Journal of International Business and Economics
September 2014, Vol. 2, No. 3, pp. 43-55
ISSN: 2374-2208 (Print), 2374-2194 (Online)

Published by American Research Institute for Policy Development
DOI: 10.15640/jibe.v2n3a3
URL: http://dx.doi.org/10.15640/jibe.v2n3a3

Expensive Goods, Inexpensive Equities: An Explanation of "IPO Hot Time" from Market Condition Perspective

Xiaomin Guo[1]

Abstract

Hot initial public offering (IPO) time is commonly defined as the time period during which the degree of issuance underpricing is higher or number of issuance is large. Such definition generates the dilemma of why private firms are willing to leave money on the table. This paper identifies the hot and cold IPO time using synchronous macroeconomic and financial market conditions and provides a new explanation for this dilemma. I find that the hot time of IPO is positively affected by business cycle and systematic risk expectation; however, the idiosyncratic risk carried by equity sector is not influential to the IPO return expectation. The degree of IPO discount is related to the market condition closer than to the firm fundamental values and operating risk. These findings are consistent with the empirical evidence of firms' willingness to discount issuance during expansionary business cycles, regardless of the reduction of funds raised and the higher leverage risk.

Keywords: IPO; discount; hot time; underpricing; systematic risk

1. Introduction

The meaning of hot issuances in initial public offering (IPO) is twofold. Individual hot equity issuance, which is often regarded as the popular stock during the road show, refers to the oversubscribed equity that will potentially generate high returns for the underwriter and primary market stake holders.

[1] PhD, Visiting Assistant Professor of Finance, College of Business, Pacific University, 2043 College Way, Forest Grove, OR 97116, USA. Email: xguo@pacificu.edu, Tel: 503-352-1470, Fax: 503-352-3131

On the other hand, "hot time" of IPO issuanceusually refers to the time during which many privately held firms are crowded together and publicly listed. This paper focuses on the second meaning of hot issuance and redefines the features of IPO hot time.

Previous studies identify IPO hot time in various standards, including first-day return, number of IPO issuance, and IPO trade volume, and investor sentiment. Using the magnitude of first-day return as the standard, Brau and Fawcett (2006) regard a hot IPO period as having an initial return of greater than 10%; similarly, Ibbotson and Jaffe (1975) defines hot issue as periods in which the average first month performance and aftermarket performance of new issues are abnormally high; consistent with such setting, Khanna, Noe, and Sonti (2008) propose that if issues are underpriced on average and that underpricing is significantly higher in a period, such period is regarded as the hot IPO time.

Using the number of IPO issuance as the standard to justify IPO hot time, Pástor and Veronesi (2005) identify the "hot markets" of IPO as the markets with the top quartile of the moving average of the number of issuance; similarly, Ritter (1984) shows that the strength of IPO price anomaly patterns vary over time, with both the initial price increase and subsequent underperformance more significant in "hot" periods of high IPO volume. Two other representative methods of defining hot time of IPO are Derrien (2005), who set up the "hot issue" markets as the ones with high IPO trade volumes; and Ljungqvist, Nanda, and Singh (2006), who build their model by defining a "hot" IPO market as the one characterized by the presence of optimistic investors.

These aforementioned criteria of identifying hot time or hot market of IPO, including first-day return, number of IPO issuance, IPO trade volume, and investor sentiment, suggest the exogenous and endogenous reasons of IPO hot time. For example, Alti (2005) uses information spillovers to explain the high sensitivity of going public decision to IPO market conditions. He suggests that high offer price realizations for pioneers' IPOs better reflect investors' private information and trigger a larger number of subsequent IPOs. The latter are more dependent to the expected return of the market and more contingent to exogenous market conditions. In addition, Helwege and Liang (2004) compare IPOs over cycles and find that hot and cold IPO markets more likely reflect greater investor optimism.

Some earlier studies conclude that the IPO decision is made independently by firms and is based on the firm's endogenous fundamental conditions. For instance, Chemmanur and Fulghieri (1999) conclude that the equilibrium timing of the going-public decision is determined by the firm's trade-off between minimizing the duplication in information production and avoiding the risk-premium of venture capitalists.

