The Empirical Study of IPO in Hong Kong China: with the Initial Offer Price to the IPO Reflected its Fundamental Information Significantly

Dr. Ping-fu LAI
Peking University - Hong Kong University of Science and Technology
Shenzhen Hong Kong Institution, China

Chi-Fung LO
ABRS International Information and Consultancy

Abstract

Initial Public Offer (IPO) under-pricing is the "traditional world-wide phenomenon" for raising capital in the market. It used to enhance the attractiveness to the investors as well as ensuring the sufficient subscription for listing successively. The issue of IPO pricing is depending on different determinants to decide in under-pricing or over-pricing as offer. In this study, it examines how influences to the offer price of IPO by those factors of determinants. This paper tackles the issue of under-pricing IPO and the relevant mechanism from the perspectives of behavioral biases and agency conflicts. In addition, it evaluates between the under-pricing mechanism and any information asymmetry involvement for generating abnormal return in IPO investment. We examine the IPO listed to help to investigate the influence in the offer price from the various factors of determinants. A methodology of multiple regression technique used to define the null hypothesis as "With the Initial Offer Price to the IPO reflected its fundamental information significantly." is adapted or not. It showed that initial offer price is influenced in earnings per share, retained ownership, growth prospects, leverage and under-pricing level significantly.

Keywords: IPO, Stock Market, Hong Kong China, Information, Under-pricing, Initial Offer Price, earnings per share

1. Introduction

Hong Kong as the position of Mainland's International Financial Centre, there are the benefits regarding the continuous Initial Public Offer (IPO) and post IPO fund-raising needs from Mainland enterprises as well as to leverage this competitive advantage in both primary and secondary markets. According to the Fact Book 2008 of Securities and Futures Exchanges in Hong Kong, during 1999 to 2008, there are 702 IPO firms listed in Main Board of the securities market successfully. And the equity funds raised from those IPO firms are around HK$1,241.17 Billion. Hong Kong becomes international IPO hub and as the world's largest IPO market. There were 28% of CAGR for the entire of IPO & Post-IPO Funds Raised between 2004 and 2007. (HKEX, Statistics Department)

IPO under-pricing is the "traditional world-wide phenomenon" for raising capital in the market. It used to enhance the attractiveness to the investors as well as ensuring the sufficient subscription for listing successively. Lought (2007) reported that there was around 18% on IPO under-pricing in the United States during 1960 to 2006, comparing to the average underpriced 100% in China from 1992 to 2007. Consequently, the investors assumed to use the existing share price, which is classified in similar field with the proposed IPO, as a reference in pricing the subject IPO. Apart from its informational role, the existing share price is hypothesized to be a downside anchor for the IPO share price, so the effect of anchoring bias can be measured by IPO under-pricing.

This paper focuses on examining the data in 2006 – "the normal year" before 2007 world financial crisis. There were 53 new IPO firms listed with HK$332.83 Billion equity funds raised from market. The portion of funds is exceeding 26% of total funds raised in the decade from 1999 to 2008. The study is investigating whether IPO firms worth-to be invested or not.

Majority of IPO firms have considered in under-pricing scheme for increasing attractive in investment. The fluctuation of stock prices after listing could give a significant contradicting to the original offer price. It raised the problem of the perspectives of behavioral biases and agency conflicts, in addition to the evaluation between the under-pricing mechanism and any information asymmetry involvement for IPO investment. In this study, an investigation is focused on the effect and impact on the IPO with greater under-pricing in respect to have higher growth rates and valued to be invested.

2. Literature Reviews

2.1 Introduction

This study examines the pricing of initial public straight debt issues by focusing on the initial-day and aftermarket price performance. The recent IPO literature has adequately established that IPO firms of common stock are underpriced. This finding of systematic under-pricing of equity IPO firms has led to the development of theoretical models designed to explain the existence of this phenomenon under equilibrium conditions. The models are based on the existence of information asymmetry between market participants (Allen and Faulhaber (1989), Grinblatt and Hwang (1989), Rock (1986), and Welch (1989)), the risk of litigation due to legal liability (Tinic (1988) and Hughes and Thakor (1992)), monopsony power of investment banks (Ritter (1984)), and incomplete markets (Mauer and Senbet (1992)). To define the under-pricing level (UP), the ratio between the difference between 1st day open price (OPEN) and offering price (OFFER). The formula likes as UP= (OPEN – OFFER)/OFFER. In the view of relative size of funds raised in IPO, it is described as market initial selling (CAP) and it is defined as the product between the shares offered (NSHARE) and the open price (OPEN). It is the fund size raised in IPO. The formula is CAP = NSHARE * OPEN

2.2 Rationale for Under-pricing

As the abovementioned, the investment bank as the intermediaries for the underwriting guarantee. The proceeds from the issue are based upon the offering price, may not be delivered. Moreover, there might insufficient capital for supporting the guarantee prepared by the investment banks. In addition, if a bungled offering price to initial public offer in the company is set too high, it might damage the subscription volume to its IPO and affect its ability to make future issues. Nevertheless, the investment banks are assumed unwilling to estimate an offer price without receiving more information from the proposed firm. And they might not have the specialized expertise for evaluation to the particular filed of the subject firms, such as in biotechnology or software development. They need providing more advice and information to help the issuing company decide on the particulars of the issue accurately. Therefore, it is presumed that the investment bankers avoided obtaining any information which is not true to affect the accuracy of offering price. It is tended to reduce the initial price as the offer for minimizing the risk. The proposed firms have to lowering the initial offer price to convince an investment banker and take them public successfully.

Although the form of IPO can help to raise fund easily and enhance the capitalization of the firm, the shareholding of shareholders would be diluted in the same time. In addition, the level dilution of shareholding ratio would be related to the level of under-pricing in offer. Whenever under-pricing exists, issuer-oriented under-pricing will be greater than the traditional investor-oriented under-pricing since the latter lack of acknowledge to the background of reducing market value per share caused by selling new shares below their value. Since the correct target price is the share value before the dilution caused by IPO under-pricing, and not the observed market price; therefore, both under-pricing and the costs of under-pricing are higher for issuers.

In the view of the agency issue, the underwriters are responsible for disclosing in advance their decision to sell and deal with the ensuing minimized adverse selection problem, Lin and Smith (1998) argued that there was an informational asymmetry found in IPO settings leads to higher required rates of returns because of the negative market reaction to insider sales. It was interpreted by the market as a signal, so that the offering price was premium. IPO offer sales arranged with underwriters would have maintained a result in higher under-pricing in order to make the offer attractive to the marketplace.

2.3 Anchoring Effect

Some researchers (e.g. Geoffrey C., and C. Swift, 2009) believe that IPOs were not being under-priced deliberately by issuers and/or underwriters, but the price-rocketing phenomena on issuance days are due to investors' over-reaction An Anchoring Effect can illustrate the above mentioned phenomenon about over-subscription while of the IPO launching before success to listing and over-reaction for the stock price after the successful listing. Made famous by Matthew Dixson (1984) claimed that there was an Anchoring Effect, also called as a cognitive bias, that describes the common human tendency to rely too heavily, or "anchor," on one trait or piece of information when making decisions. The investors expected to have abnormal return from the IPO.

2.4 Winner's Curse

One important rationale for the under-pricing of IPO is the "winner's curse" explanation introduced by Rock (1986). Rock argued that rationing will result if IPO demand was unexpectedly strong. The shares subscription orders made by informed investors only happened when an issue is underpriced. Uninformed investors do not know which issues will be discounted or in premium, they would allocate to spend on the most desirable new issues, and all of the least desirable new issues. The uninformed investors will consider to submit purchase orders while IPOs are underpriced enough to compensate them for the bias in the allocation of new issues due to the implied adverse selection problem. Beatty and Ritter (1986), Koh and Walter (1989), and others provide empirical evidence consistent with Rock's (1986) model. According to Rock's (1986) winner's curse and the Benveniste and Spindt (1989) dynamic information acquisition models are also accepted in explaining much of the under-pricing. Chi and Padgett (2005) using 668 IPO firms for the period January 1996–December 2000, find that the average under-pricing of Chinese IPO firms is 129.2%.

2.5 Under-pricing Strategies

The signaling models in Allen and Faulhaber (1989), Welch (1989), and Grinblatt and Hwang (1989) suggested that in order to signal their good quality, majority of IPO firms were underpriced intentionally. In these models, the IPO firm itself knows its prospects best. The firms with the most favorable prospects find it optimal to signal their type by under-pricing their initial issue, because they can expect to minimize the cost of under-pricing in subsequent seasoned issues. Low-quality firms must spend more on imitation expense, such as promotion or road show introduction, to package itself to be high-quality firms. Welch (1989) claimed that some possibilities this imitation is discovered in offerings. To define the quality of the firm, the under-pricing of high-quality firms at the initial public offering adds sufficient signaling costs to the imitation expenses of low-quality firms and makes the expected gain from imitation negative. Thus, low-quality firms abandon the imitation strategy and voluntarily reveal their quality. This argument implies that low-quality firms do not underprice their IPOs as much as do high-quality firms, so investors correctly perceive under-pricing as a signal of the firm's quality. According to the paper of IPO under-pricing, firm quality and analyst forecasts presented by Steven X. Zheng, David A. Stangeland (2007), this paper proved that IPO firms with greater under-pricing are of better quality.

2.6 Information Asymmetry

Reilly and Hatfield (1969) suggested that the short run initial return should be continued through the long run as the market continues to recognize and adjust for under-pricing. Ibbotson (1975) found that their systematic risk declined as the issues became seasoned. Baron (1982) proposed that an informational asymmetry between the underwriters and the issuers causes the significant first-day return, this is because that the underwriters possess superior information relating to the demand for the IPO firms while the issuers cannot observe how about the effort of the underwriters' distribution are. As a result of this situation of informational asymmetry, the underwriters wonder minimize their efforts in selling the IPO firms by offering them at discount.

