really can make a profit, if yes then fundamental analysis for trading in short-term may not an appropriate way to analyze to get profit? However, in long-term, Warren Buffett uses fundamental analysis to get money to the top ten richest man in the world. Does stock index matter? Can normal people like me get an extraordinary return than the stock index or inflation rate? These questions arise but due to the limited time available. Some of these questions will be answered.

After reading many researches about IPOs, look at many sources of interesting topic. Finally, I found out very interesting quote said “The academic research of Ritter, who many would say ‘wrote the book’ on returns around IPOs. The crux of his research is that investors are rewarded for partaking in an IPO in the short-term, but rarely benefit in the long-term.” (Castle Point Funds Management, 2016). This quote means that if you buy stock and sold IPO stock in short-term will likely get more profit than long-term. I start to realize that this is true for many stock markets and use this information as the main findings for this research “Which factor affect short-term return?” will be the main question for this research with appropriate methodology from my research will get the reliable result to adapt to the real world. From investor point of view, this research will help you guide which factor might affect price in short run if you want to buy. From owner’s view, they might know more about key factor to drive investors interested in their own stock and increase their net worth.

Since there are many types of research about Thai IPO stocks compared underpricing, short-term return, long-term return (usually market adjusted) with typical fundamental numbers such as earnings growth rate, P/E, P/BV, the percentage of the biggest shareholder. Etc. I found that there is very few researches that compares technical number such as hot and cold market with a short-term return. Hot and cold market is interesting to study because you will know more about technical

analysis while most of IPO research does not include. Hot IPO market can be interpreted into high volume of offerings, high underpricing, or concentration in particular industries<sup>1</sup>. In opposite, Cold IPO market can be interpreted into low volume of offerings, low underpricing, or less concentration in particular industries. Most Hot and cold market is dependent variable using logit model while fundamental analysis such as P/E, and P/BV. Etc. will be independent variable (e.g. Helwege & Liang, 2001). Since this research will focus on price after IPO so price will be dependent variable instead. From reasons all above, this research will add those factors to the equation to find and contribute readers to find new results.

## **2.literature review**

For underpricing of Thai stocks (Allen et al. 1999) result based on 150 IPOs listed on SET from 1985 to 1992 is 63.49%. However, as time pass, Venkatesh and Neupane (2005) has studied the underpricing Thai IPOs over the 2000-2004 period covering 74 IPOs, gets underpricing result lower than prior year of studies which is at 33%. Which is lower than the prior year.

For foreign stock underpricing, as the new stock market just emerges, such as China, reopened stock market after a 40-year, underpricing averaging from 1990-2010 is through the roof with 156% return, Liu & Ritter, 2011. For the United States, from 1990-2010, average underpricing is just 18%, Liu & Ritter, 2011. For Switzerland, Kunz and Aggarwal (1994) using IPO between 1983 and 1989, report average first-day return by 35.8 %. Levis (1993), using a sample of 712 IPOs in the UK in 1980-1988, reports that the average adjusted initial return is 14.3 percent.

According to (นางสาวฉัฐมา พิมพ์สกุล, 2010) empirical results from 2001-2009 using SET index adjusted, underpricing rate is 17.4%, return day 20 is 11.94%, return day 100 is 15.34%, return day 365 is 6.24%, return day 730 is 3.95%

Since the capital market in Thailand is still under development, I contend that the presence of asymmetric information among investors in the developing country as Thailand is more likely to be

---

<sup>1</sup> For example, Helwege and Liang (2004), found that hot markets defined by high volume are less concentrated in particular industries, higher market-to-book ratios, lower earnings than IPOs in cold market.

severe than in developed countries. Subsequently, potential investors in developing countries such as Thailand may require higher initial returns, implying that the underpricing of the Thai IPOs is expected to be substantially higher than that of the new equity issues in more developed countries such as UK and U.S.

Ibbotson (1975), USA stocks, 1965-1969 average initial return for 1 month after issuance date is 11.4% which is overperforming the US index. For the longer term, 3 years after first-day trading, most of the countries are underperforming their country's index as shown in Table 1. There is a very rare case from Korea which overperforms index they compare with.

Table 1: Summary of results from previous research

Citation	Country of research	Year of research	Average stock return 3 Years after issuing price (index adjusted)
Gompers and Lerner (2003)	U.S	1935-1972	underperformance
Welch and Ritter (2002)	U.S	1980 and 2001	underperformance
Kim et al. (1995)	Korea	1985–89	overperformance
Keloharju (1993)	Finland	1984-1989	underperformance
Espenlaub, Gregory, and Tonks (2000)	UK	1985-1992	underperformance

### 2.3 Hot and cold markets

Since there are many ways to calculate hot and cold market. Literature review in this section will cover only the equation this paper calculated. Helwege and Liang (2001) empirical result shows that hot underpricing IPO has higher growth opportunities than cold underpricing, although many other factors are the same. However, for hot and cold issuance, hot market IPOs are more likely to have lower earnings, they have less R&D and more fixed assets, and do not exhibit faster sales growth in the five years following the IPO than cold market IPOs.

### 2.4 Others

Zhou and Lao (2012) studies on first 65 listed companies in ChiNext P/E is the most significant negative correlation with underpricing. Furthermore, to get a better return from underpricing. manufacturing companies, investors had better choose the company with higher ownership concentration in order to get a higher return on investment. Controversy, P/E, (Durukan, 2002)

empirical results of Istanbul Stock Exchange show that P/E have very small confidence interval with negative correlation to Underpricing and several days after first-day trading. Durukan (2002) result, with 95% confidence level, AGE has a positive correlation with underpricing. Ibbotson et al., (1994) and Finkle (1998) result shows that the bigger company is the lower underpriced of IPO. Durukan (2002) result shows that with 99% confidence level, D/E has a negative correlation with underpricing.

My contribution for more information is that I find result from year that most research don't. Also focusing on factor affecting prices of each stock in underpricing and short-run. Hot and cold market affect price is the new findings since I could not find any research about this.

### **3.Methodology**

#### **3.1Data and limitations**

This research use secondary data from datastream, sec.or.th there is only Thai version called 'หนังสือชี้ชวน', set.or.th and efinstockpickup. To collect all those data. I use IPO stock from 2004 to 2013. The real number of issuance is 137 stocks. However, this project has limited time and cost. Since the problem to collect all data is very hard to collect such as stock price, P/E, P/ BV, mergers and acquisitions that delisted from the stock market. Also compare the stock that split shares, issue warrant, share buyback, many more that change number of share is very time-consuming. So the actual number of stock<sup>2</sup> that I use is 109.

Astoundingly, in sum, total money raised for 109 stocks from 2004 to 2013 is 190,367,150,000 Baht, total firm value at the offer price is 787,034,500,000 Baht suggesting that the IPO firms leave

---

<sup>2</sup> Those 109 stocks include UTP, INOX, MCOT, BCH, PAP, TOP, SNC, GL, GBX, TKT, WORK, DCON, AQUA, SAM, SEAFCO, OISHI, ML, AMC, SIS, NNCL, CSL, A, SPACK, NCH, ECL, AOT, GRAND, SCG, Q-CON, IHL, CSP, GREEN, GC, PREB, KCAR, DRT, UOBKH, TWZ, PRIN, EASON, PRINC, ASK, MCS, PERM, TSC, SMIT, GLOW, SUPER, SOLAR, SMM, KSL, TMT, SPPT, BSBM, SAT, JTS, FORTH, AKR, TOG, CITY, GSTEL, MJD, BWG, THE, DTAC, S, UNIQ, SYNEX, SGP, AS, PM, TTW, SABINA, ESSO, LHK, BLA, SMT, GLOBAL, SENA, JMART, TTCL, SYMC, GUNKUL, IFS, IVL, APCS, KBS, LHBANK, BEAUTY, ANAN, JMT, WHA, VGI, SRICHA, AAV, VIH, BJCHI, NYT, MEGA, THREL, CSS, M, PACE, CKP, MC, NOK, PTG, CHG, PPP.

approximately 90,998,082,712 on the table as the underpricing cost<sup>3</sup>. There is 8 industry type<sup>4</sup>. which consists of 5 stocks of AGRO, 2 stocks of CONSUMP, 12 stocks of FINCIAL, 12 stocks of INDUS, 34 stocks of PROPCON, 11 stocks of RESOURC, 20 stocks of SERVICE, 13 stocks of TECH.

### 3.2 Variable

Since this research have limited time available, some factor independent variable such as biggest share percentage of the stockholder, total share percentage of institutional investors.