Consistent to this proof of market climate independence, Zingales (1995) finds that if the potential buyer is expected to increase the value of cash flow rights, then the initial owner can use an IPO to extract a portion of the trade surplus without having to bargain with the buyer over it. Therefore, the IPO timing is more dependent to the fundamental of the firm and independent to the environment.

Nevertheless, the conclusions that hot time of IPO is caused by exogenous reasons lead to the well-known yet not well-solved dilemma: if firm equities are more underpriced during hot time, why are firms still willing to be listed in that period? On the opposite side, the conclusions that IPOs are firm-specific decisions based on endogenous firm fundamentals reasons seem to conflict with the fact that firms are crowded together to be listed in a narrow time window period. Khanna, Noe, and Sonti (2008) document that a sudden increase in demand for IPO financing can increase the compensation of IPO screening labor and cause reduced screening and encouraging sub-marginal firms to enter the IPO market. While they use investment bank compensation to explain the increased underpricing during hot markets, I try to identify other reasons as IPO driving force, rather than the investment banks which only take the role of accelerators.

This paper, however, defines and explains hot time of IPO from the macroeconomic condition and non-systematic risk perspective, which few previous articles focus on. If the firms, which are underpriced in hot IPO time, are willing to sell themselves in the market, then additional benefits must be provided to the firm to compensate such loss. I find that this compensation is the easiness of fund raising from the financial market during the period of ample fund supply and liquidity.

I first define the four endogenous variables that can characterize hot time of IPO, which are the primary market underpricing, number of IPO issuance, IPO trade volume, and investor sentiment.

Then I use monthly and annual U.S. equity market IPO data from 1960 to 2011 to identify the relationships between the hot time of IPO and the market conditions, including macroeconomic environment, required return due to systematic risk, and non-systematic risk premium.

The regression results confirm the endogeneity among the four variables which are used in previous literatures to identify the hot periods of IPO.

I find that investor optimistic sentiment does not necessarily lead to a greater numbers of IPOs, *i.e.*, firms do not decide to go public simply because investors will pursue their equities and push the price to a higher level. IPOs enter their hot time when the economy enters the inflationary cycle and when the required return of systematic risk of the entire financial market is higher. However, the hot IPO period is not related to the existing equity market performance and the current market return. To sum up, firms decide to go public when the economy is at a good time, instead of when the equity market is at a good time.

This conclusion does not contradict the higher underpricing in this period. My study suggests that greater primary market discount and greater number of issuance are the results of the hot IPO time, not the reason. During the expansionary period of the whole economy, firms are more likely to raise funds due to the easy access to capital. In the competition of attracting capital, firms have to generate better IPO returns by accepting lower underwriting price. This objectively leads to the greater primary market discount and greater number of issuance.

2. Data and Method

I perform regressions using the number of IPOs (NIPO)[2] annual data from 1960 to 2000 and all other variables are monthly data from January 1960 to December 2011. The annual number of IPOs data is more persistent in the long term observations and is less sensitive to short run demand and supply shock.

[2]The number of offerings excludes Regulation A offerings (small issues, raising less than $1.5 million during the1980s), real estate investment trusts (REITs), and closed-end funds, but includes American Depository Receipts(ADRs). Data are from Roger G. Ibbotson and Jeffry F. Jaffe "'Hot Issues' Markets," *Journal of Finance*(September 1975) for 1960-1970; Jay R. Ritter, "The 'Hot Issues' Market of 1980," *Journal of Business* (April1984) for 1971-1982; *Going Public: The IPO Reporter* for 1983-1984; and Investment Dealer's DigestInformation Services and Securities Data Company for 1985-1998.

However, the monthly business performance data is more sensitive to the changes of market expectation.

I use monthly consumer price index (CPI)[3], rather than GDP, as the indicator of macroeconomic cycle, because the monthly U.S. GDP data are based on simulation and less precise.