2.7 Lockup Period

According to the report of Brav & Grumpers (2003), the lockup period was the commitment for the purpose of prevent fluctuated stock price during the early listing period. The lockup agreement was often complied with insider shareholders. It was prohibiting these shareholders from trading in a specified time period after the IPO. Lockup agreements were a contractual agreement between the insider shareholders and the IPO underwriter but they were not regulated by law. Leland & Pyle (1977) stated that the lockup agreements had as a signaling function for reducing the information asymmetries.

It acted to reduce two major information asymmetries, in particular the moral hazard problem: first, the principal-agent problem that the managers/owners will continue to exert their effort and second, that large insiders will not sell off at an early stage, thus trading on information not available to the market.

However, there is a risk associated with insiders being locked-up as insider sales itself has an important market function. Insider is assumed containing more private information than the publicly investors. The stock price would be fluctuated or stopped for further development when the Lockup expirations. This is common moral hazard particular in the principal-agent problem would be raised for judging the efficiency of the protective of lock up agreement. There is evidence against the efficient market hypothesis and previous studies on lockup agreements have found significant abnormal returns associated with lockup expirations. Consequently, this strongly proposes that information asymmetries exist. The Ofek & Richardson (2000), Field & Hanka (2001) and Brav & Grompers (2003) studies found a strong drop in firms' share price connected to the lockup expiration date.

2.8 Key Considerations of IPO Pricing

Some evidences showed that reputable underwriters played a certification role by staking their reputations and enabling new issues to overcome agency problems. Carter and Manaster (1990) suggested that underwriter was a main role in reducing the degree of information asymmetry. The assigned underwriter normal as an Investment bank, which offered independent certification of the issuer's risk, nevertheless, more reputable investment banks handled less risky IPO firms to protect their reputation capital. Reputable underwriter is useful in reducing information asymmetry. The degree of under-pricing should be inversely related to the quality of the underwriter. The reputation of Investment bank is an important determinant of IPO return. The degree of under-pricing is positively and significantly related to underwriter compensation as a percentage of issue size. This result suggests that the greater the certification cost with the greater the under-pricing of the IPO because of larger asymmetric information between insiders and outsiders.

Sizes of Fund The adjustments for firm size are expected related to risk. Small firms are more risky than larger firms. Indeed, Chan and Chen (1991) found that smaller firms are more susceptible to value declines as a result of poor performance, and are less likely to survive adverse economic conditions.

Purpose of Fund If it is for internal purpose, the fund will use for ownership retention and capital ratio increasing for liquidity enhancement, whereas it is for external purpose, it will be business and development or enlarging market share and strengthen equipment facilities etc. Grinblatt and Hwang (1989) and Zheng et al. (2002) predicted greater under-pricing when retained ownership is high, either as a complementary signal of value, or to increase liquidity. That was, higher retained ownership will result in the application of a discount rather than a premium to offer price. In support of the theory of Zheng et al. (2002), the stockbrokers interviewed stated that liquidity may be a problem if too little of the firm is being floated. However, a higher leverage is associated with increased financial risk.

Price to Earnings Ratio Price to Earnings Ratio is a tool to estimate a value of the firm, it is depending on the substantial information would be disclosed. It is looking at the pricing of comparable firms that are already publicly traded. At the stage of the company decided in IPO, the investment banker and issuing firm will present information to prospective investors in a series of presentations called road shows. During the show, to enhance the perception to the company, the equity valuation is organized well in P/E Ratio, expected growth rate and return of earnings. Earnings per share (EPS) is the amount of earnings per each outstanding share of a company's stock. The PE ratio is an increasing function of the payout ratio and the growth rate and a decreasing function of the riskiness of the firm. In fact, it can state the payout ratio as a function of the expected growth rate and return on equity.

2.9 Under-pricing IPO First Day Closing Price and Thereafter

Newberger and Hammond (1974) concentrated on the relationship between underwriters and under-pricing and reported that secondary market price changes during the first month were large and related to either the underwriter or the amount of under-pricing.

In a major study, Ibbotson concluded that 'Results are generally consistent with aftermarket efficiency' and 'after the first and second months there are few large departures from efficiency,' (Ibbotson, 1975). Bear and Curley (1974) studied that the stock price declined by twenty-five percent over one year, however their study is limited by the short time period covered. Shaw (1979) studied 95 Canadian IPO firms and concluded that there was 0.27% in average higher than the offer price in their returns after one year. Black and Stanley (1980) found only small changes at one month and one year while Neuberger and La Chapelle (1983) reported large increases at both one and six months. Finally, Finn and Higham (1983) investigated 93 Australian new issues between 1966 and 1978 and pointed out there was little change over the first four months with a negative 11.5% return over a year.

According to the predictions of traditional asymmetric information theories, Purnanandam and Swaminathan (2002) found that IPO firms were systematically overvalued relative to fundamentals, and the most overvalued IPO firms rather than the most undervalued earned the highest first-day return. Offer prices relative depended on both first-day closing prices and several other measures of intrinsic value. The under-pricing is considering in the extent of overvaluation or undervaluation for an IPO. Forecasts of both earnings and dividends are required to estimate the firms' intrinsic value. The growth of sales, earnings, and EBITDA are also earned to measure or evaluate the potential value of the IPO.

2.10 Investment Expectation Beatty and Ritter (1986) indicated in some specific factors in elaborating the under-pricing phenomenon. It related the level of ex-ante uncertainty surrounding the intrinsic value of an IPO to the level of under-pricing, it found that the offering price was prefer to selling in discount more while there was higher uncertainty level in selling. Most of IPO have recorded with over-subscription in the first listing day; the phenomena of hyper-reactive of the stock price would inspire to invest for earning short-term profits. Growth prospects of the floating company are to be important. A company with favorable growth prospects is likely to have a premium applied, whereas a company without favorable growth prospects requires an incentive such as a discount to attract investors.

It is hypothesized that the investors' sentiment and cognitive bias to cause the pricing rocket phenomenon. Moreover, it is hypothesized that the under-pricing IPO may contain lack of informative and transparency for lowering the price in offer. Dawson (1984) claimed that whenever high under-pricing leads to heavy oversubscriptions, the profitability of an initial price rise when trading begins is partially offset. It is not only small investors have a small chance of getting shares and big investors are allocated in a part of the shares while they applied for, but also the application form must be accompanied by payment for the full amount of shares requested.

Nevertheless, heavy oversubscriptions are not uncommon for the IPO firms in the markets. Investors delight in the under-pricing of the issue and the number of times the issue is oversubscribed. In addition, investors are seeking to buy the shares in the secondary market if they are unable to obtain shares in the initial offer. In this matter, it will add to the demand for the new shares. Subsequently, as investors revise their expectations and the market prices the shares efficiently, the price will fall to its true level. Bear and Curley (1975) concluded that new issues were initially overpriced by the secondary market in a substantial number of new offers as buyers' overestimated return potential or underestimated risk characteristics of the new shares.

Miller (1977) also demonstrated that some small group of investors was excessively optimistic to purchase the stocks in the opening price up to a value most investors regard as unreasonable. As long as a minority of potential investors could absorb the issue, an increase in the divergence of opinion about the true value of the shares increased the market clearing price.

McDonald and Fisher (1972) inspired to a possible behavioral explanation if under-pricing and speculation in the new issue market created a demand for shares which was self generating. High initial trading volume and favorable references in the financial press could increase attractive more investors to purchase shares. Since in an efficient market the initial price rise will fully reflect available information and anticipate future favorable news, these explanations of a continuing price rise in secondary market trading are adopt only in a market which does not price new shares efficiently.

To summarize the literature review, IPO studies which considered secondary market trading reach from the initial offering publicly to the market price adjustments in early trading for under-pricing. The initial offer price is related to a number of fundamental factors to the firms, such as proposed growth rate, fund size, leverage ratio, retained rate, P/E ratio and the reliable underwriters. From the literature review, it shows that the responsibilities and how importance to the price in offering. The investment expectation is depending on the pricing in IPO. The phenomena of anchoring effects and winner's curse would be appeared in the imbalanced offer price.

3. Research Methodology

An in-depth review of literatures to explore the effects of under-pricing IPO on the investment sentiment and reasonable intrinsic stocks price set to the firms have been carried out. Moreover, an analytical study by means of the multiple linear regression technique was adopted in predicting the value of one dependent variable from the values of two to more independent variables and testing the hypotheses in a model. Literature review is the first step for information collection. The sources of literatures in the form of books, journal articles, textbook, newspaper and access internet, are mainly from the e-library of the University of Hong Kong. The prospectus of the firms would also be found in the Hong Kong public libraries. Information from the government or other news publications from the internet searches are also conducted, such as www.hkex.com.hk, www.sfc.hk, www.etnet.com.hk and the official websites to the companies. After the review of literatures, it was considered to examine the correlation of the following factors with offer price to the IPO firms: 1.) Earnings per share (EPS), 2.) Firm Size (SIZE), 3.) Retained Ownership (RETAINED), 4.) Growth prospects (GROWTH), 5.) Leverage (LEV), 6.) Under-pricing Level (UP).

A substantial number of theoretical explanations for short-run under-pricings have been proposed in the published literature. The majority of these theories assume that first-day market price is an unbiased measure of value; and therefore, the offer is underpriced relative to intrinsic value. In this paper, it examines offer prices relative to both first-day closing prices and several other measures of intrinsic value. The main frame in investigation on the question of whether the IPO firms listed in Hong Kong are systematically under- or over- valued. The sample period in 2006 is used for reviewing issues related to under-pricing and whether under-valuation or not, and for developing our empirical model of offer prices.

The offer price (OFFER) is as reported in the prospectus and is the full amount the prospective investor pays for obtaining one share in the company undertaking the offer. To examine the offer price, the factors of financial information about the firms as intrinsic value and intermediate parties would be parameters in the offer price model.

The earnings per share (EPS) represents the portion of a company's earnings, net of taxes and preferred stock dividends, the EPS of the firm in the first fiscal year after the IPO listed in public for considering the relationship between the initial offer price and earning potential of firm individually.