Zhou and Lao (2012) is my main reference for these multiple regression models which contain 12 possible factors totally in this paper: the firm age, retained rate, proportion of state-owned shares, institutional investors shareholding ratio, firm size, ownership concentration, equity balance, lot winning rate, growth rate of business profit, return on equity, financial leverage, and offering P/E. However, due to the limited time available, this research could only find some of all variable and add some new interesting variable. These variables are P/E, D/E, ROE, fixed asset to total asset, Market to book value, retain earning per share/stock price, firm age, industry type, hot and cold by return, hot and cold by the issuance, offering value/ total value, underpricing

I would like to divide independent variable into 2 groups, Hot, normal and cold market is for technical analysis. These variables will be related to price and volume. The second one is for fundamental analysis. These variables will be related to the intrinsic value of financial factors.

Dependent variables are for underpricing and return from holding stocks. Hence, the main goal is to find which factor affect price in short run. To understand easier, you can look at Table 2

---

<sup>3</sup> Underpricing cost =(total market value at day1 close price from every stock from year 2004-2013) –(total market value calculated by offer price from every stock from year 2004-2013)

<sup>4</sup> Each industry type can be divided into sub-groups. Since number of stock for each sub-group is too small, I use industry type instead.

Table 2: Shows the variables of each factors used in the equation

Factor	Variable
Dependent variable	
	fdtipo
	day010d1
	day080d10
	day0100d1
Independent variable	
Financial ratio (Fundamental analysis)	AGE
	logSIZE
	ROE
	DE
	PE
	PBV
	TORR
Industry type (Fundamental analysis)	CONSUMP
	FINCIAL
	INDUS
	PROPCON
	RESOURC
	SERVICE
	TECH
Market calculated by issuance (Technical analysis)	coldissuance
	hotissuance
Market calculated by returnreturn (Technical analysis)	coldreturn
	hotreturn

### 3.2.1 Independent variable

#### 3.2.1.1 technical analysis (defining Hot, normal and cold market)

Hot and cold market is mostly based on volume. For example, Loughran and Ritter (1995) indicates that 1980s as a hot market because of higher issuance volume than 1970s. Loughran and Ritter (1995) also describe the 1980s as a hot because most of that decade had much higher issuance volume than the 1970s. Another example from Ritter (1984) for defining the hot market is based on underpricing.

Actually, there are many ways to find hot and cold market. However, I choose Helwege and Liang (2001) way to define hot and cold market as a prototype and adapt to Thai stock market since

the number of issuance in Thai is less than in the USA. 2 ways to find hot and cold market according to Helwege and Liang (2001) are:

a) First day return

First day return is individually defined as hot, normal or cold market. Defined by Initial return=underpricing=first day return= $\frac{(\text{first day closing price})}{(\text{Offering price})}$  of all 109 stocks. Then find 1st quartile and 3rd quartile from initial return result is -2.041% and 26.506% accordingly. Initial return of stock that has return equal to or more than 26.506% is considered as hot market. Initial return of stock that has return equal to or less than -2.041%, is considered as cold market. Initial return of stock that has return in between 26.506% and -2.041% considered as normal market. There are 28 cold return stocks, 27 normal return stocks and 54 hot return stocks.

b) Number of issuance

Number of issuance is grouped into quarter (3 months). Each group defined as hot, normal or cold market. Defined by count number of first day trading stocks in a quarter. Then do 5 quarter moving average to smoothen number of issuance. Finally find 1st and 3rd quartile of every quarter moving average. Moving average of each quarter that are on and above first quartile, 3.7 number of first day trading stocks in each quarter or more considered as hot market. Moving average of each quarter that are on and below third quartile, 1.2 number of first day trading stocks in each quarter or less considered as cold market. Number of first day trading stocks each quarter that is in between first and third quartile considered as normal market. There are 7 cold issuance stocks, 41 normal issuance stocks, 61 hot issuance stocks.

### 3.2.1.2 fundamental analysis (independent variable)

*AGE* refers to the time from firm setting up age to be listed; *TORR* = retained rate = retained earnings per share/offering price;  $\log(\text{SIZE})$  I use log base 10 also known as the common logarithm to the *SIZE* because it will be better interpreting the smaller number than big number when regress multiple regression with other small number variable; *ROE* is return on equity; *LEV* is financial leverage; P/E is (offering price/earnings) ratio;  $\varepsilon_i$  is residual value;

For dummy variable,

*Hotre.* = 1 if stock is hot market calculated by first day return, *Hotre.* = 0 otherwise,

*Coldre.* = 1 if stock is cold market calculated by first day return, *Coldre.* = 0 otherwise

*Hotis.* = 1 if stock is hot market calculated by number of issuance *Hotis.* = 0 otherwise

*Coldis.* = 1 if stock is cold market calculated by number of issuance *Coldis.* = 0 otherwise

*Consump* = 1 if stock is in consump category, *Consump* = 0 otherwise,

*Financial* = 1 if stock is in financial category, *Financial* = 0 otherwise,

*Indus* = 1 if stock is in indus category, *Indus* = 0 otherwise,

*Propcon* = 1 if stock is in propcon category, *Propcon* = 0 otherwise,

*Resourc* = 1 if stock is in resourc category, *Resourc* = 0 otherwise,

*Service* = 1 if stock is in service category, *Service* = 0 otherwise,

*Tech* = 1 if stock is in tech category, *Tech* = 0 otherwise,

*Agro* is industry type related to Agriculture and Food Industry that can be divided into Agricultural Business, and Food & Beverage. *Consump* is industry type related to Consumer Products that can be divided into Fashion, Household and office, and Personal Belonging goods. *FINCIAL* is industry type related to Financial Business that can be divided into Bank, *Financial* institutions or brokers, and Insurance. *Indus* is industry type related to Industrial Products that can be divided into Automotive Industry, Industrial Supplies & Machinery, Business paper and printing

supplies, Petrochemicals & Chemicals, Packaging business, Steel industry. *Propcon* is industry type that related to Property and Construction that can be divided into Construction Materials, Real Estate, and Property Fund. *Resourc* is industry type that related to resource that can be divided into Energy and utilities, and mining stocks. *Service* is industry type related to service that can be divided into Commercial Trade, Hospital business, Media and Publications, Special Services, Travel, and Transportation and logistics. *Tech* is industry type related to technology that can be divided into Electronic components, and information and Communication technology.

### 3.2.2 Dependent variable

The main goal is to beat the market so we would like to compare to set index by the following equations. I will use equation (1),(3),(4),(5) at the empirical test. Model (2) is used to calculate Model (3), (4), (5). From Graph 1 is the reason why I use dependent variable (3), (4), (5) which I will explain later. Up from model (1) variable is  $fdtipo$ .  $R_{10,1}$  from model (3) variable is  $day010d1$ .  $R_{80,10}$  from model (4) variable is  $day080d10$ .  $R_{100,1}$  from model (5) variable is  $day0100d1$ .

$$\text{Up} = \text{initial return, underpricing}^5 = \ln I = \left( \frac{P_1}{P_0} \right) \quad -(1)$$

$$R_{n,k} = \left[ \left( \frac{P_n}{P_k} \right) - \left( \frac{S_n}{S_k} \right) \right] + 1 \quad -(2)$$

$$R_{10,1} \quad -(3)$$

$$R_{80,10} \quad -(4)$$

$$R_{100,1} \quad -(5)$$

Where,

$P_0 = \text{Offering Price(Primary market)}$

$S_n = \text{SET index close price same date as } P_n$

$S_k = \text{SET index close price same date as } P_k$

$P_n = \text{Stock price sold at day n}$

---

<sup>5</sup> This research do not include SET index in underpricing because SET might have very low effect on just one day where IPO is one of the most wanted to be bought or sold on that day.

$P_k$  = Stock price bought at day k

$R_{n,k}$  = Market Adjusted Abnormal Returns if buy at day k sell at day n.

#### **4. Empirical Tests**

$$U_p = \beta_0 + \beta_1 AGE + \beta_2 TORR + \beta_3 SIZE + \beta_4 ROE + \beta_5 LEV + \beta_6 \frac{P}{E} + \beta_7 Hotis. \\ + \beta_8 Coldis. + \varepsilon_i \quad - (6)$$

$$R_{n,k} = \beta_0 + \beta_1 AGE + \beta_2 TORR + \beta_3 \log(SIZE) + \beta_4 ROE + \beta_5 LEV + \beta_6 \frac{P}{E} + \beta_7 Hotre. \\ + \beta_8 Coldre. + \beta_9 Hotis. + \beta_{10} Coldis. + \varepsilon_i \quad - (7)$$

$$U_p = \beta_0 + \beta_1 Consump + \beta_2 Financial + \beta_3 Indus + \beta_4 Propcon + \beta_5 Resourc \\ + \beta_6 Service + \beta_7 Tech + \varepsilon_i \quad - (8)$$

From model (6), (7) and (8) I use multiple regression. The analysis is carried out in 3 different style. First style is the relationship between underpricing and expected determinants as you can see from model (6). Second style is the relationship between the short-term return compared with SET index and expected determinants as you can see from model (7). Third style is the relationship between the underpricing and expected determinants as you can see from model (8).