The 13-week Treasury bill rate (RATE)[4] is incorporated as the proxy of systematic risk magnitude and investor sentiment of financial market expected return. The return of Standard & Poor 500 index (SP)[5] reflects the non-systematic risk for the equity-specific financial industry sector and the risk premium of IPOs based on the macroeconomic condition. The primary market underpricing (PMUP)[6] is derived from the first day return as follows, assuming that the end of first day return is the market equilibrium price and the fair price of the firm on secondary market.
$Primary\ Market\ Price \times (1 + First\ Day\ Return) = End\ of\ the\ First\ Day\ Price$

$$Primary\ Market\ Underpring = \frac{End\ of\ the\ First\ Day\ Price - Primary\ Market\ Price}{End\ of\ the\ First\ Day\ Price} = \frac{First\ Day\ Return}{1+First\ Day\ Return} \quad (1)$$

The percentage of equities greater than file price median (PGFM)[7] is the percentage of IPOs that are priced above the midpoint of the original file price range, and excludes IPOs with an original file price range midpoint of below $8.

The trade volume excludes closed-end funds, REITs, acquisition companies, offer prices below $5, ADRs, limited partnerships,units, banks and S&Ls, and IPOs not listed on CRSP. Trade volume (VOL)[8]is the sales value of the IPO equities.

---

[3] Seasonally adjusted, data source: FRED. Federal Reserve Bank of St. Louis.
[4] Data source: FRED. Federal Reserve Bank of St. Louis.
[5] Data source: FRED. Federal Reserve Bank of St. Louis.
[6]Initial returns are computed as the percentage return from the offering price to the end-of-the-calendar month bid price, less the market return, for offerings in 1960-76. For 1977-99, initial returns are computed as the percentage
return from the offering price to the end-of-the-first-day bid or transaction price, without adjusting for market movements. Data are from Ibbotson and Jaffe (*op. cit.*) for 1960-70, Ritter (*op. cit.*) for 1971-82, and prepared by the authors for 1983-1992. Data for 1993-2000 are prepared by Jay R. Ritter. This foot note is retrieved from Jay R. Ritter website: http://bear.warrington.ufl.edu/ritter/
[7] Data source: Jay R. Ritter website: http://bear.warrington.ufl.edu/ritter/

I character the hot time of IPO using all the four definitions in the previous literature: first-day return, number of IPO issuance, IPO trade volume, and investor sentiment. The first-day return uses the primary market price as the benchmark, which is inconsistent with the other three measures which employs the secondary market data as benchmark. Therefore I adjust the first-day return to primary market underpricing, which is based on the end of first day price in the secondary market, using equation (1).

The regression variable PMUP serves as the primary market underpricing, which is the consensus of the character of IPO hot time; the percentage of equities greater than file price median (PGFM) serves as proxy of investor sentiment and the presence of optimistic investors; number of IPO (NIPO) and trade volume (VOL) are also incorporated in the regressions to represent various criteria of hot time of IPO. Due to the concern of multicollinearity and endogeneity, I gradually exclude these four measures of hot time of IPO from equation (2) to (7) to identify the impact of macroeconomic and market conditions. I employ the White's heteroskedasticity consistent standard errors procedure to control the different data scope problem. Equations (2)and (3) use monthly data and equations (4) to (7) uses annual data.

$$PMUP_t = \alpha_0 + \alpha_1 PGFM_t + \alpha_2 CPI_t + \alpha_3 RATE_t + \alpha_4 SP_t + \epsilon_{\alpha,t} \quad (2)$$

$$PGFM_t = \beta_0 + \beta_1 CPI_t + \beta_2 RATE_t + \beta_3 SP_t + \epsilon_{\beta,t} \quad (3)$$

$$NIPO_t = \gamma_0 + \gamma_1 VOL_t + \gamma_2 PMUP_t + \gamma_3 PGFM_t + \gamma_4 CPI_t + \gamma_5 RATE_t + \gamma_6 SP_t + \epsilon_{\gamma,t} \quad (4)$$

