ROLE OF MARKET SENTIMENT, ECONOMIC CONDITION AND ACCOUNTING INDICATORS ON INITIAL PUBLIC OFFERINGS (IPO): A HIERARCHICAL ANALYSIS

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Abstract

The IPO market plays an important role in an economy, enabling companies to raise capital through the issuance and sales of shares. Extensive research on IPOs initial return (under/over pricing) has been undertaken all over the world, and it has been widely documented that underpricing exist at different levels and is said to be a compensation for post-IPO uncertainty. This study looks in depth into the initial returns of IPOs over the period 2001 – 2010. A correlation, multiple linear regression and step-wise regression is undertaken to identify the impact of economic factors, market sentiments and projected financial variables on the over/under pricing of IPO. The results indicate that the extent of underpricing of IPOs have significantly decreased compared to the 80's and 90's. There isn't any clear trend in the under or over pricing of IPOs for the period of study (2001 – 2010) except that 2004 shows an underpricing of 22.47%, whilst 2009 shows an overpricing of 15.09%. Generally, no correlation or association were found between the economic variables (gross domestic product, Import, Export & Foreign Portfolio Investments), Market Sentiments (Kuala Lumpur Composite Index & Turnover) and Companies Financial Variables (Dividend Yield, Price-earnings ratio, Earnings per share & Net Tangible Assets).

Key words: IPO, underpricing, accounting indicators, market sentiments

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1.0 Introduction

IPO market in Malaysia plays an important role in the economy, enabling companies to raise capital through the issuance and sales of shares. Extensive research on an IPOs initial return (the percentage of change between the offer price and the first day's closing price) has been undertaken world-wide and it has been widely documented that a positive initial return exist on the first day of trading. This positive initial return on the first day of trading is termed as underpricing in the finance literature. The extent of IPO underpricing varies between companies, countries and years and this is said to be a compensation for post-IPO uncertainty. This study intends to extend the existing literature on the initial public offerings by empirically testing the impact of market sentiments (proxied by Kuala Lumpur Composite Index and Turnover), economic conditions (gross domestic product (GDP), import, export and foreign portfolio investment (FPI)) and companies projected financial indicators (earnings per share, price-earnings ratio, net tangible assets and dividend yield) on the under pricing of Malaysian IPOs.

2.0 Literature Review

Extensive research has been undertaken worldwide, discussing in depth various areas of Initial Public Offerings. In the Malaysian context, a considerable amount of research had been undertaken on IPOs, which can be categorized into two main tracks; the degree of IPO under-pricing (Dawson,1987; Sufar, 1993; Mohamed et al. 1994; Paudyal, 1998; Wong and Udin, 2003) and the aftermarket performance (Yong, 1997; Yong, 2001; Jelic et al., 2001 Wan Husin, 2005).

Other studies undertaken in the Malaysian context includes; underwriters' reputation, Jelic et al., (2001); proportion of shares allocated to Bumiputera investors', Saadouni et. al (2005); privatization of IPOs, Paudyal et al., (1998); firm size, (Yong, 1996); share lock-up, Wan Husin (2005); oversubscription ratio (Yong, 1996) and stock listing time lag, Wong and Udin (2003)

Based on the extant literature, issues that have not been dealt in depth in the Malaysian context with regard to initial returns are factors such as market sentiments, economic factors and the

projected financial indicators of the firms going public. This study will attempt to identify the impact of the abovementioned on the initial return.

2.1 Market sentiment

Market sentiment is very much a behavioral issue and it draws strongly on research conducted by psychologist. Based on a study by Haifeng Guo and Robert Brooks (2009), market sentiments contribute towards a high volume of new offerings with high initial returns (underpricing) because the uncertainty and risks are comparatively very low when the stock market encounters positive market sentiment. Their paper used Markov's regime switching models to detect hot and cold cycles and the turning points for the Chinese A-share IPO market across 1994 to 2005. It was documented that the features of a hot period include a large volume of new offerings, high underpricing, strong market conditions, high IPO subscription rate and an increase in listing speed.