## **5.Results and discussion**

From Table 3, Summary statistics table for dependent variable.

Table 3: Summary Statistics Table

Variable	Obs.	Mean	Std. Dev.	Min	Max
coldreturn	109	0.247706	0.433674	0	1
normalreturn	109	0.495413	0.502288	0	1
hotreturn	109	0.256881	0.438931	0	1
coldissuance	109	0.06422	0.246277	0	1
normalissuance	109	0.376147	0.486655	0	1
hotissuance	109	0.559633	0.498724	0	1
AGRO	109	0.045872	0.210173	0	1
CONSUMP	109	0.018349	0.134829	0	1
FINCIAL	109	0.110092	0.31445	0	1
INDUS	109	0.110092	0.31445	0	1
PROPCON	109	0.311927	0.46542	0	1
RESOURC	109	0.100917	0.302611	0	1
SERVICE	109	0.183486	0.388853	0	1
TECH	109	0.119266	0.325598	0	1
fdtipo	110	1.168559	0.379271	0.706667	3
year	109	2550.156	3.26648	2547	2556
PBV	109	25.34435	225.8866	-31.4589	2361.184
PE	109	22.34679	33.03577	-44.12	254.96
DE	109	4.455604	27.98867	-18.836	291.5658
ROE	109	1.523342	13.11005	-4.19584	136.9868
logSIZE	109	9.366549	0.56788	8.484912	10.99717
AGE	109	16.55963	10.78187	1	58

TORR	109	0.803395	2.85304	-0.82	22.28
------	-----	----------	---------	-------	-------

From Table 4 column 1 independent variable that affect underpricing most by statistically significant 5% is logSIZE with negative correlation with underpricing. D/E ratio is 10% statistically significant positively correlated with underpricing. This result might be due to the ability to get more asset using less equity, it might show that bankers see the ability to get the money back so same as investors. The rest variable, I will list from most statistically significant to least statistically significant. Hotissuance return is lower than normalissuance. TORR is positively correlate with underpricing. coldissuance return is lower than normalissuance. AGE is positively correlate with underpricing ROE is negatively correlate with underpricing. PE is negatively correlate with underpricing which is the same as most of the previous research that I wrote on literature review however not significant for this research.

Table 4: Multiple regression

	(1)	(2)	(3)	(4)
Variables	fdtip0	day010d1	day080d10	day0100d1
AGE	0.003 (0.003489)	-0.002 (0.001319)	-0.002 (0.002932)	-0.003 (0.003751)
logSIZE	-0.194**** (0.097623)	0.006 (0.022664)	-0.056 (0.085864)	-0.027 (0.093542)
ROE	-0.017 (0.0334)	-0.016 (0.028141)	-0.068* (0.05198)	-0.092* (0.07088)
DE	0.015**** (0.008397)	-0.005 (0.004375)	0.004 (0.010599)	-0.001 (0.013192)
PE	-0.0004299 (0.00098)	-0.0001401 (0.000468)	6.96E-06 (0.001324)	-0.00043 (0.001396)
PBV	-0.001 (0.002377)	0.001 (0.00182)	0.003 (0.003517)	0.005 (0.004913)

TORR	0.011	0.003	0.01	0.012
	(0.009803)	(0.003874)	(0.009624)	(0.012372)
coldissuance	-0.119	-0.088****	-0.001	-0.077
	(0.120814)	(0.039256)	(0.14366)	(0.172314)
hotissuance	-0.174**	-0.022	-0.126**	-0.142***
	(0.106365)	(0.028583)	(0.077283)	(0.089897)
coldreturn		-0.049**	-0.054	0.125*
		(0.032807)	(0.081112)	(0.09542)
hotreturn		-0.036	0.097	0.058
		(0.035917)	(0.101974)	(0.110444)
_cons	3.032*****	0.976*****	1.687*****	1.456
	(0.970401)	(0.210824)	(0.797195)	(0.877541)
R2	0.09	0.09	0.07	0.08
N	109	109	109	109

---

Robust standard errors in parenthesis

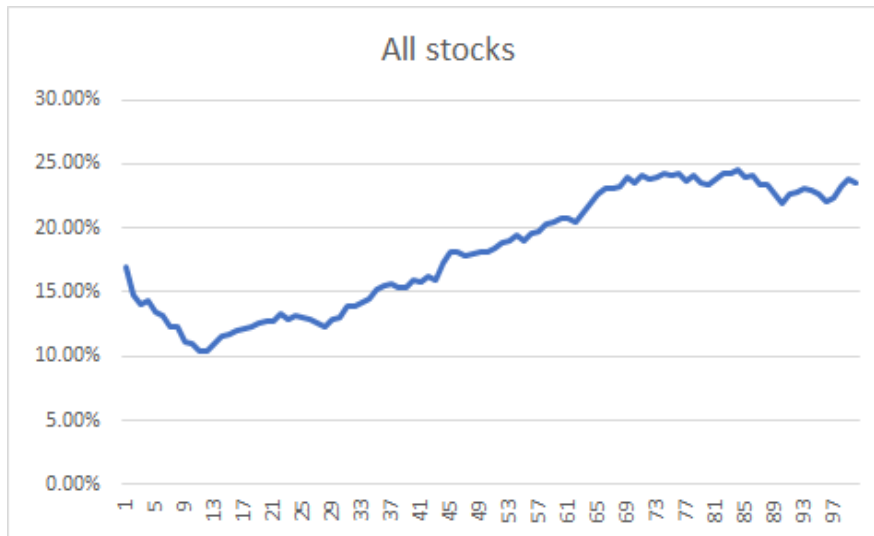
\* p<0.05; \*\* p<0.01

\*\*\*\*\* p<0.01; \*\*\*\* p<0.05; \*\*\* p<0.10; \*\* p<0.15; \* p<0.20

From Graph 1, after underpricing on first day. I noticed that price of IPO stock drops from day1 closing price to about day 10 closing price. So I run regress day10 closing price minus day 10 closing price on table 3 to see which independent variable affect most.

The result from table 4 column 2 indicates that coldissuance is negative correlation with 95% confidence level. In fact, the problem is number of total number of coldissuance is only 7. This sample size is quite low and may not be 95% confidence level if number of sample size is higher. The interesting part for Table 4 is that cold return get even worse return after 10 days of trading at 85% confidence level.

Graph 1: This graph shows equal weight average return of all stocks using model (2) minus 1.



The most interesting part for this research is that from Graph 1, you can see that in about day 10 and day 80 is the lowest and highest return. If you buy stock at day 10 and sell at day 80. In theory, you will get higher return than SET if you bought 109 stocks. However, I would like to know more which factor affect greater return. Since most of issuance price is quite privilege, hard to get and only few people get those. This way we can profit after issuing price.

Unexpected results from Table 4 column 3 show that there is no independent variable which have more than 90% confidence level. However hot issuance is 85% confidence interval different from normalissuance. So lower the number of issuance in a quarter would get higher return. Which the reason might be lower number of issuance makes investors less choice to choose then demand would flow in more to few stocks.

From Table 4 column 4, data shows that even you did not buy every stock from day 10 which is the sweet spot to buy IPO stocks. Instead, buy at day 1 and sold at day 100 could also get higher profit than SET index. First, you should avoid the coldreturn stocks as much as possible since there is 80% confidence interval that you will get less profit than normal return. Higher ROE will lower the price ant 80% confidence interval. Hot issuance will get less return than normal issuance with 85% confidence interval. With hotreturn, you can get most profit only if you buy every 109 stocks. If you randomly buy some of the hot return, there is no sure for better return since confidence level is too low.

From Table 5, RESOURC is 99% confidence level with higher underpricing than AGRO. But for highest underpricing is FINCIAL with 90% confidence level.

The results from Table 4 column 1, Table 4 column 2, Table 4 column 3, Table 4 column 4 and Table 5 column 1 show R-square are equal to respectively. It implies that these independent variables cannot explain well to dependent. Variable for first reason is number of observation is quite low and price movement of each stock is quite scattered.