$$VOL_t = \delta_0 + \delta_1 PMUP_t + \delta_2 PGFM_t + \delta_3 CPI_t + \delta_4 RATE_t + \delta_5 SP_t + \epsilon_{\delta,t} \quad (5)$$

$$PMUP_t = \varepsilon_0 + \varepsilon_1 PGFM_t + \varepsilon_2 CPI_t + \varepsilon_3 RATE_t + \varepsilon_4 SP_t + \epsilon_{\varepsilon,t} \quad (6)$$

$$PGFM_t = \theta_0 + \theta_1 CPI_t + \theta_2 RATE_t + \theta_3 SP_t + \epsilon_{\theta,t} \quad (7)$$

[8]Gross proceeds data come from various issues of the *S.E.C. Monthly Statistical Bulletin* and *Going Public: The IPO Reporter* for 1960-1987, and Securities Data Co. for 1988-2000. For the gross proceeds calculations from 1986-2000, best efforts and ADRs are excluded. This foot note is retrieved from Jay R. Ritter website: http://bear.warrington.ufl.edu/ritter/

The theory of corporate capital structure suggests that the primary purpose of firm public list is fund raising. Therefore, the expansionary cycle of the economy, during which ample capital supply presents in financial markets, should result in the hot time of IPO, regardless to the different model specifications that latter is measured by price discount, number of firms, trade volume, or investor sentiment. The 13-week Treasury bill rate represents the systematic risk and the expectation of financial market of the benchmark required return.

When the economy heads recession, such expectation is lower than the inflationary cycle and should cool down the hot time of IPO. The return of Stand & Poor 500 index serves as the non-systematic risk and the expectation of the required compensation of the equity market risk premium.

3. Results and Discussion

The regression results of equations (2) to (7) are presented in Tables 1, 2, and 3. Four variables that can characterize hot time of IPO, the PMUP, PGFM, NIPO, and VOL, are endogenous factors of hot time of IPO. Therefore, regressions excluding such mutual endogeneity truly present the relationship between the hot time of IPO and the market conditions, including macroeconomic environment (CPI), required return of systematic risk (RATE), and non-systematic risk premium (SP).

Most regression results confirm the endogeneity among PMUP, PGFM, NIPO, and VOL, which are four different criteria used in previous literatures to identify the hot periods of IPO. Using monthly U.S. equity market data, the pairwise linear regression of PMUP and PGFM exhibit significant and positive coefficients of 0.067157 as demonstrated in Table 1. Consistently, in Table 2, using annual U.S. equity market data, the pairwise linear regressions of NIPO and PGFM, NIPO and VOL, VOL and PMUP, and VOL and PGFM exhibit significant and positive coefficients of 1194.633, 0.00776, 79307.98, and 38640.89, respectively. The relationship of NIPO and PMUP is not significant, *i.e.*, investor optimistic sentiment does not necessarily cause

This table presents the ordinary least square regression results of equation (2) and (3). The p values of t tests are in parentheses. Primary market underpricing (PMUP) is the U.S. market IPO equity discount, and percentage of equities greater than file price median (PGFM) serves as proxy of investor sentiment and the presence of optimistic investors. The monthly data period is from January 1960 to December 2011.

Table 1: Monthly Market Conditions and IPO Hot Time Characterized by Price Discount and Investor Sentiment

	Equation (2): Dependent Variable							Equation (3): Dependent Variable					
	PMUP	PMUP	PMUP	PMUP	PMUP	PMUP	PMUP	PGFM	PGFM	PGFM	PGFM	PGFM	PGFM
Intercept	0.071159 (0.0000)	0.071392 (0.0000)	0.111445 (0.0000)	0.102044 (0.0000)	0.102429 (0.0000)	0.124877 (0.0000)	0.106966 (0.0000)	0.135637 (0.0000)	0.135459 (0.0000)	0.246849 (0.0000)	0.193307 (0.0000)	0.193133 (0.0000)	0.260563 (0.0000)
PGFM							0.067157 (0.0006)						
CPI	0.000211 (0.0165)	0.000212 (0.0163)	0.000124 (0.1282)					0.000385 (0.0025)	0.000385 (0.0025)	0.000122 (0.3280)			
RATE	0.005886 (0.0011)	0.005879 (0.0011)		0.004425 (0.0068)	0.004410 (0.0069)			0.016039 (0.0000)	0.016041 (0.0000)		0.013111 (0.0000)	0.013113 (0.0000)	
SP	0.039424 (0.7807)			0.046666 (0.7452)		0.039631 (0.7850)		-0.030025 (0.9008)			-0.027524 (0.9086)		-0.032209 (0.8946)

