AN ANALYSIS OF OPERATING PERFORMANCE OF INITIAL PUBLIC OFFERINGS ON BSKL: CASH FLOW AND POST-ISSUE PERFORMANCE

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Abstract
This research examines changes in operating performance for a large sample of industrial firms conducting Initial Public Offerings (IPOs) in the Kuala Lumpur Stock Exchange KLSE. The sample of IPO firms has significant improvements in operating performance prior to the issue. The IPO firms experience a sharp, statistically significant decrease in profitability following the IPO in both industry-adjusted and unadjusted comparisons. I find that the decline in profitability is greater for firms that have higher cash flow, and that IPO firms that invest in new fixed assets perform better than IPO firms that do not.

Keywords: Accounting; IPO; KLSE.

JEL Classification Codes: G14; G24; G32.

1. Introduction
The negative effect on stock prices when firms announce Initial Public Offerings has been extensively documented in the literature (see Asquith and Mullins, 1986; and Jung, Kim, and Stulz, 1996). A number of hypotheses that have been advanced to explain this phenomenon predict a decline in operating performance subsequent to the IPO. Prominent among these are the adverse selection model of Myers and Majluf (1984) and Jensen's (1986) cash flow theory. Myers and Majluf argue that if managers are better informed than outside investors, firms are more likely to issue equity when the equity is overvalued. Thus, the announcement of an equity offering conveys negative information about firm value. Jensen argues that there are important divergences of interest between managers and shareholders that might induce managers to issue equity and waste funds by taking up negative-net-present-value (NPV) projects. This paper documents the long-term operating performance of Malaysian firms conducting IPOs, and uses operating performance to examine models of the value losses associated with IPOs.

The research extends the empirical literature in several ways. First, unlike most prior work that has primarily examined the stock price reaction to equity issues, I examine both the operating performance of IPO firms subsequent to the issue and analyze the determinants of ex-post performance. Second, I examine factors that influence the decision to issue equity and find that higher-leverage firms and high growth firms have a greater tendency to issue equity. Third, in contrast to earlier studies, the sample includes a large number of firms listed on KLSE. These are firms that are more likely to have a larger percentage of firm value in growth opportunities and to have more analysts following them. Thus, with greater information asymmetries, these firms are more likely to show the effects predicted by information models.

The analysis uses a sample of 496 industrial firms listed on the Kuala Lumpur Stock Exchange(KLSE) that issued Initial Public Offerings during the 1980-91 period.

Consistent with both the cash flow and Myers and Majluf (1994) theories, sample IPO firms experience significant post-issue declines in cash flow performance in both unadjusted and industry-adjusted comparisons. The median value of this ratio declines by 0.03 during the three-year period following the

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IPO, which represents a 20% decline in operating performance. Consistent with Jensen's (1986) cash flow theory, the decline in firm performance is negatively related to the cash flow in the year before the issue.

The remainder of the paper is organized as follows. Section 2 discusses prior work on IPOs and develops the hypotheses tested. The sample selection procedure and data used are described in Section 3. Section 4 presents the results of the study, and Section 5 concludes the paper.

2. Theoretical and empirical background

Two of the most influential theories that explain the negative stock price reaction to IPO announcements are those of Myers and Majluf (1984) and Jensen's (1986) cash flow theory. In the Myers and Majluf model, managers acting on behalf of existing shareholders have private information about the firm. These managers prefer to issue equity when their shares are overpriced, for example, when they have private information indicating that cash flows are going to fall in the future. In contrast, managers who believe that their stock is undervalued by the market may prefer to abandon valuable projects rather than fund investments by issuing underpriced shares. Hence, examination of the performance of firms conducting IPOs should find both negative abnormal stock price performance for the firm around the announcement of the offer and a decline in firm operating performance subsequent to the offer.

Jensen (1986) argues that there is a serious divergence of interest between managers and shareholders. Managers prefer to retain excess cash flow in the firm and might use the cash for value reducing activities, such as investment in negative NPV projects. This problem is especially acute for firms with few positive-NPV investment opportunities, Jensen argues that a major problem for shareholders is to force managers to pay out cash rather than use it for such value-reducing activities.

Capital structure can be one of the means used to constrain managerial behavior. Use of debt reduces the cash flow available for managers' discretionary spending and effectively bonds them to pay out future cash flows. Alternatively, firms can increase their dividends or repurchase their shares. However, unlike bondholders, who have access to bankruptcy court in default, shareholders cannot force the payment of dividends. Thus, Jensen's cash flow theory predicts that the announcement of IPOs has a negative effect on stock prices because IPOs increase the resources available for poor investment by managers. An empirical prediction of the cash flow theory is that the change in performance following the equity issue is negatively related to the existing cash flow. The theory also predicts that as long as the number of positive-NPV opportunities is limited, these firms will experience a decline in operating performance subsequent to issuing equity.