From Table 4, result of P/E is not significant might due to these factors. A company will normally trade at a price-to-earnings (P/E) multiple that is comparable to its peers in the industry in general. The price-to-earnings multiple serves as a basis for valuing the IPO price. However, P/E data I collected consist of some outliers which affect the significant level and. Lowest P/E is -44.12 and highest is 254.96. Also due to many unusual revenue or one-time revenue which does not come from real operation, for example, debt restructuring decreases confidence level because most investor do not care about unusual revenue.

Table 5: Multiple regression, fdtipo is dependent variable and Industry type is independent variable

Industry type	fdtipo
CONSUMP	0.096 (0.1021057)
FINCIAL	0.314 (0.1589361)
INDUS	0.069 (0.0956662)
PROPCON	0.071 (0.0732739)
RESOURC	0.215** (0.0819041)
SERVICE	0.227 (0.1146447)
TECH	0.024 (0.0493394)
_cons	1.036** (0.0301231)
R2	0.07
N	109

Robust standard errors in parenthesis  
 \* p<0.05; \*\* p<0.01

## **6. Conclusion**

Empirical evidence suggests that FINCIAL sector would get highest underpricing with 90% confidence interval. Another factor that negatively affects underpricing is the size of the firm with 95% confidence interval. Ibbotson et al., (1994) and Finkle (1998) shows same result that the smaller size of the firm the higher underpricing rate. D/E is positively related with underpricing with 90% confidence interval. However, Durukan (2002) result shows that with 99% confidence level, D/E has a negative correlation with underpricing. Unlike Zhou and Lao (2012) research said that P/E is negatively correlated with underpricing with high significant level. Surprisingly P/E is negatively related with underpricing but not significant.

With the short run return, buy at day 10 sell at day 80 empirical results shows that Hot issuance should be avoided because you will get less profit than normal issuance at 85% confidence level. Moreover, you will get less money or lose money by buying at day 1 sell at day 100 with hot issuance at 90% confidence level.

Since the number of observation is quite low. If one of the results shows that confidence level is very low, but there is a chance to get profit, you should buy the stock that one variable affects positive return on stocks. Such as buy at day 10 sell at day 80 and buy at day 1 sell at day 100 will get a higher return than the market by investing only if you buy every hot return stocks. And also avoid normal return and cold return. You can see more information (see from Appendix A to Appendix Q) if you would like diversify and buy group of IPO stocks altogether and don't care much about individual stock movement. Also, readers should remind that this result is limited with a small number of sample, 109 number of stock. The behavior of stock fluctuation changes over time. For example, underpricing start to decrease as time passes as I wrote on literature review.

## **6.Reference**

- Allen, D. E., Morkel-Kingsbury, N. J., & Piboonthanakiat, W. (1999). The long-run performance of initial public offerings in Thailand. *Applied Financial Economics*, 9(3), 215-232.
- Banu Durukan, M. (2002). The relationship between IPO returns and factors influencing IPO performance: case of Istanbul Stock Exchange. *Managerial Finance*, 28(2), 18-38.
- Castle Point Funds Management. (2016). First Day IPO Performance. Retrieved from <http://www.castlepointfunds.com/first-day-ipo-performance>[Accessed 25 May 2018]
- Espenlaub, S., Gregory, A. and Tonks, I. (2000), 'Re-assessing the Long-term ,Underperformance of UK Initial Public Offerings', *European Financial ,Management*, 6, pp.319-342.
- Gompers, P. A., & Lerner, J. (2003). The really long-run performance of initial public offerings: The pre-Nasdaq evidence. *The Journal of Finance*, 58(4), 1355-1392.
- Helwege, J., & Liang, N. (2001). Initial Public Offerings in Hot and Cold markets, Working paper, Ohio State University
- Helwege, J., & Liang, N. (2004). Initial Public Offerings in Hot and Cold Markets, *The Journal of Financial and Quantitative Analysis*. Vol. 39, No. 3 (Sep., 2004), pp. 541-569
- Ibbotson, R. G., & Jaffe, J. F. (1975). "Hot issue" markets. *The journal of finance*, 30(4), 1027-1042.
- Keloharju, M. (1993). The winner's curse, legal liability, and the long-run price performance of initial public offerings in Finland. *Journal of Financial Economics*, 34(2), 251-277.
- Kim, J. B., Krinsky, I., & Lee, J. (1995). The aftermarket performance of initial public offerings in Korea. *Pacific-Basin Finance Journal*, 3(4), 429-448.
- Kunz, Roger M. & Aggarwal, Reena, 1994 "Why initial public offerings are underpriced: Evidence from Switzerland," *Journal of Banking & Finance*, Elsevier, vol. 18(4), pages 705-723, September.
- Levis, M., 1993, "The Long-Run Performance of Initial Public Offerings: The UK Experience 1980-1988," *Financial Management* 22, 28-41.

Liu, X., & Ritter, J. R. (2011). Local underwriter oligopolies and IPO underpricing. *Journal of Financial Economics*, 102(3), 579-601.

Loughran, T., & Ritter, J. R. (1995). The new issues puzzle. *The Journal of finance*, 50(1), 23-51.

Ritter, J. R. (1984). The "hot issue" market of 1980. *Journal of Business*, 215-240.

Ritter, J. R., & Welch, I. (2002). A review of IPO activity, pricing, and allocations. *The Journal of Finance*, 57(4), 1795-1828.

Venkatesh, S., & Neupane, S. (2005). Does ownership structure effect IPO underpricing: Evidence from Thai IPOs. *Corporate Ownership & Control / Volume 3, Issue 2, Winter 2005-2006*.

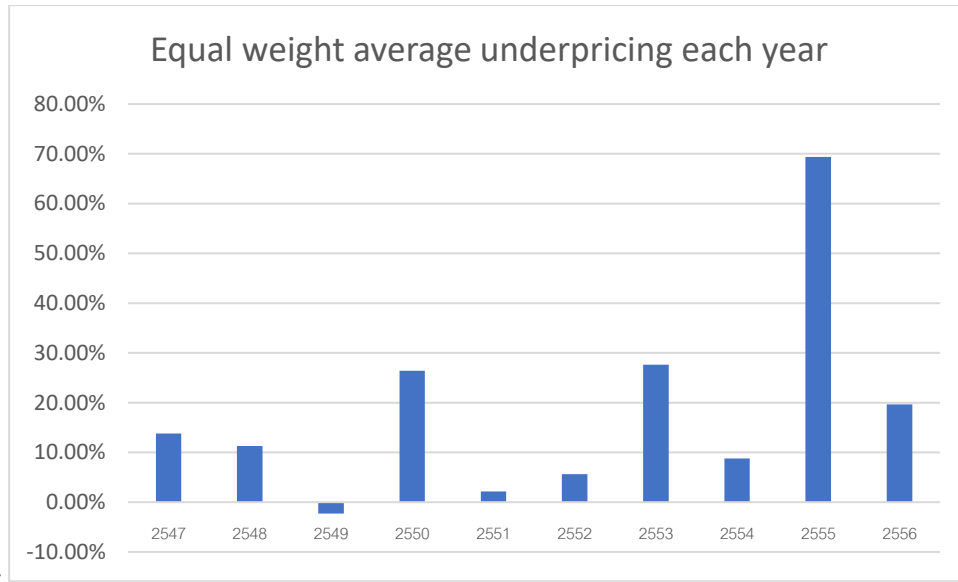
Zhou, J., & Lao, L. J. (2012). Analysis of influencing factors of IPO underpricing in ChiNext. *Physics Procedia*, 33, 846-851.