This table presents the ordinary least square regression results of equation (3) and (4). The p values of t tests are in parentheses. Number of IPO (NIPO) is the U.S. market IPO volume. The annual data period is from 1960 to 2000.

	Equation (4): Dependent Variable												
	NIPO	NIPO	NIPO	NIPO	NIPO	NIPO	NIPO	NIPO	NIPO	NIPO	NIPO	NIPO	NIPO
Intercept	271.929 (0.0000)	285.0518 (0.0000)	1.665043 (0.6519)	9.361398 (0.0644)	13.09282 (0.0178)	13.27212 (0.0147)	286.683 (0.0001)	-3.861283 (0.4162)	-8.420022 (0.1029)	7.418225 (0.2237)	8.519705 (0.1467)	2.307533 (0.5817)	-4.960761 (0.3123)
VOL	0.00776 (0.0005)	0.0081 (0.0014)	0.000707 (0.0000)	0.000999 (0.0000)	0.000811 (0.0004)	0.000735 (0.0012)							
PMUP		-122.4679 (0.7589)	8.053925 (0.6785)	2.769989 (0.8816)	11.62363 (0.5392)	17.21595 (0.3647)	519.9277 (0.1968)	55.09244 (0.0220)	43.21788 (0.0671)	46.01608 (0.0247)	49.63924` (0.0123)		
PGFM			1166.59 (0.0000)	1169.684 (0.0000)	1169.686 (0.0000)	1170.821 (0.0000)		1189.804 (0.0000)	1179.146 (0.0000)	1175.169 (0.0000)	1176.121 (0.0000)	1194.633 (0.0000)	1180.192 (0.0000)
CPI				-0.128253 (0.0324)	-0.07246 (0.2731)	-0.036379 (0.5959)			0.10792 (0.0483)	0.133432 (0.0060)	0.159135 (0.0012)		0.133211 (0.0159)
RATE					-1.288065 (0.0981)	-1.564448 (0.0458)				-2.883832 (0.0005)	-3.078011 (0.0002)		
SP						-258.3241 (0.1315)					-398.3333 (0.0403)		

Table 2: Annual Market Conditions and IPO Hot Time Characterized by Volume

This table presents the ordinary least square regression results of equation (3), (4), (5), (6). The p values of t tests are in parentheses. Number of IPO (NIPO) is the U.S. market IPO volume, trade volume (VOL) is the IPO equity sale, primary market underpricing (PMUP) is the U.S. market IPO equity discount, and percentage of equities greater than file price median (PGFM) serves as proxy of investor sentiment and the presence of optimistic investors. The annual data period is from 1960 to 2000.