To measure firm size (SIZE) relative to industry median market capitalization, it is formulated as:
Relative size= (the Total number of shares x offer price for firm)/Industry median market capitalization

In the view to the Retained Ownership (RETAINED), it considers in the total number of shares includes those retained by the original owners. The (RETAINED) is calculated as Number of shares held by original owners divided by the Total number of shares on issue. Retained ownership is important for determining offer price. Leland and Pyle (1977) demonstrated that the level of retained ownership signaled the quality of a firm's projects to the market, with greater retained signaling higher quality projects. In support of this theory, How and Low (1993) found that higher fractional retained ownership is associated with higher firm value (measured as market value post-listing or total firm assets). It was expected that a high (low) amount of retained ownership will result in a premium (discount) being applied when determining offer price. Therefore, the expected directions of the relationship between RETAINED and offer price might be significant.

The total number of shares on issue is based on full subscription and includes those held by the original owners. This ratio captures the percentage of shares not held by outsiders following the initial public offer. We measure growth prospects (GROWTH) as one minus the ratio of book value of ordinary shareholders equity per share to offer price.

Boatsman and Baskin (1981) found that more accurate predictions using P/E multiples are achieved when the 10-year average growth rate of earnings was considered in addition to industry. We measure leverage (LEV) as total liabilities to total assets, using amounts provided in the pro forma balance sheet contained in the prospectus.

The under-pricing Level (UP) of the initial public offer, it is capture that whether an issue is underwritten. It is assumed that the IPO have been underwritten completely would be implied in the pricing in discounted or premium. While the stock is selling without discount in offer, it has be underwritten, otherwise, it has without underwritten. Underwriters set the offer price and agree to take up any shortfall in the demand for shares. How et al. (1995) view the underwriter's function as lending credibility. The underwriting relationship implies that the issue is priced correctly, to reflect information about the firm. More risky issues are less likely to be underwritten since underwriters will be reluctant to handle risky issues, as issue failure would impact on reputation capital. This implied that a discount in the offer price applied to issues that are invalid underwritten. Since there are some information hidden of undefined to minimize the underwriting accuracy.

The records to those individual parameters are presented in Table 1 and Table 2.

Table 1 List of IPO Firms

Stock Code	**Company Name**	**Incorporation**	**Stock Code**	**Offer Price** y	**Earnings per share** x_1	**Fund Sizes** x_2	**Retained Ownerships** x_3	**Growth in BV (%)** x_4	**Leverage Ratios** x_5	**Underpricing Ratio** x_6
2398"	Good Friend International Holdings Inc.	Cayman Islands	2398	1.13	0.23	0.10	0.14	0.15	-0.40	-0.05
3330"	Lingbao Gold Co. Ltd. - H Shares	PRC	3330	3.33	0.35	1.23	2.59	0.00	-0.44	-0.44
919"	Modern Beauty Salon Holdings Ltd.	Cayman Islands	919	1	0.30	0.22	0.90	0.04	-0.61	0.21
2788"	Yorkey Optical International (Cayman) Ltd	Cayman Islands	2788	2.2	0.34	0.63	3.61	0.13	-0.09	0.32
2689"	Nine Dragons Paper (Holdings) Ltd.	Bermuda	2689	3.4	0.49	4.86	6.96	0.17	-0.49	-0.44
402"	Ming Hing Waterworks Holdings Ltd.	Cayman Islands	402	0.72	0.19	0.07	3.00	0.08	-0.36	0.44
3308"	Golden Eagle Retail Group Ltd.	Cayman Islands	3308	3.15	0.12	2.03	2.85	0.01	-1.46	-0.14
3323"	China National Building Material Co. Ltd. - H Shares	PRC	3323	2.75	0.19	2.57	2.55	-0.01	-0.59	-0.18
707"	Co-Prosperity Holdings Ltd.	Cayman Islands	707	1.16	0.21	0.29	4.04	0.23	-0.27	-0.12
2626"	Hunan Nonferrous Metals Corporation Ltd. - H Shares	PRC	2626	1.65	0.17	2.54	2.52	0.63	-0.51	-0.70
3355"	Advanced Semiconductor Manufacturing Corporation Ltd. -H Shs	PRC	3355	1.6	0.34	0.93	3.28	0.95	-0.37	-0.16
2345"	Shanghai Prime Machinery Co. Ltd. - H Shares	PRC	2345	2.1	0.01	1.80	1.76	1.13	-0.26	-0.38
2880"	Dalian Port (PDA) Co. Ltd.	PRC	2880	2.575	0.01	3.09	2.71	2.08	-0.43	-0.59
3335"	DBA Telecommunication (Asia) Holdings Ltd.	Cayman Islands	3335	1.26	0.25	0.45	4.19	0.25	-0.08	-0.54
3382"	Tianjin Port Development Holdings Ltd.	Cayman Islands	3382	1.88	0.16	1.55	2.69	-0.21	-0.13	-0.38
474"	Winbox International (Holdings) Ltd.	Cayman Islands	474	0.55	0.08	0.01	2.00	0.05	-0.14	0.00
527"	Galaxy Semi-Conductor Holdings Ltd.	Cayman Islands	527	0.86	0.22	0.11	2.00	-0.26	-1.00	0.00
549"	Jilin Qifeng Chemical Fiber Co., Ltd. - H Shares	PRC	549	1.69	0.18	0.50	3.19	-0.37	-0.69	0.02
515"	TC Interconnect Holdings Ltd.	Cayman Islands	515	1	0.22	0.07	3.53	0.05	-0.65	-0.01
352"	Fortune Sun (China) Holdings Ltd.	Cayman Islands	352	1.06	0.13	0.09	2.48	-0.52	-0.16	-0.02
813"	Shimao Property Holdings Ltd.	Cayman Islands	813	6.25	1.02	5.32	7.31	1.31	-0.47	-0.05
3989"	Hembly International Holdings Ltd.	Cayman Islands	3989	1.7	0.44	0.16	2.77	0.34	-0.60	-0.03
3900	Greentown China Holdings Ltd.	Cayman	3900	8.22	1.31	3.82	3.11	-1.84	-0.83	-0.06

"		Islands								
3322 "	Win Hanverky Holdings Ltd.	Cayman Islands	3322	2.28	0.31	0.98	2.92	0.11	-0.77	-0.29
3303 "	Jutal Offshore Oil Services Ltd.	Cayman Islands	3303	1.38	0.15	0.20	2.88	0.08	-0.22	-0.36
3968 "	China Merchants Bank Co., Ltd. - H Shares	PRC	3968	8.55	0.64	25.72	1.00	0.56	-0.94	-0.27
3983 "	China BlueChemical Ltd. - H Shares	PRC	3983	1.9	0.58	3.80	2.11	0.70	-0.23	-0.21
2700 "	Smart Union Group (Holdings) Ltd.	Cayman Islands	2700	1.1	0.18	0.10	3.81	-0.17	-0.65	-0.03
272"	Shui On Land Ltd.	Cayman Islands	272	5.35	0.07	8.48	1.89	1.95	0.00	-0.01
637"	Lee Kee Holdings Ltd.	Cayman Islands	637	2.67	0.71	0.76	2.85	0.92	-0.25	-0.12
667"	HannStar Board International Holdings Ltd.	Cayman Islands	667	1.77	0.28	0.75	1.47	0.31	-0.65	-0.07
320"	Computime Group Ltd.	Cayman Islands	320	2.28	0.26	0.65	3.08	0.12	-0.46	-0.18
337'	SPG Land (Holdings) Ltd.	Cayman Islands	337	4.78	0.57	1.71	2.83	0.53	-0.52	-0.05
558"	L.K. Technology Holdings Ltd.	Cayman Islands	558	1.11	0.08	0.34	3.46	0.44	-0.46	0.00
3918 "	NagaCorp Ltd.	Cayman Islands	3918	1.43	0.20	1.02	2.68	0.31	-0.05	-0.15
609"	Tiande Chemical Holdings Ltd. Ca	Cayman Islands	609	1.02	0.22	0.13	3.18	0.39	-0.40	-0.27
1888 "	Kingboard Laminates Holdings Ltd.	Cayman Islands	1888	7.73	0.69	7.93	3.47	0.52	-0.45	-0.13
477"	AUPU Group Holding Co. Ltd.	Cayman Islands	477	1.23	0.19	0.36	2.23	0.51	-0.18	-0.11
552"	China Communications Services Corporation Ltd. - H Shares	PRC	552	2.2	0.21	4.06	3.67	-0.08	-0.37	-0.50
1818 "	Zhaojin Mining Industry Co. Ltd. - H Shares	PRC	1818	12.68	0.65	3.13	2.73	1.19	-0.29	-0.30
528"	Kingdom Holdings Ltd.	Cayman Islands	528	1.75	0.17	0.38	3.61	0.04	-0.40	-0.43
1800 "	China Communications Construction Co. Ltd. - H Shares	PRC	1800	4.6	0.35	23.02	2.68	0.44	-0.71	-0.70
1868 "	Neo-Neon Holdings Ltd.	Cayman Islands	1868	6.9	0.51	1.97	2.64	0.82	-0.17	-0.38
2006 "	Shanghai Jin Jiang Int'l Hotels (Group) Co. Ltd. - H Shares	PRC	2006	2.2	0.16	3.46	2.61	0.01	-0.30	-0.91
1388 "	Embry Holdings Ltd.	Cayman Islands	1388	3.62	0.32	0.45	3.04	0.13	-0.12	-0.38
1898 "	China Coal Energy Co. Ltd. - H Shares	PRC	1898	4.05	0.47	18.80	0.00	-0.05	-0.50	-0.11
3898 "	Zhuzhou CSR Times Electric Co., Ltd. - H Shares	PRC	3898	5.3	0.53	2.73	1.64	0.39	-0.25	-0.43
1899 "	Xingda International Holdings Ltd.	Cayman Islands	1899	3.08	0.45	1.70	0.94	0.07	-0.51	-0.17
1399 "	Scud Group Ltd.	Cayman Islands	1399	2.02	0.28	0.75	2.33	0.55	-0.28	-0.53
1882 "	Haitian International Holdings Ltd.	Cayman Islands	1882	3.95	0.45	1.96	3.00	0.47	-0.43	-0.04

Remarks:
EPS= (Net Income minus Dividends on Preferred Stock) divided by Average Outstanding Shares

SIZE**= the Total number of shares X offer price for firm/Industry median market capitalization***
RETAINED= Number of shares held by original owners / The Total number of shares on issue.
LEV = total liabilities divided by total asset.
GROWTH= the ratio to the growth (regress) rate of the firm different between the year of listing to public and the first end of the fiscal year.
UP= it is implied with underwritten or not,
Without discount in offer = underwritten, discount in offer = without underwritten.
**: SIZE is size of fund raised in IPO; it is equal to no. of share plus the price in offer. While to extract the information into regression and testing method, the unit of size should be set into signal unit similar to the unit of OFFER.