นางสาวณัฐมา พิมพ์สกุล, 2010, “ปรากฏการณ์ Fads Hypothesis ในหลักทรัพย์ที่เสนอขายต่อสาธารณชนครั้งแรก : กรณีศึกษาหลักทรัพย์ในประเทศไทย” Available at: <http://digi.library.tu.ac.th/thesis/ac/0930/title-references.pdf>

[Accessed 25 May 2018]

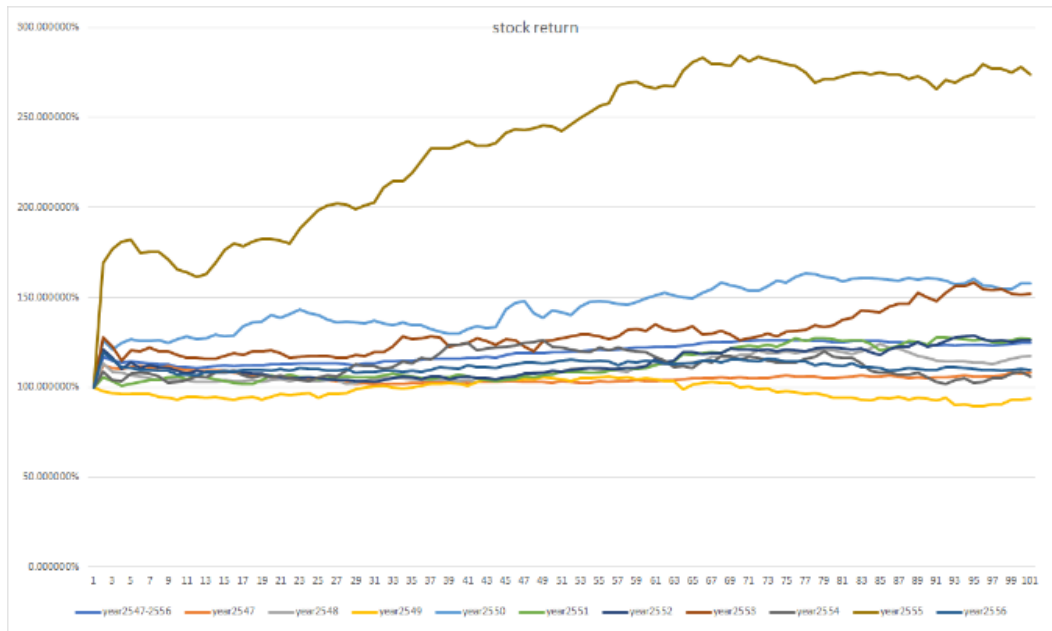
## Appendix A

Chart 1: Equal weight average underpricing each year.



## Appendix B

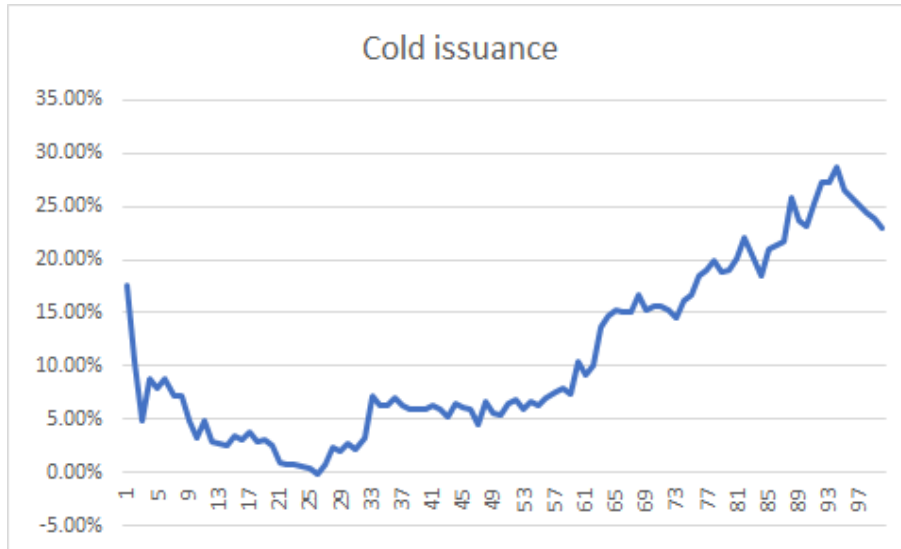
Graph 2: Shows extraordinary return of stock each year from SET index using model (2) to calculate return from day 1 to day 100



## Appendix C

Graph 3: This graph shows equal weight average return of cold issuance stock using model (2) minus

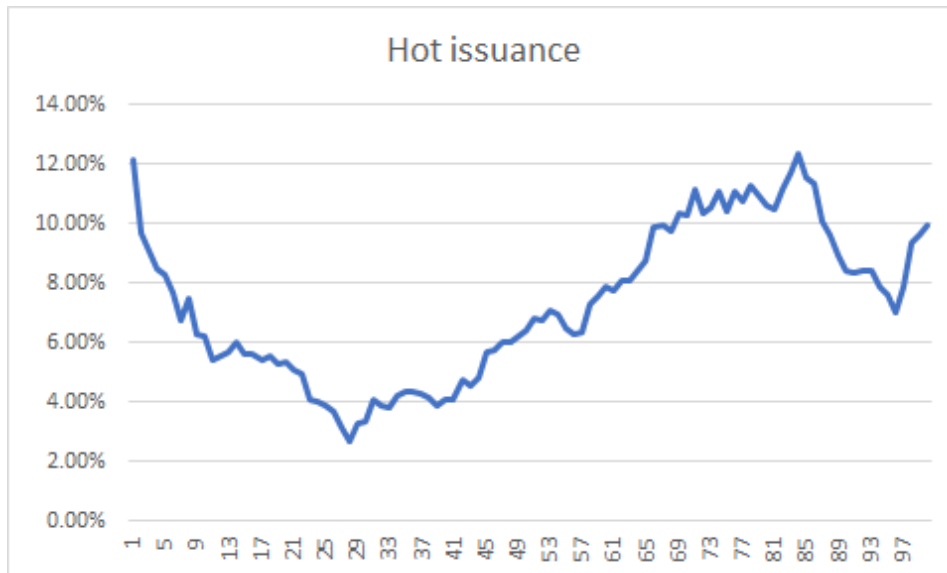
1.



## Appendix D

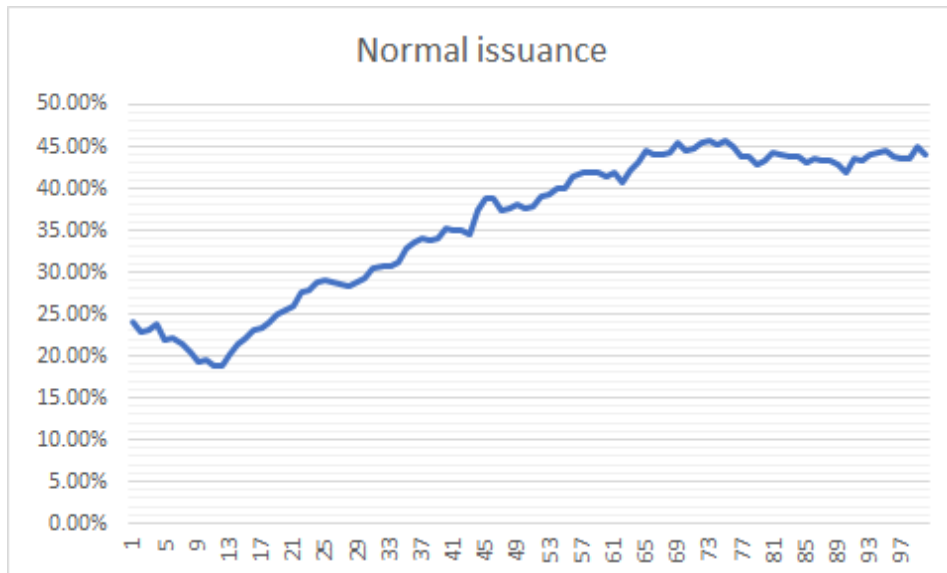
Graph 4: This graph shows equal weight average return of hot issuance stock using model (2) minus

1.



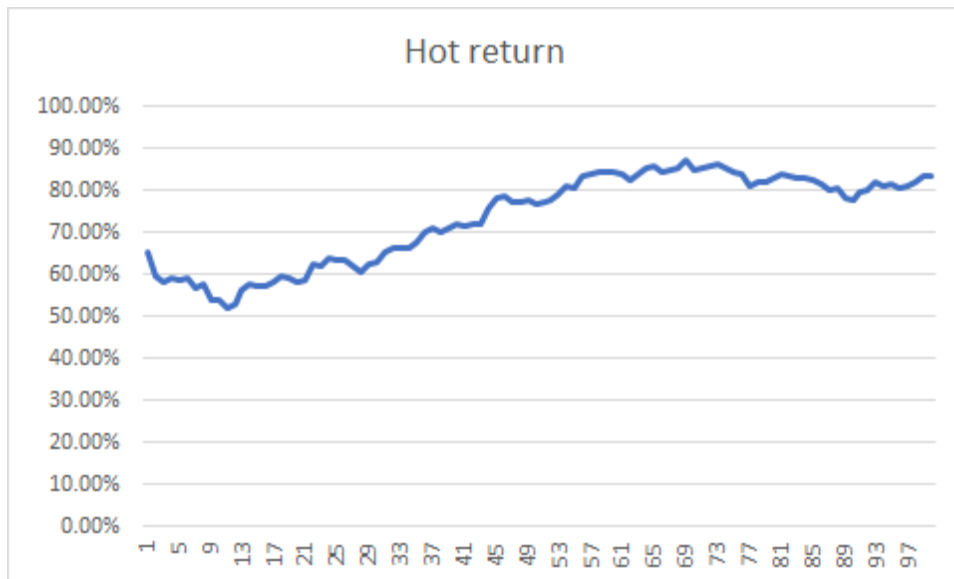
## Appendix E

Graph 5: This graph shows equal weight average return of normal issuance stock using model (2) minus 1.