	Equation (4): Dependent Variable								Equation (5): Dependent Variable				
	NIPO	NIPO	NIPO	NIPO	NIPO	NIPO	NIPO	NIPO	VOL	VOL	VOL	VOL	VOL
Intercept	10.73073 (0.0901)	11.9403 (0.0557)	135.1496 (0.0696)	199.1056 (0.0683)	196.0139 (0.0788)	389.8493 (0.0006)	342.6531 (0.0035)	320.1649 (0.0000)	201.3842 (0.9609)	-7811.411 (0.0884)	-17795.93 (0.0000)	-6994.038 (0.0956)	-6467.187 (0.1187)
PMUP									79307.98 (0.0020)	66488.49 (0.0044)	40480.9 (0.0136)	42389.31 (0.0031)	44122.31 (0.0020)
PGFM	1176.373 (0.0000)	1177.303 (0.0000)								32813.09 (0.0031)	9469.465 (0.2438)	6757.037 (0.3327)	7212.66 (0.2952)
CPI	0.159734 (0.0016)	0.184394 (0.0005)	2.570557 (0.0011)	2.648775 (0.0009)	2.588173 (0.0025)						236.3659 (0.0000)	253.7656 (0.0000)	266.0594 (0.0000)
RATE	-2.81727 (0.0012)	-2.985027 (0.0005)		-11.82441 (0.4131)	-11.42641 (0.4385)	-5.24129 (0.7479)	-3.675307 (0.8206)					-1966.812 (0.0005)	-2059.69 (0.0003)
SP		-353.6788 (0.0871)			804.9305 (0.8310)		5095.306 (0.2012)	5162.23 (0.1887)					-190527.5 (0.1569)
	Equation (5): Dependent Variable										Equation (6): Dependent Variable		
	VOL	VOL	VOL	VOL	VOL	VOL	VOL	VOL	VOL	VOL	PMUP	PMUP	PMUP
Intercept	-366.5536 (0.9293)	-14555.75 (0.0001)	-3942.611 (0.3792)	-3426.754 (0.4470)	-13315.19 (0.0002)	-2682.93 (0.5325)	-2134.797 (0.6226)	18534.62 (0.0107)	15167.41 (0.0427)	8303.911 (0.0147)	0.111972 (0.0002)	0.080042 (0.0209)	0.071986 (0.1484)
PGFM	38640.89 (0.0014)	10449.62 (0.2300)	7866.523 (0.3115)	8263.138 (0.2886)							0.087651 (0.2467)	0.024213 (0.7718)	0.026174 (0.7582)
CPI		260.0553 (0.0000)	277.9945 (0.0000)	288.5115 (0.0000)	281.6359 (0.0000)	294.639 (0.0000)	305.3829 (0.0000)					0.000585 (0.1141)	0.000572 (0.1322)
RATE			-1905.496 (0.0021)	-1977.041 (0.0016)		-1965.728 (0.0015)	-2036.288 (0.0012)	-1233.447 (0.2546)	-1121.722 (0.2949)				0.001446 (0.8209)
SP				-150835.9 (0.3163)			-142704 (0.3430)		363524.6 (0.1655)	383950.3 (0.1429)			
	Equation (6): Dependent Variable							Equation (7): Dependent Variable					
	PMUP	PMUP	PMUP	PMUP	PMUP	PMUP	PMUP	PGFM	PGFM	PGFM	PGFM	PGFM	PGFM
Intercept	0.068909 (0.1730)	0.082917 (0.0117)	0.076177 (0.1082)	0.072632 (0.1319)	0.121326 (0.0057)	0.104216 (0.0223)	0.124849 (0.0000)	0.118718 (0.0598)	0.160132 (0.0834)	0.156352 (0.0975)	0.312499 (0.0010)	0.272033 (0.0054)	0.265576 (0.0000)
PGFM	0.023808 (0.7818)												
CPI	0.000509 (0.2027)	0.000635 (0.0507)	0.000627 (0.0587)	0.000557 (0.1166)				0.002065 (0.0018)	0.002116 (0.0017)	0.002042 (0.0046)			
RATE	0.001873 (0.7732)		0.001246 (0.8426)	0.001702 (0.7899)	0.002804 (0.6637)	0.003372 (0.6005)			-0.007657 (0.5316)	-0.00717 (0.5658)	-0.002398 (0.8604)	-0.001055 (0.9378)	
SP	0.89958 (0.5891)			0.923011 (0.5741)		1.847119 (0.2420)	1.785718 (0.2519)			0.984122 (0.7584)		4.368728 (0.1899)	4.387946 (0.1810)

Table 3: Annual Market Conditions and IPO Hot Time Characterizedby Volume, Trade Volume, Price Discount, and Investor Sentiment

In other words, firms do not decide to go public simply because investors will pursue their equities and push the price to a higher level.