***: Industry median market capitalization is taken in the median of the selected sample. It ensures that the market capitalization of the floating company is not included in the industry median measure. Industry median market capitalizations are used rather than means as they are less susceptible to extreme observations. It is HKD804.425 million.

Table 2 List of IPO Firms (con't)

Stock Code	Company Name	Incorporation	Stock Price at the end of fiscal year	Earnings (HKD) (Billion)	Earnings (RMB) (Billion)	No. of Share Authorized (000)	No. of Share Issued (000)	Total Liabilities (HKD) ("000")	Total Assets (HKD) ("000")	Profit Margin Growth	Net Asset (HKD)
2398"	Good Friend International Holdings Inc.	Cayman Islands	1.08	0.228	0.19	100,000	70,000	199,936.00	496,788.00	14.5	296,852
3330"	Lingbao Gold Co. Ltd. - H Shares	PRC	7.17	0.348	0.29	770,249	297,274	1,231,054.00	2,774,925.00	0	1,543,871
919"	Modern Beauty Salon Holdings Ltd.	Cayman Islands	2.06	0.29532	0.2461	161,852	180,000	475,810.00	785,297.00	4.3	309,487
2788"	Yorkey Optical International (Cayman) Ltd	Cayman Islands	3.1	0.3372	0.281	830,000	230,000	16,481.00	181,800.00	13	165,319
2689"	Nine Dragons Paper (Holdings) Ltd.	Bermuda	15.48	0.48864	0.4072	8,000,000	1,150,000	7,236.30	14,872.60	17.4	7,636
402"	Ming Hing Waterworks Holdings Ltd.	Cayman Islands	1.46	0.18996	0.1583	239,880	80,000	75,532.00	210,206.00	8.3	134,674
3308"	Golden Eagle Retail Group Ltd.	Cayman Islands	6.11	0.1164	0.097	5,170,000	1,816,875	1,793,724.00	1,228,102.00	0.9	-565,622
3323"	China National Building Material Co. Ltd. - H Shares	PRC	6.5	0.192	0.16	1,921,551	752,334	8,276,060.00	13,990,314.00	-0.6	5,714,254
707"	Co-Prosperity Holdings Ltd.	Cayman Islands	1.17	0.21228	0.1769	808,000	200,000	234,465.00	858,661.00	22.6	624,196
2626"	Hunan Nonferrous Metals Corporation Ltd. - H Shares	PRC	5.17	0.17376	0.1448	3,115,979	1,236,918	265,835.00	520,290.00	62.79	254,455
3355"	Advanced Semiconductor Manufacturing Corporation Ltd. -H Shs	PRC	0.86	0.336	0.28	1,534,227	467,660	1,044,096.00	2,858,819.00	94.74	1,814,723
2345"	Shanghai Prime Machinery Co. Ltd. - H Shares	PRC	3.39	0.00672	0.0056	1,217,559	690,646	837,203.00	3,266,091.00	113.3	2,428,888
2880"	Dalian Port (PDA) Co. Ltd.	PRC	4.49	0.009072	0.00756	2,614,625	966,000	4,197,415.00	9,730,714.00	208	5,533,299
3335"	DBA Telecommunication (Asia) Holdings Ltd.	Cayman Islands	1.09	0.24972	0.2081	1,204,031	287,500	56,929.00	758,237.00	25.4	701,308
3382"	Tianjin Port Development Holdings Ltd.	Cayman Islands	3.16	0.134	0.134	1,786,946	664,700	513,395.00	3,907,394.00	-20.9	3,393,999
474"	Winbox International (Holdings) Ltd.	Cayman Islands	0.74	0.0701	0.0701	400,000	20,000	29,625.00	217,629.00	4.65	188,004
527"	Galaxy Semi-Conductor Holdings Ltd.	Cayman Islands	0.7	0.18	0.18	2,000,000	100,000	29,625.00	29,625.00	-25.6	-
549"	Jilin Qifeng Chemical Fiber Co., Ltd. - H Shares	PRC	1.62	0.18234	0.15195	754,031	236,250	972,272.00	1,418,653.00	-36	446,381
515"	TC Interconnect Holdings Ltd.	Cayman Islands	1.53	0.22152	0.1846	211,726	60,000	450,943.00	692,799.00	4.8513	241,856
352"	Fortune Sun (China) Holdings Ltd.	Cayman Islands	1.03	0.132	0.11	174,521	70,280	26,013.00	165,963.00	-52	139,950
813"	Shimao Property Holdings Ltd.	Cayman Islands	19.12	1.0212	0.851	5,000,000	684,393	13,054,765.00	27,696,127.00	131.04	14,641,362
3989"	Hembly International Holdings Ltd.	Cayman Islands	5.65	0.3646	0.3646	214,226	77,280	509,596.00	854,807.00	34	345,211
3900"	Greentown China Holdings Ltd.	Cayman Islands	17.34	1.30968	1.0914	1,162,773	373,377	4,625,390.00	5,596,325.00	-183.51	970,935
3322"	Win Hanverky Holdings Ltd.	Cayman Islands	2.66	0.255	0.255	1,007,671	345,000	1,506,154.00	1,949,126.00	11	442,972
3303"	Jutal Offshore Oil Services Ltd.	Cayman Islands	3.83	0.15456	0.1288	331,315	115,000	75,881.00	340,526.00	7.81	264,645
3968"	China Merchants Bank Co., Ltd. - H Shares	PRC	31.3	0.636	0.53	2,420,000	2,420,000	878,931.00	934,029.00	56	55,098
3983"	China BlueChemical Ltd. - H Shares	PRC	5.14	0.5808	0.484	3,400,438	1,610,000	2,061,970.00	9,110,882.00	70	7,048,912
2700"	Smart Union Group (Holdings) Ltd.	Cayman Islands	1.67	0.18	0.15	2,000,000	52,560	316,253.00	483,264.00	-16	167,011
272"	Shui On Land Ltd.	Cayman Islands	9.18	0.06	0.06	2,405,144	1,274,621	29,337.00	10,155,960.00	195	10,126,623
637"	Lee Kee Holdings Ltd.	Cayman Islands	1.27	0.5934	0.5934	654,767	230,000	436,976.00	1,751,340.00	92	1,314,364

667"	HannStar Board International Holdings Ltd.	Cayman Islands	1.72	0.2337	0.2337	5,000,000	341,250	314,942.00	484,869.00	31	169,927
320"	Computime Group Ltd.	Cayman Islands	1.42	0.21596	0.21596	709,315	230,000	722,861.00	1,585,346.00	12	862,485
337'	SPG Land (Holdings) Ltd.	Cayman Islands	6.3	0.5748	0.479	814,658	287,500	2,958,865.00	5,649,301.00	53	2,690,436
558"	L.K. Technology Holdings Ltd.	Cayman Islands	0.84	0.07	0.07	864,384	250,000	630,513.00	1,383,127.00	-44	752,614
3918"	NagaCorp Ltd.	Cayman Islands	2.24	0.1649	0.1649	1,541,049	575,000	12,082.00	247,975.00	31	235,893
609"	Tiande Chemical Holdings Ltd. Ca	Cayman Islands	0.85	0.2184	0.182	318,082	10,000	201,125.00	502,549.00	39	301,424
1888"	Kingboard Laminates Holdings Ltd.	Cayman Islands	5.53	0.5728	0.5728	2,859,863	825,000	4,606,776.00	10,245,880.00	52	5,639,104
477"	AUPU Group Holding Co. Ltd.	Cayman Islands	1.41	0.191856	0.15988	523,190	234,600	82,254.00	456,817.00	51	374,563
552"	China Communications Services Corporation Ltd. - H Shares	PRC	6.93	0.2064	0.172	5,444,986	1,484,986	5,748,290.00	15,331,380.00	-8	9,583,090
1818"	Zhaojin Mining Industry Co. Ltd. - H Shares	PRC	29.7	0.648	0.54	542,214	198,715	1,443,134.00	4,907,558.00	119	3,464,424
528"	Kingdom Holdings Ltd.	Cayman Islands	0.95	0.17424	0.1452	622,500	172,500	429,682.00	1,082,220.00	4	652,538
1800"	China Communications Construction Co. Ltd. - H Shares	PRC	21	0.348	0.29	10,800,000	4,025,000	90,225.00	126,952.00	44	36,727
1868"	Neo-Neon Holdings Ltd.	Cayman Islands	6.67	0.51348	0.4279	607,452	230,000	419,379.00	2,443,360.00	82	2,023,981
2006"	Shanghai Jin Jiang Int'l Hotels (Group) Co. Ltd. - H Shares	PRC	3.14	0.16206	0.13505	3,300,000	1,265,000	3,068,371.00	10,201,576.00	1	7,133,205
1388"	Embry Holdings Ltd.	Cayman Islands	6.2	0.2668	0.2668	303,836	100,000	84,588.00	708,207.00	13	623,619
1898"	China Coal Energy Co. Ltd. - H Shares	PRC	22.6	0.468	0.39	8,109	3,733,330	22,475,984.00	45,113,737.00	-5	22,637,753
3898"	Zhuzhou CSR Times Electric Co., Ltd. - H Shares	PRC	11.04	0.528	0.44	682,058	414,644	940,246.00	3,788,256.00	39	2,848,010
1899"	Xingda International Holdings Ltd.	Cayman Islands	1.93	0.45396	0.3783	911,633	965,000	2,612,846.00	5,170,990.00	7	2,558,144
1399"	Scud Group Ltd.	Cayman Islands	2.08	0.276	0.23	695,397	299,000	321,116.00	1,156,839.00	55	835,723
1882"	Haitian International Holdings Ltd.	Cayman Islands	5.5	0.45204	0.3767	1,197,000	399,000	1,784,909.00	4,155,274.00	47	2,370,365