## Appendix F

Graph 6: This graph shows equal weight average return of hot return stock using model (2) minus 1.



## Appendix G

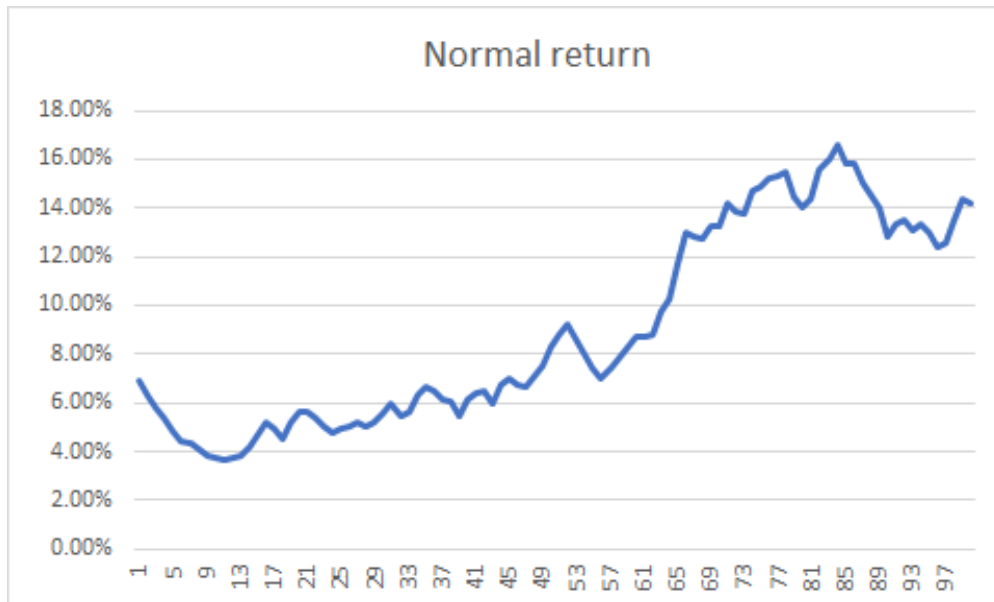
Graph 7: This graph shows equal weight average return of cold return stock using model (2) minus 1.



## Appendix H

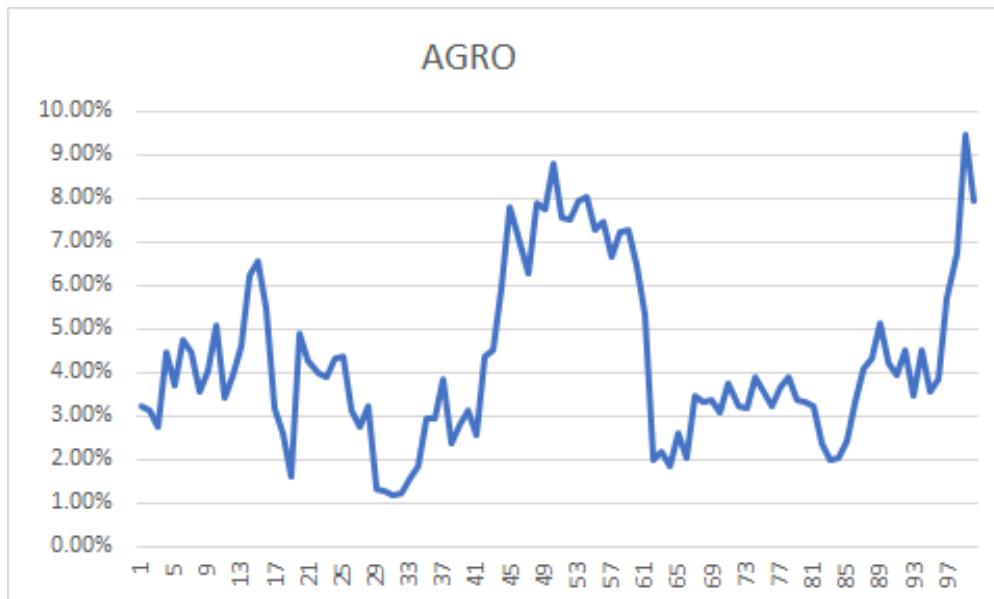
Graph 8: This graph shows equal weight average return of normal return stock using model (2) minus

1.



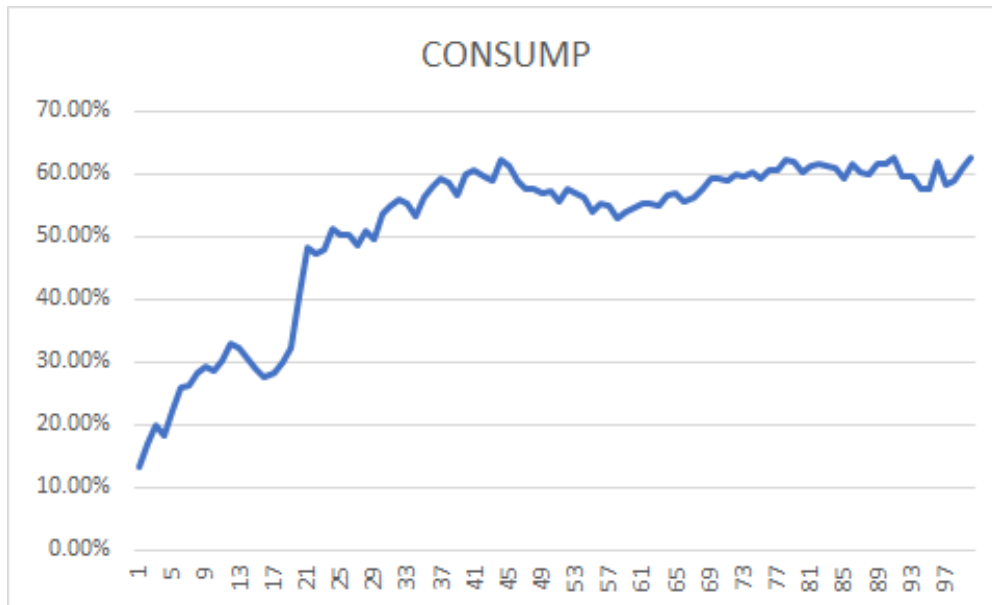
## Appendix I

Graph 9: This graph shows equal weight average return of AGRO type stock using model (2) minus 1.



## Appendix J

Graph 10: This graph shows equal weight average return of CONSUMP type stock using model (2) minus 1.



## Appendix K

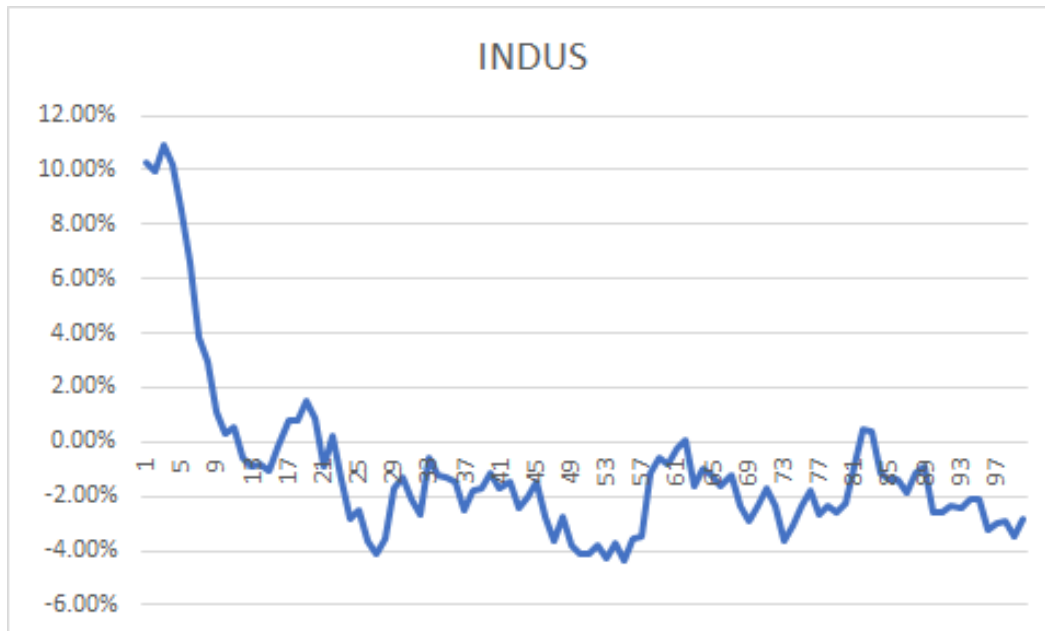
Graph 11: This graph shows equal weight average return of FINCIAL type stock using model (2) minus 1.