I then proceed to exclude such endogeneity and test the relationships of the market conditions and the hot time of IPO. In Table 1, the regression that characterizes hot time of IPO by price discount exhibits significantly positive relations of CPI and RATE to primary market underpricing, but insignificant function of SP.

This result suggests that the hot time of IPO is synchronous with the expansionary macroeconomic cycle and the increase of required return of systematic risk of the financial market, and is not affected by the non-systematic risk premium of the equity sector. This result also confirms my earlier conclusion that firms do not go public because the equity market is at its "good time".

Table 1 also shows similar result in the regression that defines hot time of IPO by investor sentiment. The significant coefficients of CPI and RATE in equation (3) regression are 0.000385 and 0.016039, whereas the impact of equity market return to IPO investor sentiment is insignificant. In other words, the return of the equity market at a period is not related to the investors' expectation and enthusiasm to the IPO equity. To sum up, using monthly IPO data, I find the significant relations that IPOs enter their hot time when the economy enters the inflationary cycle and when the required return of systematic risk of the entire financial market is higher. However, the hot IPO period is not related to the existing equity market performance.

In Table 2 and 3, I expand the definition of hot IPO time to high IPO volume and high trade volume of IPO equities using annual data from the U.S. equity market from 1960 to 2000. The results of regression equation (4) to (7) again confirm the significantly positive relation between the inflationary cycle and the hot time of IPO. The coefficients of CPI with dependent variables of NIPO, VOL, and PGFM are 2.588173, 305.3829, and 0.002042, respectively. The p values of the t-tests are close to 0. Higher CPI level is synchronous to the increase of the number of IPOs, the IPO trade volume, and the percentage of IPOs traded greater than the median of filing price. Separate regression between the primary market underpricing and CPI is also positive and significant. However, the influence of RATE and SP, which are the expected required return of the financial market and equity market, to the hot time of IPO is insignificant. The result of the coefficient of RATE is inconsistent with the result summarized in Table 1 but the result of SP is consistent. This might be explained by the limited sample size in Table 2 and 3 which employ annual data from 1960 to 2000. To sum up, firms decide to go public when the economy is at a good time, instead of when the equity market is at a good time.

Past studies suggest that IPO decisions can be driven by endogenous firm fundamentals, *e.g.*, the trade-off between minimizing the duplication in information production and avoiding the risk-premium of venture capitalists (Chemmanur and Fulghieri, 1999); or be driven by exogenous factors, *e.g.*, investor sentiment (Helwege and Liang, 2004). The former can hardly explain the phenomenon of the formation of hot time of IPO, as IPO in such case is a firm-independent decision. The latter leads to the dilemma that firms are willing to be listed in the hot period and receive more dramatic underpricing.

This paper concludes that the IPO decisions of firms are more affected by the macroeconomic environment and the required return of the entire financial market. In inflationary cycle, firms are more likely to go public. This does not contradict the higher underpricing in this period, because firms have to accept a lower underwriting price to generate a satisfactory return for the investors when the required returns of financial market are generally higher. Such underpricing does not prevent the IPO process, as the compensation of easiness to raise funds is attractive.

My conclusion is consistent with the findings of Alti (2006) study, which conclude that hot-market IPO firms issue substantially more equity and lower their leverage ratios; however, immediately after going public, hot-market firms increase their leverage ratios by issuing more debt and less equity relative to cold-market firms. Such increase in equity and subsequent issuance of debt are independent from the firm's fundamental and are more related to the easy access to capital at good time of the economy.

However, my conclusion is inconsistent with some previous studies in terms of the reason and results of hot IPO time. Khanna, Noe, and Sonti (2008) propose that if issues are underpriced on average and that underpricing is significantly higher in a period, such period is regarded as the hot IPO time; Pástor and Veronesi (2005) identify the "hot markets" of IPO as the markets with the top quartile of the moving average of the number of issuance. My study suggests that greater primary market discount and greater number of issuance are the results of the hot IPO time, not the reason. During the expansionary period of the whole economy, firms are more likely to raise funds due to the easy access to capital. In the competition of attracting capital, firms have to generate better IPO returns by accepting lower underwriting price.