702 IPO firms listed on main board in a decade after 1998 successfully. Exceed 500 firms registered in Hong Kong came from the Mainland China. It showed that it is catching up the opportunities from the Mainland China after the unification. The initial sample comprises IPO firms specified in 2006. It examines the relationship between the offer and the intrinsic value to the firm by comparing the data from the date of listing to first year after listed. It collects the IPO from the Securities and Futures Exchange in Hong Kong. To be included in the study, IPO must satisfy the following criteria: 1.) The IPO stock must be listed in main board of securities market in Hong Kong and 2.) The IPO companies must have financial data available from the database of HKEX for the fiscal year ending after the IPO.

The data collected in the comparison between offer price and its intrinsic value within its first financial year after the listing individually. Evaluation of data to the post-IPO firm may not reflect the offering price completely. Most external factors would affect the trend of stock price development to the post-IPO firm, for example, changing of inflation rate, interest rate, investment expectation and political issues to the environment. Therefore, the fluctuated and unstable stock price might be recorded in the end of its fiscal year. The accuracy of the model might be insignificant to be reflected effectively. Furthermore, the data collection is concentrating in 2006. Although there was recorded in the highest amount of funds raised in the decade from 1998, the reasonable pricing in offer might not considering in amount of market capitalization rose.

It is assumed that 1.) The data collections for forming multiple analyses to the firms are ranging a financial year of the firms after listing. The recorded stocks prices at the end of the fiscal year have implied the impact of lock-up and unlock-up agreement period to the IPO, especially the effect on the fluctuation of the firms' stock price connected to the lockup expiration date. 2.) In the view of parameter of underwriters, if the offer price has discount applied to the issues that are not underwritten, it was due to the raised risk associated with this under-pricing issues. 3.) It is assumed that all of the shares of IPO firms have full subscription. 4.)

In this year, there were two major and largest banks in the Mainland China listed in the main Board, they are Bank of China Ltd. - H Shares (stock code: 3988) and Industrial and Commercial Bank of China Ltd. - H Shares (stock code: 1398); and they have raised fund as the amount HK$86,741.44 and HK$124,947.93 respectively. Both of them have huge size and recorded in over-subscription while initial offer publicly. Moreover, an IPO firm of Ming An (Holdings) Co. Ltd merged to China Taipei in 30 October 2009. There is insufficient information to the firm. They would be ignored in my hypothesis and regression model tests, since they are out of relationship to the pool of IPO listed in 2006. Therefore, 50 IPO firms are selected in investigation. The results are tabulated in the Table 1 and 2

After the review of literatures and methodology, it is decided to examine the correlation of the following factors with offer price to the IPO firms: 1.) Earning per share (EPS), 2.) Firm Size (SIZE), 3.) Retained Ownership (RETAINED), 4.) Growth prospects (GROWTH), 5.) Leverage (LEV), 6.) Under-pricing Level (UP). It is showed that the entire of above indicative factors are related to the offer price to IPO firms. The price of OFFER would be increased in the additional amount or volume of the factors in EPS, SIZE, RETAINED and GROWTH directly, since they have positive correlation. Especially, the factors of EPS and SIZES are strengthening related to offer price with 0.684 and 0.495 respectively. On the other hand, the OFFER would be discounted in the increasing potential level of LEV and UP rationally. It shows that the OFFER is negative direction to LEV and UP. The result is tabulated into Table 3.

Table 3 Correlation of Parameters

	Offer Price y	**Earnings Per Share** x_1	**Fund Sizes** x_2	**Retained Ownerships** x_3	**Growth in BV** x_4	**Leverage Ratios** x_5	**Under-Pricing Ratio** x_6
Offer Price y	1.00						
Earnings Per Share x_1 (X1)	0.68	1.00					
Fund Sizes x_2 (X2	0.50	0.28	1.00				
Retained Ownerships x_3 (X3)	0.04	0.21	-0.19	1.00			
Growth in BV x_4 (X4) (%)	0.20	-0.14	0.14	0.04	1.00		
Leverage Ratios x_5 (X5)	-0.11	-0.16	-0.25	0.05	0.31	1.00	
Under-Pricing Ratio x_6 (X6)	-0.13	0.10	-0.22	-0.06	-0.18	-0.10	1.00

A various number of independent parameters use to project a multiple linear regression for testing the main frame of hypothesis as "With the Initial Offer Price to the IPO reflected its fundamental information significantly". There are some statistic methods with hypothesis testing for examining the significant relationship between the entire independent variables and the dependent variable. Sample t-test, F-test and Chi-square Goodness of fit test are contributed into indicating and examining the correlation between y and the group of x variables. The hypothesis set to interpret whether the individual independent variable x affect to the dependent variable y significantly. In the component of the parameters, those are recorded in the day of initial public offer and a fiscal financial year after listing in orderly. The symbols assigned for the individual parameters as follow: OFFER as y, EPS as x1, SIZES as x2, RETAINED as x3, GROWTH as x4, LEV as x5 and UP as x6. Unless the data components to x2 and x6 are collected in the date of listing, the data collected for the others variables are recorded in the end of first fiscal financial year after listing. According to the result of correlation to the entire of x to y, it is assumed that OFFER would be raised from the increasing or additional factors of x1 to x4 individually, but it would be reduced by the factors of x5 and x6.

Furthermore, all of the selected 50 IPO firms would be investigated in the testing methods. The significant confident level set in 95%.

Hypothesis is set for the t-test and F-test with y to the group of x1 to x4. Null hypothesis: Independent variables x do not positive relate to the dependent variable y significantly. Alternative hypothesis: Independent variables x do positive relate to the dependent variable y significantly. H0: $\mu Y-\mu X \leq 0$ and H1: $\mu Y-\mu X > 0$

Hypothesis is set for the t-test and F-test with y to x5 and x6. Null hypothesis: independent variable x do not negative affect to the dependent variable y significantly. Alternative hypothesis: independent variable x negative affect to the dependent variable y significantly. H0: $\mu Y-\mu X \geq 0$ and H1: $\mu Y-\mu X < 0$

It finds that the t Statistic to the independent variables x1,x4,x5,x6 are larger than value of t critical in one tail t-test. And the other two variables x2 and x3 have smaller value of t statistic generated comparing to the value of t critical level according in 95% significant confident level.

The statistical method of t-test with hypothesis is used to indicating the correlation between the entire data of independent variables and the dependent variable. There are two different group of hypothesis set to t-test according to the assumption showed above. In the view to the variables x1 to x4, a null hypothesis (H0) as "independent variables x do not positive affect to the dependent variable y significantly" is set to examine whether those individual independent parameter x related to dependent variable y appropriately, whereas the alternative hypothesis (H1) indicated as "independent variable x positive affect to the dependent variable y significantly". On the other hand, the hypothesis set for testing between individual variables x5 & x6 is showed as follow: null hypothesis : (H0) independent variable x do not negative affect to the dependent variable y significantly, alternative hypothesis (H1): independent variable x do negative affect to the dependent variable y significantly. While the situation in a value t statistic is smaller than the t critical value, the null hypothesis (H0) would be accepted statistical significantly, whereas it would be fallen into reject region of alternative hypothesis (H1).

In each case there are shown the probability that the calculated t-value is larger or less than the "tabulated" t-value (shown as "t Critical "). There are six tests applied to t-test for indicating the relationship between y1 and x1 to x6. There are different results generated after testing, the null hypothesis would be accepted in the testing in y to x2 and y to x3. The outcomes to the other four t-tests, it shows that there is insufficient evidence supported to accept (H0).

In the result of y1 to x1, the calculated t statistic is 7.5503, it is greater than the value of t Critical one tail as 1.6765, the means for the EPS is significantly different at p = 4.68 x 10-10. There is not enough evidence to accept H0. In the output of y1 to x2, it is noted that the calculated t-value -0.0156 vastly smaller than the critical t-value(one-tailed) as 1.6679; the means for the SIZES is significantly different at p = 0.4938. Null hypothesis should be accepted. The t-test for y1 to x3, it is noted that the calculated t-value 0.4293 vastly smaller than the critical t-value (one-tailed) as 1.6669; the means for the RETAINED is significantly different at p = 0.3345. Null hypothesis should be accepted. The t-test for Y1 to x4, it is noted that the calculated t-value 7.4172 vastly smaller than the critical t-value (one-tailed) as 1.6736; the means for the GROWTH is significantly different at p = 4.3299 x 10-10. There is no evidence to accept H0. The t-test for y1 to x5, it is noted that the calculated t-value 9.7112 vastly smaller than the critical t-value (one-tailed) as 1.6766; the means for the LEV is significantly different at p = 2.6385 x 10-13. There is no evidence to accept H0. The t-test for y1 to x6, it is noted that the calculated t-value 9.0962 vastly smaller than the critical t-value (one-tailed) as 1.6766; the means for the LEV is significantly different at p = 2.1199 x 10-12. There is no evidence to accept H0. In order to the result of t-test, the variables of EPS, GROWTH, LEV and UP are rational correlation to OFFER, however, the SIZE and RETAINED are not unrelated to the assumption that they have positive correlation to OFFER. Unless the statistic method of t-test used to project the relationship with hypothesis testing to the variable y to x, the testing tool as F-test and Chi square test are also applied to examine the relationship between y and numerous of x with hypothesis testing.