Similarly, Oehler et al., (2004), used a data set of 410 German IPOs for the period 1997-2001 and viewed that the unusually high first-day returns is a combination of market reaction driven by ex-ante uncertainty and investor sentiment. During periods of positive market sentiments, ex-ante uncertainty is not the dominating source for under pricing but it is the investor sentiment that dominates the determination of the initial return. Cliff (2004), further analysed sentiments in term of institutional and individual/retail investors, so as to see if there are different classes of investor sentiment. It was noted that sentiments affected both individual/retail and institutional investors, contrary to the common believe that sentiments primarily affect individual investors and small stocks. Nevertheless, the empirical evidence suggested that the relationship between institutional sentiment and underpricing to be more significant compared to individual/retail investors.

François Derrien (2005) found that noise traders (who trade based on market sentiments and not fundamentals) too have an impact on the underpricing and aftermarket impact on the IPOs. Bullish noise traders are ready to buy IPO shares at high prices, resulting in a positive initial return on the first day of the IPO trading and simultaneously causing an over-pricing of these

IPOs. The predictions of the model are supported by an empirical analysis on 62 book-built IPOs in which a fraction of the shares were reserved for individual investors. It was observed that the individual investors' demand was strongly correlated with market conditions that prevailed at the time of the offering and their demand had a large impact on the IPO price; it was positively correlated with initial return and turnover, and it was negatively correlated with the long-term stock price performance of IPO shares.

Jean Helwege and Nellie Liang (2004) also examined IPOs in hot and cold markets, and found that the IPOs issued in hot markets (denoting positive market sentiments) had unusually high volume of offerings, severe under pricing, frequent oversubscription of offerings and greater institutional ownership. In contrast, cold IPO markets have much lower issuance, less under pricing, and fewer instances of oversubscription. The authors found that IPOs in both hot and cold markets were drawn from the same handful of industries, and that cold markets may actually exhibit more industry concentration. The lower industry concentration in hot markets arises because many industries tend to have their hot markets at the same time. Thus, it can be concluded from the above literature that market sentiments play a pivotal role in the determination of the initial returns of firms going public.

2.2 Economic Factors

Minimal study, particularly in Malaysia had been undertaken to analyze the association between the economic factors and the underpricing of IPOs. Hiromasa Nakamura (2003) in his doctoral work, analysed the relationship between initial returns of the IPO market and the macro-economy of 21 countries (developed and developing). It was noted that the real gross domestic product (GDP) and inflation have high impacts on initial returns, which means that real productive power (proxied by GDP and inflation) of each country might influence investors' expectations. The author concluded that the rate of growth of real GDP in a country and initial returns in the IPO market is correlated because it was noticed that if a country's growth of real GDP was high, there was high rate of initial returns in the IPO market in the countries observed. Since no work had

been undertaken in this area in Malaysia, this study will look into economic factors such as Gross Domestic Product (GDP) and Foreign Portfolio Investments (FPI), Imports and Exports' impact on the initial returns of IPOs.

2.3 Companies Projected Accounting Indicators

Riffe and Thompson (2000) researched on the relationship between IPO values and accounting information. They found that IPOs' first day return is positively related to the firm characteristics, i.e., price-earnings (P/E), market-to-book, and price-to-sales multiples. In a similar research, Rajesh Aggarwal et al., (2009) focused on three time periods: 1986-1990, January 1997 to March 2000 (boom period) and April 2000 to December 2001 (crash period) and found that firms with more negative earnings have higher valuations (first day initial return) than firm with less negative earnings. Finally, Bhabra and Pettway (2003) suggested that financial, operating and offering characteristics are only modestly related to initial stock returns, whilst Li (2008) who researched on the impact the net assets per share (NTA) and IPO initial return found no empirical evidence to support the relationship.

3.0 Purpose and significance of the research

Despite the growing number of studies in the area of under-pricing in Malaysia, minimal research has been undertaken with regard to the significance of economic factors, market sentiments and projected accounting variables on the extent of initial returns of new securities. Thus, thi study intends to do the following analysis for the period 2000 - 2009:

i. Analyse in detail the initial returns of IPOs by year, by quarter and by industry.

ii. Analyse the extent of correlation between initial return of IPOs and the following factors: market sentiments, economic factors and projected financial variables.

iii. Analyse the relationship between initial returns of IPOs and the following factors: market sentiments, economic factors and projected financial variables.