Appendix L

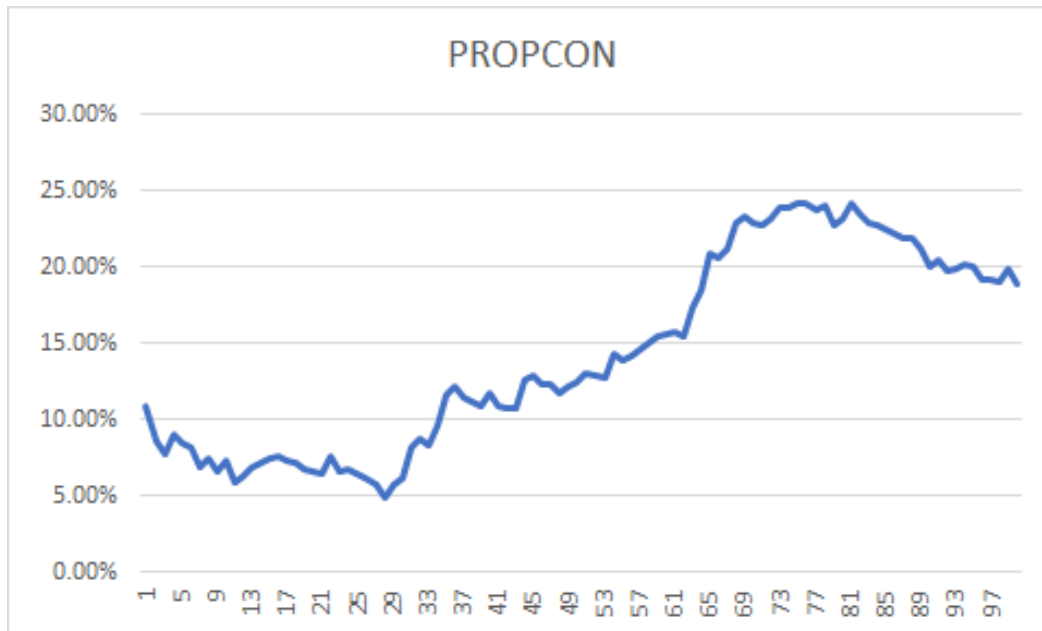
Graph 12: This graph shows equal weight average return of INDUS type stock using model (2) minus

1.



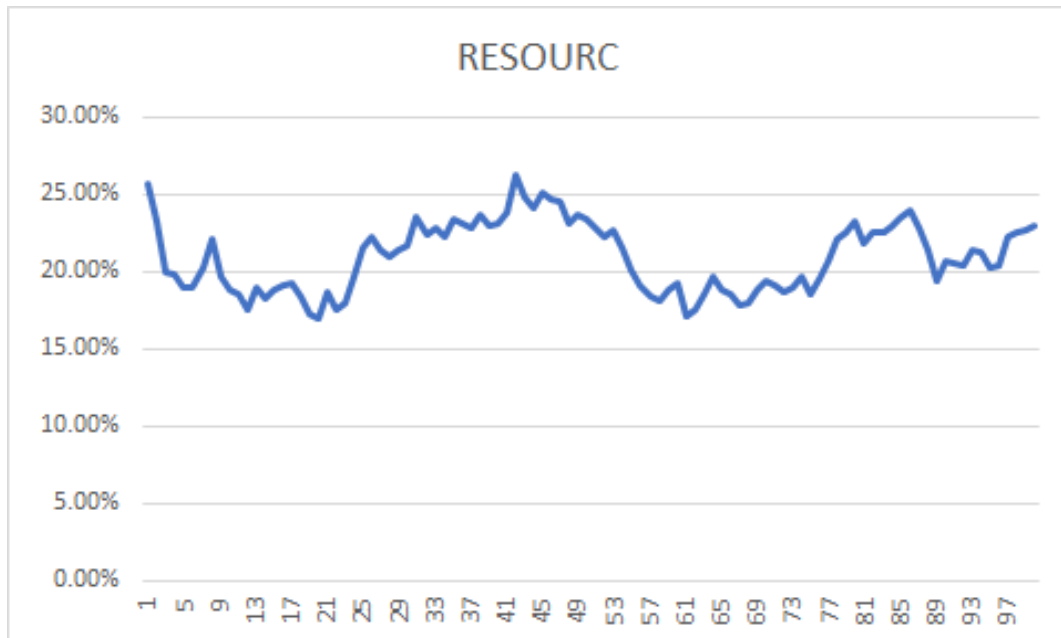
Appendix M

Graph 13: This graph shows equal weight average return of PROPCON type stock using model (2) minus 1.



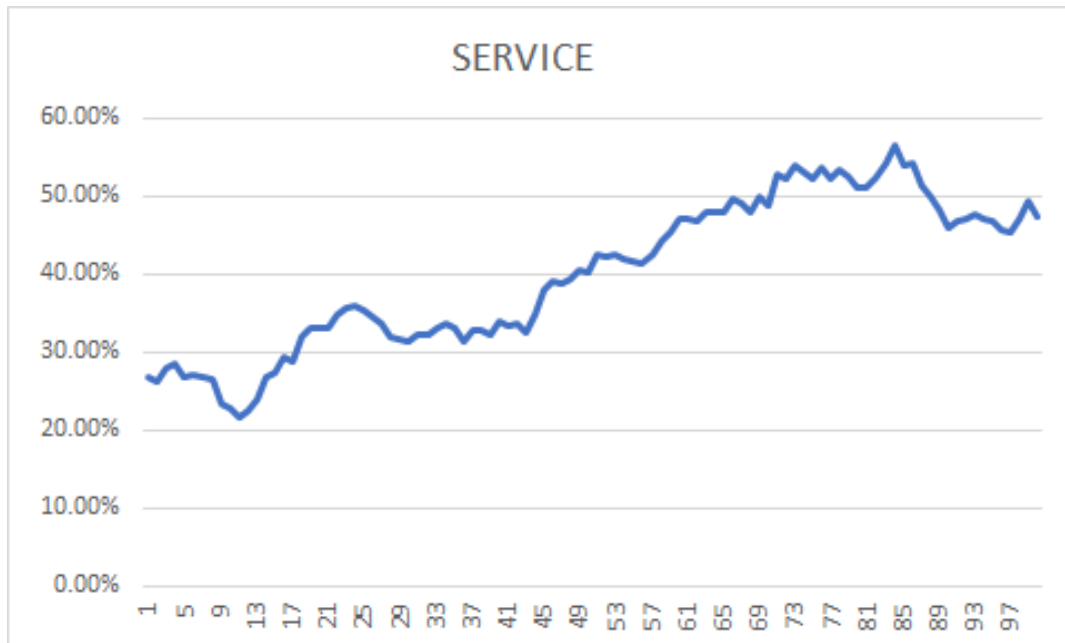
Appendix N

Graph 14: This graph shows equal weight average return of RESOURC type stock using model (2) minus 1.