In the view to the individual test, it finds that all of the values of F critical level to the independent variables smaller than the tabulated F value except x2. The outcome of the individual F-test is showed as table 4. For Output of y to x1, the calculated F-value is 96.4806, it exceeds the tabulated F-critical value as 1.6153, the means for the EPS is significantly different at p = 2.3691x 10-35.

It is no evidence to accept H0. For Output of y to x2, the calculated F-value is 0.2051, it is smaller than the tabulated F-critical value as 0.6191, the means for the SIZE is significantly different at p = 9.451x 10-8. H0 should be accepted in 95% significance confident level. For Output of y to x3, the calculated F-value is 4.0201, it exceeds the tabulated F-critical value as 1.6153, the means for the RETAINED is significantly different at p = 1.9116x 10-6. It is insufficient evidence to accept H0. For Output of y to x4, the calculated F-value is 16.3842, it exceeds the tabulated F-critical value as 1.6153, the means for the GROWTH is significantly different at p = 7.5327x 10-18. It is not enough evidence to accept H0. For Output of y to x5, the calculated F-value is 79.4382, it exceeds the tabulated F-critical value as 1.6153, the means for the LEV is significantly different at p = 2.2722x 10-33. It is no evidence to accept H0. For Output of y to x6, the calculated F-value is 90.3246, it exceeds the tabulated F-critical value as 1.6153, the means for the UP is significantly different at p = 1.1164x 10-34. It is no evidence to accept H0.

Table 4 F test for Independent Variables

	EPS x_1	**Fund Size x_2**	**Retained x_3**	**Growth x_4**	**Leverage x_5**	**Under-pricing x_6**
Calculated F	96.48064032	0.205096606	4.020133583	16.384207	79.4382366	90.32459021
P(F<=f) one-tail	2.37E-35	9.45103E-08	1.91161E-06	7.53267E-18	2.27229E-33	1.11641E-34
F Critical one-tail	1.615370321	0.619053097	1.615370321	1.615370321	1.615370321	1.615370321
Outcome	F > F CL	F < F CL	F > F CL	F > F CL	F > F CL	F > F CL
Result	Reject H_0	Accept H_0	Reject H_0	Reject H_0	Reject H_0	Reject H_0

To test the correlation between y and individual variables x, the Chi-square test is also applied to the goodness of fit of x to y. In the view of Chi- square test, there are two groups created depending on below or above means to each variable. The average of y is 2.9633, and the means of x1 to x6 is 0.3327, 2.9556, 2.7784, 0.3135, -0.4314 and -0.209 respectively. In the test, the group is defined depended on the means of y. The direction of each individual variable x is considered in the situation of y. Since there are two groups form to each variable x as above mean and below mean. While the value of each group to the individual variable x is overlapped to the value of the group of y, they would be paired into same group. Therefore, two categories of group are generated after the process of pair up; they are defined as group 1 of "Below means at same time" and group 2 of "Above means at same time". There are 33 firms have set OFFER lower than the average, and 17 firms have set upper the means. The numbers of IPO fall into group 1 to each variable x are showed below: x1 is 28, x2 is 29, x3 is 17, x4 is 20, x5 is 19 and x6 is 20. The degrees of freedom equal (number of columns minus one) x (number of rows minus one) not counting the totals for rows or columns. In the test, data this gives (2-1) x (2-1) = 1. The calculated chi square statistic (x2 = 3.418), the predetermined alpha level of significance is 0.05, and the degrees of freedom (d.f. =1).

Hypothesis is set. Null hypothesis: the offer price y is not depended of independent value x individually. Alternative hypothesis: the offer price y is associated with independent value x individually. Read Table 5. H0: mean x ≠ mean y and H1: mean x = mean y. For output with y to x1, since our x2 statistic (0.673) did not exceed the critical value for 0.05 probability level (3.841) we can accept the null hypothesis that the offer price y is not depended of independent value x1. But, the two-tailed P value equals 0.4122. The association between rows (groups) and columns (outcomes) is considered to be not statistically significant. For output with y to x2, the calculated x2 equals 0.382 and do not exceed the tabulated x2. The null hypothesis should be accepted. However, the two-tailed P value equals 0.5365. The association between rows (groups) and columns (outcomes) is considered to be not statistically significant. For output with y to x3, the computed x2 equals 9.000 with 1 degree of freedom, it exceeds the critical value in the table for a 0.05 probability level, and then we can reject the null hypothesis of equal distributions. Moreover, the two-tailed P value equals 0.0027. The association between rows (groups) and columns (outcomes) is considered to be very statistically significant. For output with y to x4, the computed x2 equals 5.781 with 1 degree of freedom, it is larger than the tabulated Chi- square. There is not sufficient evidence to accept H0. The two-tailed P value equals 0.0162. The association between rows (groups) and columns (outcomes) is considered to be statistically significant.

For output with y to x5, the computed x2 equals 6.771 with 1 degree of freedom, it is larger than the tabulated Chi- square. There is not sufficient evidence to accept H0. The two-tailed P value equals 0.0339. The association between rows (groups) and columns (outcomes) is considered to be statistically significant. For output with y to x6, the results is as same as y to x4, the computed x2 equals 5.781 with 1 degree of freedom, it is larger than the tabulated Chi- square. There is not sufficient evidence to accept H0. The two-tailed P value equals 0.0162. The association between rows (groups) and columns (outcomes) is considered to be statistically significant.

Table 5 Test Results

	y_1 to x_1	y_1 to x_2	y_1 to x_3	y_1 to x_4	y_1 to x_5	y_1 to x_6
Calculatedχ^2square	0.673	0.382	9	5.781	6.771	5.781
P value	0.4122	0.5365	0.0027	0.0162	0.0093	0.0162
Degree of freedom	1	1	1	1	1	1
Significant level	0.05	0.05	0.05	0.05	0.05	0.05
χ^2 square Critical value	3.841	3.841	3.841	3.841	3.841	3.841
Outcome	$X^2 < X^2$C L (Not Significant)	$X^2 < X^2$C L (Not Significant)	$X^2 > X^2$ C L (Very Significant)	$X^2 > X^2$C L (Significant)	$X^2 > X^2$ C L (Very Significant)	$X^2 > X^2$ C L (Significant)
Result	Accept H_0	Accept H_0	Reject H_0	Reject H_0	Reject H_0	Reject H_0

Above those results to each test, it finds that a consistence output to the variables of x1, x4 and x6 according to the assumptions. It supports that they are good fit and correlated to y. There are different results for the variable x2 and x3. In the view of the test results to x2, it showed that the null hypothesis of independent variable x does not positively affect to the dependent variable y significantly should be accepted after t-test and F-test. In addition, the null hypothesis of the offer price y is not depended of independent value x individually is accepted in Chi-square test, although it is considered to be not statistically significant. In the test results to x3, it finds that the variable x3 (RETAINED) is correlated and good fit to OFFER according to F-test and Chi-square test with very statistically significant, though it finds that only the result from t-test which is inconsistent to the assumption. Hence, it is decided to design two models of multiple linear regressions for testing the relationship and coefficient between the individual parameters to OFFER. One regression model would be applied to entire parameters, and the other one is without carrying the variable of SIZE. Since it is insufficient significant to those group of hypothesis tests.

Multiple linear regression models is trying to form the relationship between two or more explanatory variables and a response variable by fitting to plot out a linear equation to observed data. Every value of the independent variable x is associated with a value of the dependent variable y. The population regression line for p explanatory variables x1, x2, ... , xn is defined as an equation to be Meany =βo + β1x1 + β2 x2 + β3x3 + …βnxn+ Residuals. This line describes how the mean response Meany changes with the explanatory variables. The observed values for y change about their means Meany and are assumed to have the same standard deviation . The fitted values b0, b1, ..., bp estimate the parametersβo,β1,…,βn of the population regression line. In the study, the offer price of IPO was assumed to give an impact to under-pricing or over-pricing and correlated variables involve the following factors:- (I) Earnings per share (EPS), (II)Firm Size (SIZE), (III) Retained Ownership (RETAINED), (IV) Growth prospects (GROWTH), (V) Leverage (LEV), (VI) Under-pricing Level (UP).

The multiple regression equation is represented by Meany=βo + β1x1 + β2x2 + β3x3 +β4x4+ β5x5+ β6x6 +Residuals where y is the value of the dependent variable y for the offer price of IPO; β is the Slope (Beta Coefficient) for the parameter individually. According to the form of multiple regressions set up showed above, the formula for the related regression testing as follow: OFFER = βo + β1EPS + β2SIZE + β3RETAINED + β4GROWTH +β5LEV + β6UP + Residuals

Variables for (I) Earnings per share (EPS), (II) Firm Size (SIZE), (III) Retained Ownership (RETAINED), (IV) Growth prospects (GROWTH), (V) Leverage (LEV), (VI) Under-pricing Level (UP) Data were extracted from the web. The raw data focused on the new IPO listing in 2006 were tabulated in Table 3 and 4. Two test cases including a test with whole of those independent variables and a test with whole of those independent variables without x2 (SIZE). They are taking into account to plot out the effect on the offer price of IPO denoted by y, as a result of the variables in the model.

The following test cases were considered in the multiple regression analysis:

1. Model for variables $x_1x_2x_3x_4x_5x_6$
2. Model for variables $x_1x_3x_4x_5x_6$

Output of the multiple regression analysis conducted for the above cases are tabulated table 6 to 7.