4.0 Data and Methodology

Data for this study are obtained from various sources, including CEIC, EMIS Bursa Malaysia website (www.bursamalaysia.com.my) and Company records at Bursa Library. For each company in the analysis, information on daily share prices, offer price, offer & listing date are collected. Kuala Lumpur Composite Index (KLCI) for the respective period is used as proxy for the market returns.

To test on the market sentiments, two proxies are used: Kuala Lumpur Composite Index (FTSE KLCI) and Market turnover. As for the economic indicators, information on gross domestic product (GDP), export, import and foreign portfolio investment (FPI) are collected. Lastly, data on the projected financial variables (earnings per share (EPS), net tangible assets (NTA), price-earnings ratio (PE ratio) and dividend yield (DY) are obtained from the company prospectus.

The first day return, which acts as a proxy for the degree of initial returns will be computed by dividing the difference between closing price of the first trading day and the offer price by the offer price,

$$IR = \frac{P_1 - P_0}{P_0}$$

This will be further adjusted to take into account the market returns.

$$\text{Market adjusted IR (MAIR)} = \frac{P_1 - P_0}{P_0} - \frac{M_1 - M_0}{M_0}$$

IR = Initial Return

P_1 - First day price

P_0 - Offer rprice

M_1 - KLSE composite index on the first day of trading

M_0 - KLSE composite index on the application closing day

Hypotheses test are done using the conventional t-values.

A correlation and regression test are run to investigate the correlation and the relationship between the abovementioned market sentiment proxies, economic indicators and company's projected financial data and the initial returns calculated above. For the regression test, Multiple Ordinary Least Square (OLS) regression will be run, whereby the Market Adjusted Initial Return (MAIR) will be the dependent variable. The model tested is as below:

$$\mathbf{MAIR = \beta_0 + \beta_1 Index + \beta_2 T/Over + \beta_3 GDP + \beta_4 Exp + \beta_5 Imp +}$$

$$\mathbf{\beta_6 FPI + \beta_7 EPS + \beta_8 PE + \beta_9 ROE + \beta_{10} NTA}$$

The following variables represent the economic conditions:

- Gross Domestic Product (GDP) - the quarterly GDP for the Malaysian economy for the quarter before the listing quarter.
- Foreign Portfolio Investment (FPI) - the quarterly FPI for the Malaysian economy for the quarter before the listing quarter.
- Export (Exp) - the quarterly export data for the Malaysian economy for the quarter before the listing quarter.
- Import (Imp) - the quarterly import for the Malaysian economy for the quarter before the listing quarter.

The following variables represents the market sentiment, which is proxied by:

- Kuala Lumpur Composite index (Index) – the average returns on the KLCI for the quarter before the listing quarter
- Turnover (T/Over) – the average turnover in Bursa Malaysia for the quarter before the listing quarter.

The following variables represent the financial data of the listed companies:

- Earnings per share (EPS) – projected EPS from the prospectus of the companies.
- Price Earnings Ratio (P/E) – the projected PE ratio of the respective companies from the prospectus.
- Net Tangible Assets (NTA) – projected NTA of the companies from the prospectus.
- Dividend Yield (DY) – projected DY of the companies from the prospectus.

5.0 Empirical Analysis and Discussion

As stated above, the first part of this study looks into the extent of initial returns of IPOs by year, by quarter and by industry for the period 2000 – 2009. The empirical evidence obtained is as below:

Table 1: Underpricing of initial public offerings between 2000 - 2009

Year	Mean	Std. Deviation	N
2001	-1.92	55.189	38
2002	-5.80	75.840	13
2003	1.41	19.860	108
2004	22.47	58.624	43
2005	1.82	16.940	38
2006	-.67	3.582	15
2007	-6.97	41.063	27
2008	9.49	41.845	24
2009	-15.09	29.117	8
2010	4.73	29.483	15