This objectively leads to the greater primary market discount and the greater number of issuance, which are the features of hot time of IPO, instead of the incentives.

4. Concluding Remarks

In "hot time" of IPO, many privately held firms are crowded together and publicly listed. This paper attempts to identify the driving force of the hot time of IPO. The previous explanations that IPO decision is based on endogenous firm fundamentals and demand of capital are not satisfactory. Such conclusion contradicts the phenomenon of hot time of IPO and ignores debtas the alternative channel to raise funds.

However, the "good time" of equity market as an exogenous factor of hot IPO period generates the contradiction that firms are listed with greater underwriting price discount during the hot time. In fact, such "good time" of the equity market is preferable to investors due to the higher return, and it is not the good time for firms to raise fewer funds and go public.

My study defines and explains hot time of IPO from the macroeconomic condition and non-systematic risk perspective. If the firms, which are underpriced in hot IPO time, are willing to sell themselves in the market, then additional benefits must be provided to the firm to compensate such loss. I find that this compensation is the easiness of fund raising from the financial market during the period of ample fund supply and liquidity. Investor optimistic sentiment does not necessarily cause a greater numbers of IPOs. In other words, firms do not decide to go public simply because investors will pursue their equities and push the price to a higher level. IPOs enter their hot time when the economy enters the inflationary cycle and when the required return of systematic risk of the entire financial market is higher. However, the hot IPO period is not related to the existing equity market performance and the current market return. In conclusion, firms decide to go public when the economy is at a good time, instead of when the equity market is at a good time.

This conclusion is consistent with the empirical evidence of higher underpricing in the hot time of IPO, because firms have to accept a lower underwriting price to generate a satisfactory return for the investors when the required returns of financial market are generally higher.

My study suggests that greater primary market discount and greater number of issuance are the results of the hot IPO time, instead of the reason.

Reference

Alti, Aydoğan. 2006. "How Persistent Is the Impact of Market Timing on Capital Structure?" Journal of Finance 61 (4): 1681-1710.

Alti, Aydoğan. 2005. "IPO Market Timing." Review of Financial Studies 18 (3): 1105-1138.

Brau, James C. and Stanley E. Fawcett. 2006. "Initial Public Offerings: An Analysis of Theory and Practice." Journal of Finance 61 (1): 399-436.

Chemmanur, Thomas J. and Paolo Fulghieri. 1999. "A Theory of the Going-Public Decision." Review of Financial Studies 12 (2) : 249-279.

Derrien, François. 2005. "IPO Pricing in 'Hot' Market Conditions: Who Leaves Money on the Table?" Journal of Finance 60 (1): 487-521.

Helwege, Jean and Nellie Liang. 2004. "Initial Public Offerings in Hot and Cold Markets." Journal of Financial and Quantitative Analysis 39 (3): 541-569.

Ibbotson, Roger G. and Jeffrey F. Jaffe. 1975. "'Hot Issue' Markets." Journal of Finance 30 (4), pp. 1027-1042.

Khanna, Naveen, Thomas H. Noe, and RamanaSonti. 2008. "Good IPOs Draw in Bad: Inelastic Banking Capacity and Hot Markets." Review of Financial Studies 21 (5): 1873-1906.

Ljungqvist, Alexander, Vikram Nanda, and Rajdeep Singh. 2006. "Hot Markets, Investor Sentiment, and IPO Pricing." Journal of Business 79 (4): 1667-1702.

Pástor, Ľuboš and PietroVeronesi. 2005. "Rational IPO Waves." Journal of Finance 60 (4): 1713-1757.

Ritter, Jay R. 1984. "The Hot Issue Market of 1980."Journal of Business 57 (2): 215–40.

Zingales, Luigi. 1995. "Insider Ownership and the Decision to Go Public." Review of Economic Studies 62 (3): 425-448.