Table 6 Regression

Regression Statistics						
Multiple R	0.7977					
R Square	0.6364					
Adjusted R Square	0.5845					
Standard Error	1.5851					
Observations	49.0000					
ANOVA						
	df	*SS*	*MS*	*F*	*Significance F*	
Regression	6	184.6948	30.7825	12.2521	0.0000	
Residual	42	105.5216	2.5124			
Total	48	290.2164				
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.3151	0.7715	0.4084	0.6850	-1.2418	1.8720
0.2280	6.7264	1.0368	6.4878	0.0000	4.6341	8.8187
0.0983	0.0954	0.0514	1.8585	0.0701	-0.0082	0.1991
0.1429	-0.1880	0.2038	-0.9225	0.3615	-0.5993	0.2233
0.1450	1.0249	0.4165	2.4607	0.0181	0.1843	1.8654
-0.4025	-0.2964	0.9239	-0.3207	0.7500	-2.1609	1.5682
-0.0531	-1.0625	0.9454	-1.1239	0.2674	-2.9704	0.8453

Table 7 Regression (Con't)

Regression Statistics						
Multiple R	0.7788					
R Square	0.6065					
Adjusted R	0.5607					
Standard Error	1.6297					
Observations	49.0000					
ANOVA						
	df	*SS*	*MS*	*F*	*Significance F*	
Regression	5	176.0168	35.2034	13.2552	0.0000	
Residual	43	114.1996	2.6558			
Total	48	290.2164				
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.3200	0.7932	0.4034	0.6886	-1.2797	1.9196
0.2280	7.4685	0.9837	7.5920	0.0000	5.4846	9.4524
0.1429	-0.3163	0.1971	-1.6042	0.1160	-0.7138	0.0813
0.1450	1.2283	0.4132	2.9729	0.0048	0.3951	2.0615
-0.4025	-0.8147	0.9056	-0.8995	0.3734	-2.6410	1.0117
-0.0531	-1.5774	0.9293	-1.6974	0.0969	-3.4515	0.2968

4. Data finding and Analysis

As mentioned, variables x1x2x3x4x5x6 respectively representing the following parameters were considered in the analysis; namely, (I) Earnings per share (EPS), (II)Firm Size (SIZE), (III) Retained Ownership (RETAINED), (IV) Growth prospects (GROWTH), (V) Leverage (LEV), (VI) Under-pricing Level (UP).

In an attempt to measure the effect of the offer price of IPO in Hong Kong correlating to the variables in the model, and they are also introduced in the test cases. Both of these two test cases of different combination of the variables in the model concentrating in 2006 including the following were carried out in the multiple regression analysis:-

1. Model for variables x1x2x3x4x5x6
2. Model for variables x1x3x4x5x6

There are high values of R, R2 and Adjusted R2 generated in both of the models; all of them have exceeded 0.77, 0.6 and 0.5 in both of the tests and summarized in the Table 6 and 7. In order to both output to those tests, R2 are found to exceed 0.6. It means that the variability of the Y values around the regression line is 1- 0.6 times of the original variance. Therefore, it has more than 60% of the original variability, and left with less than 40% in residual variability. Therefore, the variability of the determinants around the regression line relative to the overall variability is large; it is good fit regarding the predictions to the regression equation.

There is hypothesis setup for implement to multiple regression technique. Null hypothesis (H0): the Initial Offer Price to the IPO was not reflected its fundamental information significantly. Alternative hypothesis (H1): the Initial Offer Price to the IPO was reflected its fundamental information significantly. H0: $\mu Y-\mu X \geq 0$, H1: $\mu Y-\mu X< 0$. The null hypothesis is defined in "With the Initial Offer Price to the IPO was not reflected its fundamental information significantly". According to the part of ANOVA investigation to these two test cases, the calculated F-values also exceed the value of F critical level. It shows that it is not sufficient evidence to support in acceptance of null hypothesis. In the model 1, the value of calculated F is 12.2521 and exceeds the tabulated value of F critical level as 2.32 referring the degree of freedom in (6, 42). Moreover the means for the model 1 is significantly different at p = 6.3991x 10-8. In the model 2, the value of calculated F is 13.2552 and exceeds the tabulated value of F critical level as 2.43 referring the degree of freedom in (5, 43). Moreover the means for the model 1 is significantly different at p = 7.8691x10-8.

In the view to the coefficient, it measures the level of the variability to each independent variable with the dependent variable. In addition, the sign as positive and negative on the coefficient denominate the direction of the effect. The sign of positive on the coefficients is given the magnitude of the dependent variables expected in increasing with increment of independent variable, whereas, the sign of negative means that there is decreasing size of coefficient from independent variables to dependent variables. According to both two test cases, the variables x1 x2 x4 have generated in positive value in Coefficient. The table 8 is summarized the detail of Coefficient between the entire variables to y in those two models. The details individual variables x to y in both test cases are showed below:

Table 8 Summary of Outcomes (Coefficient)

Variables		**Coefficient Model 1**	**P-value**	**Coefficient Model 2**	**P-value**	**Relative**
x_1	**Earnings per share**	6.7264238	7.89E-08	7.468518265	1.81E-09	"+ve"
x_2	**Fund Sizes**	0.09545	0.070114	NIL	NIL	"+ve"
x_3	**Retained Ownerships**	-0.187996	0.36153	-0.316252022	0.115994	"-ve"
x_4	**Growth in BV**	1.0248672	0.018061	1.228298627	0.004818	"+ve"
x_5	**Leverage Ratios**	-0.296351	0.749992	-0.81465622	0.373372	"-ve"
x_6	**Under-pricing Ratio**	-1.062525	0.267428	-1.577364403	0.096857	"-ve"

In model 1, the coefficient of y to x1 is 6.7264 and the P-value is 7.89 x10-8. In the model 2, the coefficient is equal to 7.4685, and the P-value is 1.8066 x 10-9. Both of the tests, it shows that EPS is positive coefficient to OFFER and very statistically significant. It has consistence outcome to t-test and F-test, there are sufficient evidence to support that the OFFER is influenced in EPS positively. Since the parameter x2 is not sufficient evidence to support that is highly correlation to y proof in t-test and F-test. Therefore, it is only contributed into the model 1 of multiple regression technique for comparing the results to model 2 as the factor SIZE would be ignored. The value of coefficient of y to x2 is 0.0955 and the P-value is 0.0701. It has positive coefficient but the P-value exceeds to tabulated P-value as 0.05, therefore, the result is not statistically significant. In model 1, the coefficient of y to x3 is -0.1879 and the P-value is 0.3615. In the model 2, the coefficient is equal to -0.3163, and the P-value is 0.1159.

Although both of the tests, it shows that RETAINED is negative coefficient to OFFER, it is not statistically significant due to P-value higher than 0.05. According to the hypothesis tests in F-test and Chi square test, it finds that the variable x3 is correlated to y positively. There are different results generated between the both of multiple regression technique and those hypothesis tests. However, the outputs in those models are not significance, the results in F-test and Chi square test should be also accepted. The OFFER is influenced in RETAINED positively. According to the literature reviews, it proof that the offer price of IPO should be raised with a higher ratio of retained ownership. It is conducted to the volume of supply and demand. The offer price would be increased in reducing publicly supply under a constant volume in demand circumstance. In model 1, the coefficient of y to x4 is 1.0249 and the P-value is 0.0181. In the model 2, the coefficient is equal to 1.2283, and the P-value is 0.0048. Both of the tests, it shows that GROWTH is positive coefficient to OFFER and very statistically significant.

It has consistence outcome to t-test and F-test, there are sufficient evidence to support that the OFFER is influenced in GROWTH positively. In model 1, the coefficient of y to x5 is -0.2964 and the P-value is 0.7499. In the model 2, the coefficient is equal to -0.8147, and the P-value is 0.3734. Both of the tests, it shows that LEV is negative coefficient to OFFER. It is consistence value to the assumption pre-set in hypothesis tests. However, the P-value is higher than 0.05, the results from those two models are not significant. Therefore, the results in a group of hypothesis tests 3 should be also accepted. The OFFER is influenced in LEV negatively. According to the literature reviews, it proves that the offer price of IPO should be discounted with a higher leverage ratio to the firm. In model 1, the coefficient of y to x6 is -1.0625 and the P-value is 0.2674. In the model 2, the coefficient is equal to -1.5774, and the P-value is 0.0969. Both of the tests, it shows that UP is negative coefficient to OFFER. It is consistence value to the assumption pre-set in hypothesis tests. However, the P-value is higher than 0.05, the results from those two models are not significant. Therefore, the results in a group of hypothesis tests should be also accepted, since it is fully fulfilled in the group of hypothesis tests as the OFFER is influenced in UP negatively. According to the literature reviews, it proof that the offer price of IPO should be discounted with a higher under-pricing level to the firm.

To summarize the results to both of those models, the hypothesis of With the Initial Offer Price to the IPO reflected its fundamental information significantly is accepted in the output of ANOVA. The entire of independent parameters have high goodness of fit to y due to R2 exceed 0.6. Although there is high value in (R2) in both regression models, there is almost 40% in residual variability. Furthermore, there are different values in coefficients to various parameters. There are some issues to elaborate the problem of R2 do not equal to 1. It would be the matter of sample size; the sample selection is only focused on the internal financial information IPO listed in 2006. The other issues such as external economic circumstance, interest rate, and stock market trend and investment sentiment of investors should be considered in the regression model. Boyan Jovanovic and Peter L. Rousseau (2004) claimed that the fluctuation of interest rate is higher related into IPO investment. The high interest rate maintained in market, it fights against to the investment sentiments in IPO and stock market.

5. Conclusion

In Hong Kong, the financial indicators tend to fall rapidly year on year. There are more and more IPO firms applied to list on main board in Hong Kong securities market. And it is a trend that IPO is offer in under-pricing for enhancing attractiveness. However, it increasing attractive in pricing, the under-pricing might not be represented the OFFER is selling in reasonable level. In fact, refer to the IPO listed in 2006, there are 45 against 53 firms have OFFER as discount, but they have negative growth rate comparing one fiscal year after listing. There are 10 firms with under-pricing offer have negative growth after one fiscal year. Moreover, comparing to the stock price in the OFFER and the closing price in the date of its completely fiscal year, there are 15 IPO firms have recorded in lose comparing in original OFFER. The ratio is 28.3% of firms have regressed. Actually, the investment expectation should not only depending on the depth of UP in offer. The short-term profits but not sustainable and fluctuated investment strategy is not systemically. Continuous and long-term growth prospect to the firms are important in investment. So, strong financial performance and good development potential to the company should be priority chosen.