Dependent Variable: market adjusted initial return

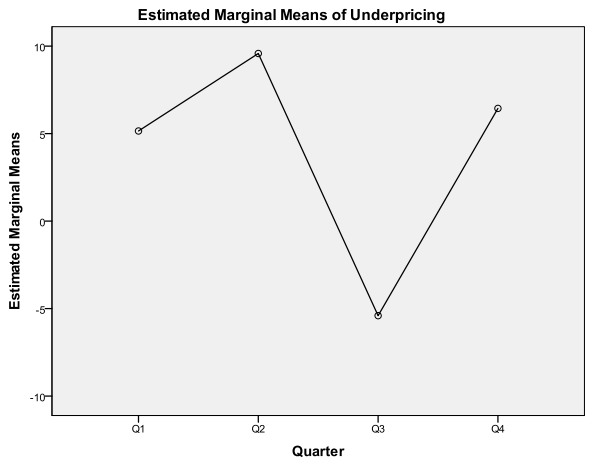
Table 1 above shows the underpricing of initial public offerings in the Malaysian Stock Market (Bursa Malaysia) from 2001 – 2010. It shows no particular trend in the levels of underpricing over the years (2001-2010). Year 2004 has the highest level of underpricing (22.47%) whilst 2009 shows an overpricing (-15.07%) of IPOs. It is conjectured that initial returns are higher during a buoyant economy, where else 2009 was a period where the economy was experiencing the aftermath of the Global Financial Crisis.

Table 2 : Underpricing of initial public offerings by quarter

Quarter	Mean	Std. Deviation	N
Q1	5.15	53.147	68
Q2	9.58	38.655	89
Q3	-5.40	23.687	109
Q4	6.44	42.587	63
Total	3.10	39.292	329

Dependent Variable: market adjusted initial return

Figure 1: Estimated Marginal Means of underpricing by Quarter



Further to the above analysis by year, this study analyzed the underpricing of initial public offerings by quarter for the entire period of 2001 – 2010 (Table 2 and Figure 1). The empirical results above show that all quarters (except Quarter 3) indicate an underpricing of IPOs. The

highest level of underpricing is experienced in Quarter 2 whilst quarter 3 has the highest level of overpricing. The probable reason for the overpricing could be that most of the companies have 30th June as their financial year-end and this may contribute towards market sentiment.

Table 3: Underpricing by Sector

Industry	Mean	Std. Deviation	N
Construction	-.41	48.219	11
Consumer Products	2.16	29.422	49
Finance and banking	3.73	10.870	10
Industrial Products	-1.38	39.145	77
Plantation	-1.41	36.984	8
Property	-3.29	5.667	11
Technology	-.65	32.595	59
TRADING/SERVICES	-2.01	40.121	51
Total	-.56	34.909	276