## Appendix O

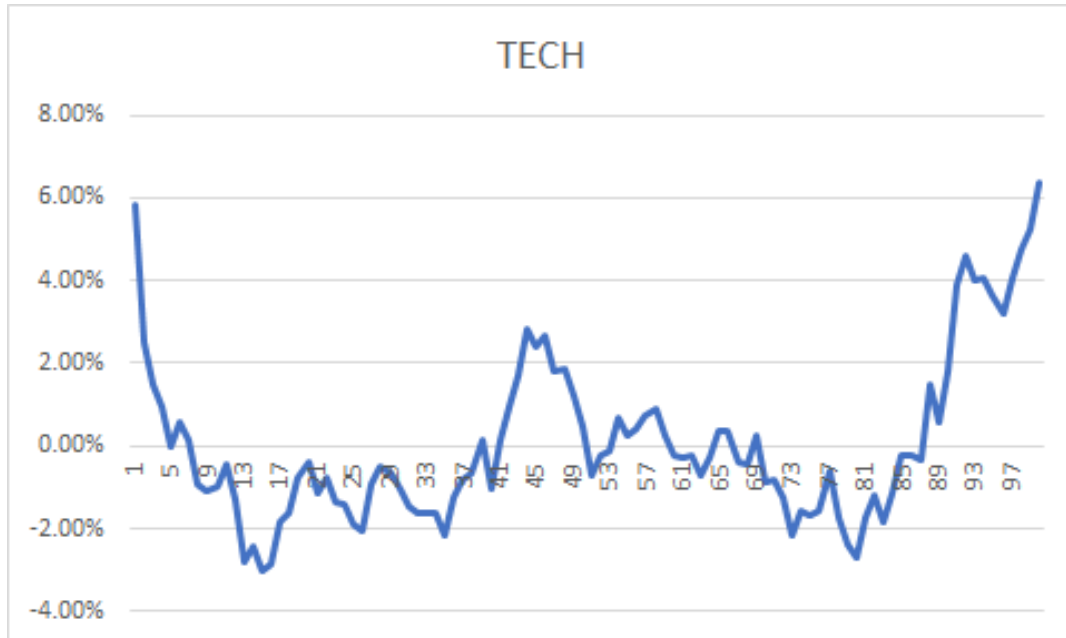
Graph 15: This graph shows equal weight average return of SERVICE type stock using model (2) minus 1.



Appendix P

Graph 16: This graph shows equal weight average return of TECH type stock using model (2) minus

1.



## Appendix Q

Table 6: Summary Statistics of each day return calculated by using model 2.

Variable	Obs	Mean	Std. Dev.	Min	Max	Variable	Obs	Mean	Std. Dev.	Min	Max
day01	109	1.169868	0.380731	0.71293	2.995212	day056	109	1.195404	0.670113	0.47251	5.036001
day02	109	1.147095	0.373105	0.71924	3.114877	day057	109	1.197949	0.673379	0.46984	4.967854
day03	109	1.140664	0.388944	0.70113	3.438831	day058	109	1.20334	0.673957	0.47066	4.857777
day04	109	1.142933	0.390294	0.6963	3.128175	day059	109	1.204981	0.669125	0.47872	4.611979
day05	109	1.134086	0.381717	0.67564	2.804441	day060	109	1.207074	0.675034	0.48522	4.636378
day06	109	1.132123	0.390566	0.64427	2.875741	day061	109	1.207094	0.683064	0.48997	4.879457
day07	109	1.123425	0.382377	0.61938	2.659521	day062	109	1.204512	0.67706	0.4731	4.816825
day08	109	1.123502	0.382314	0.56426	2.600517	day063	109	1.212644	0.693917	0.46918	4.75582
day09	109	1.110779	0.370586	0.57315	2.604283	day064	109	1.21866	0.703805	0.47342	4.723944
day010	109	1.11007	0.37621	0.58532	2.71355	day065	109	1.226659	0.708597	0.47956	4.672442
day011	109	1.103961	0.361371	0.55598	2.625161	day066	109	1.230262	0.718911	0.49326	4.829292
day012	109	1.104196	0.366615	0.53153	2.640798	day067	109	1.231285	0.723731	0.48928	4.939094
day013	109	1.110284	0.395042	0.55423	2.91434	day068	109	1.232238	0.717855	0.4815	4.846441
day014	109	1.11606	0.409829	0.53028	2.836079	day069	109	1.239174	0.744165	0.46614	4.847954
day015	109	1.116812	0.409515	0.54429	2.835628	day070	109	1.234701	0.731879	0.46639	4.746669
day016	109	1.120227	0.412494	0.5801	2.732258	day071	109	1.240951	0.748321	0.45531	4.665429
day017	109	1.121008	0.416966	0.57199	2.846629	day072	109	1.245216	0.745662	0.44839	4.709262
day018	109	1.123422	0.42438	0.58914	2.750305	day073	109	1.240362	0.748577	0.45327	4.607588
day019	109	1.125676	0.434227	0.56074	2.992678	day074	109	1.242563	0.742499	0.47229	4.626226
day020	109	1.127547	0.426188	0.56639	2.87639	day075	109	1.241384	0.729072	0.47184	4.569102
day021	109	1.12684	0.437698	0.55987	3.023532	day076	109	1.242953	0.721656	0.49985	4.209202
day022	109	1.132744	0.457921	0.56485	2.978418	day077	109	1.237052	0.697102	0.49544	4.122871
day023	109	1.128216	0.462837	0.56002	2.949217	day078	109	1.241246	0.703419	0.47816	4.206705
day024	109	1.131155	0.469802	0.5561	2.919567	day079	109	1.234642	0.704321	0.44525	4.141766
day025	109	1.130878	0.470483	0.55006	3.183684	day080	109	1.234384	0.701785	0.43621	4.296219
day026	109	1.128703	0.469396	0.52775	3.188602	day081	109	1.238198	0.699453	0.43576	4.263501
day027	109	1.125804	0.464556	0.52899	3.035082	day082	109	1.242298	0.712448	0.42921	4.211698
day028	109	1.122991	0.454404	0.53213	2.82521	day083	109	1.242946	0.719815	0.43757	4.183035
day029	109	1.128497	0.463491	0.52063	2.86633	day084	109	1.245723	0.741682	0.4232	4.669049
day030	109	1.130416	0.470669	0.50671	2.818426	day085	109	1.240312	0.717359	0.42375	4.263202
day031	109	1.138945	0.490164	0.49974	2.946726	day086	109	1.240837	0.709816	0.41611	4.204302
day032	109	1.139726	0.494957	0.49011	3.001988	day087	109	1.233102	0.682006	0.40011	3.951504
day033	109	1.141308	0.495082	0.49453	2.992972	day088	109	1.233312	0.674786	0.39469	3.893943
day034	109	1.145364	0.499456	0.48389	2.970273	day089	109	1.226208	0.656525	0.40129	3.806668
day035	109	1.151896	0.512782	0.48862	2.937159	day090	109	1.21988	0.640513	0.39907	3.766533
day036	109	1.155161	0.530441	0.50028	3.337988	day091	109	1.227113	0.653645	0.39186	3.940884
day037	109	1.15639	0.536271	0.49893	3.4178	day092	109	1.227957	0.649994	0.37388	4.113173
day038	109	1.154202	0.53197	0.47638	3.365198	day093	109	1.230375	0.657275	0.37433	4.132858
day039	109	1.153937	0.538579	0.46396	3.478499	day094	109	1.228782	0.658737	0.37727	4.162596
day040	109	1.159266	0.546955	0.45453	3.424958	day095	109	1.226934	0.67472	0.38085	4.311953
day041	109	1.15839	0.539926	0.47239	3.303659	day096	109	1.220712	0.669031	0.37646	4.274819
day042	109	1.161707	0.542014	0.47308	3.314869	day097	109	1.223883	0.668558	0.38805	4.210974
day043	109	1.158723	0.547539	0.47476	3.292201	day098	109	1.23167	0.673876	0.39137	4.164934
day044	109	1.172225	0.574733	0.47577	3.316057	day099	109	1.238228	0.684144	0.37024	4.107978
day045	109	1.181735	0.589172	0.48749	3.427844	day0100	109	1.235841	0.678325	0.37384	4.133729
day046	109	1.181527	0.593054	0.48161	3.468157	day010d1	109	0.952962	0.135513	0.647374	1.347098
day047	109	1.177748	0.583388	0.48279	3.476504	day020d1	109	0.965186	0.193359	0.645416	1.474994
day048	109	1.179545	0.584644	0.48594	3.448127	day040d1	109	0.981327	0.278578	0.528991	1.922883
day049	109	1.181368	0.590735	0.47026	3.524163	day060d1	109	1.011282	0.346987	0.50446	2.356289
day050	109	1.181259	0.583771	0.47192	3.466254	day080d1	109	1.044633	0.447706	0.438433	3.724412
day051	109	1.184825	0.593554	0.46501	3.462268	day080d20	109	1.067459	0.313791	0.639417	2.813203
day052	109	1.188646	0.605373	0.46089	3.752614	day080d10	109	1.081009	0.35569	0.566374	2.894421
day053	109	1.190637	0.618845	0.46595	4.002812	day0100d80	109	1.005787	0.117366	0.704938	1.531718
day054	109	1.194091	0.6297	0.46382	4.079408	day0100d1	109	1.04493	0.414856	0.377742	2.62548
day055	109	1.190356	0.633095	0.47626	4.361201						