The market is assumed efficient in Hong Kong, it adjusted rapidly to the new information time to time. The stock prices are adjusted rapidly to the UP of initial public offers. Investors are suggested to use different models to determine the value of an IPO than issuers use to determine value for establishing an offer price.

According to above tests, it showed that OFFER is influenced in EPS, RETAINED, GROWTH, LEV and UP significantly. In the study, it finds that those parameters have good fit to regression and likely relationship with the offer price. Since the IPO is new launch in public, there is lack of financial information or records review to market. Prospectus of the IPO firm is only available to public for study, it is only conducted the current two fiscal financial year records to the firms. The low penetration to the firm is insufficient for investment intention. The strategy of under-pricing as offer tries to recover the problem of lack of confidence in investors. According to the literature review and methodology study, the variable of UP is implied the responsibilities of underwriters. While the initial price offer in discount, there is assumed without underwritten. More risky issues have implied to non-disclosed from the firms. Although working capital may increase after listing, there is no corresponding improvement in operational management. Obviously, there is an inverse relationship between OFFER and LEV, the higher leverage ratio to the firm, the more discount offer in pricing. Hence, there are some issues should be considered to the investors not only concentrating in the UP to the offer price only. The matters of winner's curse (Rock, 1986) and anchoring effects showed that problems of agency problem and information asymmetric found in stock trading. A quality of the firms should be more important to be focused on.

It should ensure the capital raised through IPO is used appropriately. The plan of usage of fund is adapted to the prospectus announced. The listed companies need to thoroughly transform their management mechanisms, establishing efficient corporate governance structures and corresponding stock option incentive mechanisms. Moreover, the operations and financial matters of listed companies need to be improved. They should improve their asset and liability structures through debt-for-equity swaps and refinancing. The improvement in the company's operational performance can strengthen their competitive in international markets. The listed firms should create their core element in the market and allowing them to exercise the function of market stabilization.

References

Aharony, J., C. W. J. Lee, and T. J. Wong. (2000). Financial packaging of IPO firms in China. Journal of Accounting Research 38 (Spring): 103–126.

Barth, M., and G. Clinch, (1999), Scale effects in capital markets-based accounting research, Working paper (Australian Graduate School of Management, Sydney, and Stanford University, Stanford.

B. M. Neuberger and C. A. La Chapelle. (1983) "Unseasoned New Issue Price Performance on Three Tiers: 1975-1980." Financial Management 12 (Autumn 1983), 23-28.

Boatsman, J., and E. Baskin, 1981, Asset valuation with incomplete markets, Accounting Review 56, 38–53.

Brown, P., A. Clarke, and J. C. Y. How, (2000), The accuracy of management dividend forecasts in Australia, Pacific-Basin Finance Journal 8, 309–331.

Boyan Jovanovic Peter L. Rousseau., (2004). Interest Rates and Initial Public Offerings, National Bureau of Economic Research, Working Paper 10298.

Chapman, G. B., Bornstein, B. H., (1996). The more you ask for, the more you get: anchoring in personal injury verdicts. Applied Cognitive Psychology 10 (6), 519- 540.

Chapman, G.B., Johnson, E.J., (2002), Incorporating the irrelevant: Anchors in judgments of belief and value. The psychology of judgment: Heuristics and biases, Cambridge University Press, New York.

Chen, G., M. Firth, and J. B. Kim. (2000). The post-issue market performance of initial public offerings in China's new stock markets. Review of Quantitative Finance and Accounting 14 (June): 319–339.

Chen, J. (2001). Ownership structure as corporate governance mechanism: Evidence from Chinese listed companies. Economics of Planning 34:53–72.

China Securities Regulatory Commission. (2000). China securities and futures statistical yearbook, 2000. Beijing: Zhongguo Caizheng Jingji Press.

Cook, D. O.; R. Kieschnick; and R. A. Van Ness. (2006) "On the Marketing of IPOs." Journal of Financial Economics, 82 , 35–61.

Corwin, S. A. (2003) "The Determinants of Under-pricing for Seasoned Equity Offers." Journal of Finance, 58, 2249–2279.

Dawson, S.M. (1984a), 'Overbidding for New Share Issues', Singapore Stock Exchange Journal of Finance, pp. 14 -2 7.

Fahlenbrach, Rudiger, (2008), "Founder-CEOs, Investment Decisions, and Stock Market Performance," Journal of Financial and Quantitative Analysis, pp.23-38

Fama, F., (1969), "Efficient Capital Markets; A Review of Theory and Empirical Work," Journal of Finance, 25, No.2, Papers and Proceedings of the Twenty-Eighth Annual Meeting of the American Finance Association New York, N.Y. December, 28-30, 1969 (May, 1970), pp. 383-417

Fama, Eugene F. and Kenneth R. French, (2004), "New Lists: Fundamentals and Survival Rates", Journal of Financial Economics 72, 229–269.

Field, L., and G. Hanka, (2001), "The Expiration of IPO Share Lockups," Journal of Finance, 56, 471-500.

Geoffrey C., and C. Swift, (2009), Overreaction in the thrift IPO aftermarket, Journal of Banking & Finance 33(7), pp. 1285-1298.". http://digitalcommons.unl.edu/financefacpub/5/.

Graham, John R., Cam Harvey, and Shiva Rajgopal, (2005), "The Economic Implications of Corporate Financial Reporting", Journal of Accounting and Economics 40, 3–73.

Greene, W. H. (1993). Econometric analysis. New York: Macmillan.

Hayek, F. A. (1960). The constitution of liberty. Chicago: University of Chicago Press.

Grinblatt, M., and C. Y. Hwang, (1989), Signalling and the pricing of new issues, Journal of Finance 44, 393–419.

Harris, L. E., and E. Gurel. "Price and Volume Effects Associated with Changes in the S&P 500 List: New Evidence for the Existence of Price Pressures." Journal of Finance, 41 (1986), 815–829.

Ibbotson, R.G. (1975), 'Price Performance of Common Stock New Issues', Journal of Financial Economics {September}, pp. 235-72.

J. G. McDonald and A. K. Fisher. (1972) "New Issue Stock Price Behavior." Journal of Finance 27 (March), 97-102.

Keim, D., (1983), "Size related anomalies and stock return seasonality: Further empirical evidence," Journal of Financial Economics, 12, 13-32.

Leland, H., and D. Pyle, (1977), "Informational Asymmetries, Financials Structures and Financial Intermediation," Journal of Finance, 32, 371-387.

Ljungqvist, A.; F. Marston; and W. J. Wilhelm, Jr. (2009) "Scaling the Hierarchy: How and Why Investment Banks Compete for Syndicate Co-Management Appointments." Review of Financial Studies, 22, 3977–4007.

Loughran, T., and J. R. Ritter. (2004) "Why Has IPO Under-pricing Changed Over Time?" Financial Management, 33, 5–37

Lilienfeld-Toal von, U., (2009) ,"Why Managers Hold Shares of Their Firm: Stock Returns and Lockup Agreements", Working paper Stockholm School of Economics

Lilienfeld-Toal von, U. and S. Ruenzi, (2008) "Why Manager Hold Shares of Their Firm: An Empirical Analysis,´ Working paper.

Loughran, T., J. R. Ritter, and K. Rydqvist, (1994), Initial public offerings: international insights, Pacific-Basin Finance Journal 2, 165–199.

Lubos Pastor, Lucian Taylor, Pietro Veronesi, (2006), Entrepreneurial Learning, The IPO Decision, and the Post-IPO in Firm Profitability, Working Paper 12792 of National Bureau of Economic Research

McDonald, J.G. and A.K. Fisher (1972), 'New Issue Stock Price Behavior', Journal of Finance (March), pp. 97-102.

MacKinlay, C., (1997), " Event Studies in Economics and Finance," Journal of Economic Literature, 35, 13-39

Miller, E. M. (1977) "Risk, Uncertainty and Divergence of Opinion." Journal of Finance, 32 , 1151– 1168.

Ofek, E., and M.Richardson, (2000), "The IPO lockup period: Implications for market efficiency and downward sloping demand curves," Unpublished working paper, Stern School of Business, New York University.

Steven M. Dawson, (1985) Secondary Stock Market Performance of Initial Public Offers, Hong Kong, Singapore and Malaysia: 1978-1984, Journal of Business Finance & Accounting, 14(1) Spring 1

Steven X. Zheng, David A. Stangeland (2007), IPO under-pricing, firm quality, and analyst forecasts, Financial Management (Financial Management Association)

Titman, S., Trueman, B., (1986). Information quality and the valuation of new issues. Journal of Accounting and Economics 8 (2), 159-172.

Tversky, A., Kahneman, D., (1974). Judgment under uncertainty: Heuristics and biases. Science 185 (4157), 1124-1131.

Purnanandam, A. K., and B. Swaminathan, (2002), Are IPOs underpriced? Working paper (Cornell University).

Rock, Kevin, (1986), Why new issues are underpriced. Journal of Financial Economics 15,187-212.

Rogers, W. (1993) "Regression Standard Errors in Clustered Samples." Stata Technical Bulletin, 13 , 19–23.

Sherman, A. E. (2000) "IPOs and Long-Term Relationships: An Advantage of Book Building." Review of Financial Studies, 13 , 697–714.

Sherman, A. E. (2005) "Global Trends in IPO Methods: Book Building versus Auctions with Endogenous Entry." Journal of Financial Economics, 78 , 615–649.

Zhang, D. (2004) "Why Do IPO Underwriters Allocate Extra Shares When They Expect to Buy Them Back?" Journal of Financial and Quantitative Analysis, 39, 571–594.