Dependent Variable: market adjusted initial return

Figure 2 : Underpricing by Sector

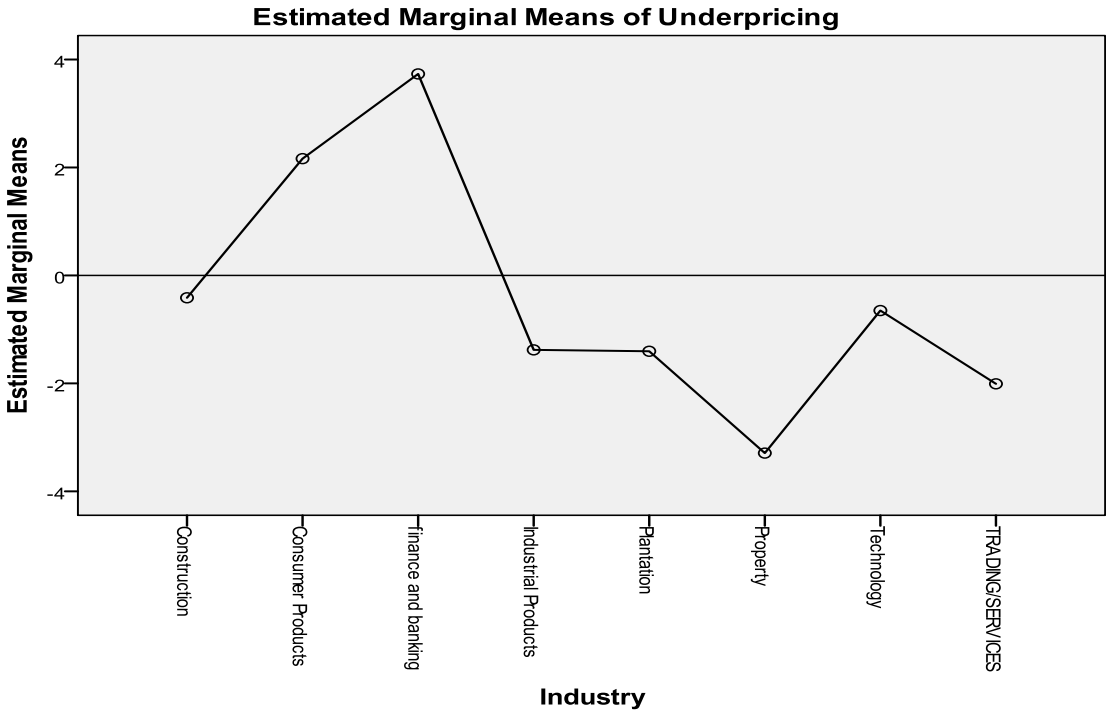


Table 3 and figure 2 above shows the empirical evidence of underpricing by sector: Construction, consumer product, finance & banking, industrial product, plantation, property, technology and trading and services. Contrary to expectation, most of the industries have over-priced the initial public offerings over the period of study except for the banking and finance and the consumer products industry.

The following analysis looks into the correlation between initial returns (over/under pricing) of IPOs and economic factors, market sentiments and a company's projected financial variables.

Table 4: Correlation between IPOs initial returns and Gross Domestic Product (GDP), Export (Exp), Import (Imp) and Foreign Portfolio Investment (FPI).

		Underpricing	GDP	Exp	Imp	FPI
Underpricing	Pearson Correlation	1	.003	.037	-.019	.091
	Sig. (2-tailed)		.950	.498	.738	.098
	N	329	329	329	329	329

Based on the ANOVA table above (Table 4), the p-value is greater than 0.05, thus suggesting that none of the economic variables are correlated to the underpricing of IPOs over the period of study (2001 – 2010). This contradicts with the results obtained by Hiromasa Nakamura (2003) who found a relationship between initial returns of IPOs and gross domestic product.

Table 5: Correlations between underpricing and Market Sentiments
(Kuala Lumpur Composite Index (KLCI) and Market Turnover)

		Underpricing	KLCI	Turnover
Underpricing	Pearson Correlation	1	-.019	-.016
	Sig. (2-tailed)		.727	.771
	N	329	329	329

Similar to the above findings on economic variables, results in Table 5 show a p-value of above 0.05, which indicates that the Market Sentiment (proxied by Kuala Lumpur Composite Index (KLCI) and Market Turnover) does not seem to be correlated with the initial returns of IPOs for the period of study (2001 – 2010).

Table 6: Correlations between underpricing and Companies Financial Variables (Net Tangible Assets, Price-earnings ratio, Earnings per share and Dividend yield)

Correlations

		Underpricing	NTA	PE	EPS	DY
Underpricing	Pearson Correlation	1	-.052	.025	-.098	.093
	Sig. (2-tailed)		.397	.730	.108	.274
	N	329	270	187	269	140

Here again, the p-value > 0.05 form the ANOVA table above clearly indicates that the companies projected financial variables do not have any correlations with the underpricing of the initial public offerings.

Thus, it can be concluded at this juncture that the initial returns of IPOs in the Malaysian Market for the period under study (2001 – 2010) does not have any correlation with the Economic variables tested (GDP, Import, Import and Foreign Portfolio Investments), Market Sentiments (Market Turnover and FTSE KLCI) and Company's Financial Variables (P/E ratio, EPS, NTA and DY).

To further test on the association of these variables with initial returns (though the probability is expected to be very minimal), a regression analysis is carried out using the above variables. The results are as below (Table 7):

Table 7: Regression analysis between underpricing and economic factors, market sentiment and companies financial variables.

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19792.501	10	1979.250	1.079	.384[a]
	Residual	220101.208	120	1834.177		
	Total	239893.709	130			

a. Predictors: (Constant), DY, PE, FPI, Imp, Exp, EPS, KLCI, NTA, GDP, Turnover

b. Dependent Variable: Underpricing

As expected, the regression analysis found that none of the variables had any significant relationship with the initial return of IPOs for the period studied (2000 – 2009). The p-value is greater than 0.05 (0.384), thus the initial returns from IPOs does not depend on the economic variables (gross domestic product, Import, Export & Foreign Portfolio Investments), Market Sentiments (Kuala Lumpur Composite Index & Turnover) and Companies Financial Variables (Dividend Yield, Price-earnings ratio, Earnings per share & Net Tangible Assets).

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Table 8: Stepwise Regression by sector

Industry	Model		Unstandardized Coefficients		Standardized Coefficients		
			B	Std. Error	Beta	t	Sig.
Finance and banking	1	(Constant)	-54.110	4.294		-12.600	.000
		Turnover	.077	.006	.979	13.673	.000
	2	(Constant)	-61.509	2.870		-21.435	.000
		Turnover	.086	.004	1.093	23.450	.000
		FPI	.000	.000	.208	4.461	.003
	3	(Constant)	-83.545	8.286		-10.083	.000
		Turnover	.103	.007	1.313	15.076	.000
		FPI	.000	.000	.178	5.054	.002
		Imp	9.149E-5	.000	.251	2.746	.033
Trading/Services	1	(Constant)	-54.980	21.906		-2.510	.015
		Turnover	.073	.029	.336	2.494	.016

To further test for any differences in relationship between all the economic, market sentiment and projected financial variables against the initial returns, the above data was split by sector and a stepwise regression was performed. Based on the stepwise regression, a significant relationship was documented between turnover, foreign portfolio investment and import in the Financing and Banking sector, whilst the Trading sector had a significant relationship between initial return and turnover. The rest of the sectors had no relationship between the given variables and initial returns of IPOs.

Table 9: Stepwise Regression by year

Coefficients[a]

Year	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
2002	1	(Constant)	27.181	9.476		2.869	.005
		KLCI	-.030	.011	-.260	-2.773	.007
2003	1	(Constant)	193.456	60.048		3.222	.002
		KLCI	-.207	.072	-.410	-2.875	.006
2006	1	(Constant)	-17.603	8.416		-2.092	.047
		FPI	.002	.001	.442	2.467	.021
2008	1	(Constant)	-167.633	45.336		-3.698	.010
		KLCI	.134	.040	.811	3.400	.015

a. Dependent Variable: Underpricing

Stepwise regression was also undertaken on a yearly basis for years 2000 – 2009. Based on Table 8 above, the stepwise regression indicates that in year 2002, 2003 and 2008, market sentiments proxied by Kuala Lumpur Composite Index (KLCI) has a significant relationship with underpricing (p-value of 0.007, 0.006 and 0.015 respectively). As for 2006, there appear to be a significant relationship between Foreign Portfolio Investment and initial returns at a p-value of 0.015.

6.0 Conclusion

The above results clearly indicates that the extent of underpricing of IPOs in Malaysia have significantly decreased compared to the 80's and 90's. There isn't any clear trend in the under or over pricing of IPOs for the period of study (2000 – 2009) except that 2004 shows an underpricing of 22.47%, whilst 2009 shows an overpricing of 15.09%. Generally, no correlation and association were found between the economic variables (gross domestic product, Import, Export & Foreign Portfolio Investments), Market Sentiments (Kuala Lumpur Composite Index & Turnover) and Companies Financial Variables (Dividend Yield, Price-earnings ratio, Earnings per share & Net Tangible Assets). Nevertheless, a stepwise regression found a relationship between market sentiments and initial returns in years 2002, 2003 and 2008 whilst a relationship between Foreign Portfolio Investment and initial returns were found for year 2006. Finally, association was also found in the banking and finance sector between initial returns and turnover, import and foreign portfolio investment. As for the trading and services sector, relationship exist between turnover and initial returns.

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