In Miller and Rock (1985), insiders are better informed than outsiders about the future cash flows of the firm. All firms have fixed investment opportunities with diminishing marginal returns. Since the sources of funds (cash flows from operations plus the sale of securities) must equal the uses of funds (investment plus dividends), equity offerings can signal that the firm has realized an unexpected fall in earnings. Thus, the Miller and Rock model also associates announcements of equity offerings with negative stock price reactions and negative changes in performance.

Asquith and Mullins find that the size of the offering is statistically significant and negatively related to the announcement-day effect. Mikkelson and Partch (1986) do not find a significant relation. Brous and Kini (1994) find a significant positive relation between the announcement period stock price reaction and institutional ownership. This relation is especially important for low-growth firms since these are firms more likely to waste the investment proceeds in value-reducing investment activities. Brous and Kini interpret their findings as support for the monitoring role played by institutions.

The research uses cash flows rather than earnings to measure changes in firm performance pre- and post-IPO and my sample includes 496 KLSE-listed firms. This research also examines additional factors associated with the decline in operating performance.

Patel, Emery, and Lee (1993) examine the long-term cash flow performance of publicly traded firms that issue straight debt, convertible debt, or common stock. Their evidence indicates that prior to the issue, equity issuers and convertible debt issuers perform better than their industries. They also perform better.
than straight debt issuers. Although Patel find that performance declines subsequent to the issue, these issuers still perform better than their industries. Patel also find that firms with larger offer sizes have greater declines in performance following the issue and offer a signaling explanation for the decline in performance. The study focuses on cash flow explanation of these declines. In addition, I examine factors related to the performance decline and to the decision to issue equity.

The findings reveal that operating performance declines subsequent to the IPOs. Here, the focus is on potential explanatory factors for the changes in operating performance around the IPOs. In particular, the study explores the relation between pre-offer cash flow and post IPO performance. Second, this sample consists of primary IPOs while their sample includes all offers that contain at least some primary shares. Finally, this study also examines the determinants of the IPO decision and find that cash flow is an important determinant of the IPO decision.

3. Experimental design
This section describes the data and the sample construction procedure and explains the methodology used in the tests of firm performance.

Data and sample construction
My sample consists of 496 initial public offerings issued by industrial firms during the period 1980-91. The IPOs in the sample satisfy the following criteria: 1) the offer is recorded in the database of Kuala Lumpur Stock exchange publish by KLSE Digest; 2) the firm is listed on KLSE; 3) balance sheet data are available from the annual report data files; 4) only the first offer by a firm in any year is included; and 5) excluded are: issues by utility firms; offers that have been announced and later withdrawn; rights offerings; issues where equity is offered jointly with debt.

I obtained annual financial statement information from the Annual Company report database. Table 2 contains summary statistics for the sample. All values reported are for the year prior to the offer (year -1) unless otherwise noted. The IPO firms have a median book value of assets of RM$93.68 million at the time of the offering. The largest issuer has a book value of assets of RM$196,124 million; the smallest issuer has a book value of only RM$1.18 million. The median in sales for the issuing firms is RM$95.03 million and the mean value is RM$981.71 million. The IPO firms have a median leverage ratio of 18.60%, substantially less than the leverage ratio of 30%. The (mean) value of the cash-flow-to-book-value-of-assets ratio of these firms is 15% (14%) and the median cash-flow-to-sales ratio is 13% (-11%). The differences between the mean and median cash flow values indicate the skewness of the data. This leads to using nonparametric tests and to test medians rather than means. The median industry-adjusted cash flow-to-book-value-of-assets ratio is positive, indicating that most issuing firms are outperforming.

Table 2 also reports summary performance statistics for the industries of the issuing firms. The median cash flow-to-book-value-of-assets ratio for the industries of the issuing firms is 12% indicating that in general issuers' industries are doing well. The issuing firms have a median. of 8.92 million shares outstanding prior to the offer, the median offer size is 1.27 million shares. The median offer value of $22.95 million is smaller than the offer size of $27.7 million.

Methodology
I examine the operating performance of IPO firms around the offer date. The principal measure of firm performance is pre tax operating cash flow, a measure of operating performance essentially similar to that used by Healy, Palepu, and Ruback (1992) and Patel, Emery, and Lee (1993). Pre tax operating cash flow is defined as net sales, minus cost of goods sold, minus selling and administrative expenses, but before deducting depreciation and amortization expense. The book value of assets is the total value of assets (liabilities and net worth) from the firm's balance sheet. Although previous studies have also used earnings to measure operating performance (an exception is Patel, Emery, and Lee, 1993), I use operating cash flow. As argued in Barber and Lyon (1996), operating cash flow is a "cleaner" measure of operating performance for two reasons: 1) earnings include interest expense, special items, and income taxes, which can obscure operating performance, the focus of this research; and 2) operating cash flows represent the economic benefits generated by the firm, and, as a pretax measure, they are unaffected by the changes in tax status or capital structure that accompany IPOs.
Since the level of these economic benefits depends on the total value of the firm's assets, I scale cash flow by asset value, thus obtaining a performance measure that can be used to compare across firms and through time. I scale by book value of assets rather than market values, because, conceptually, market values impound valuations of differences in firm and management quality. Using the market value of assets tends to mask true variation in performance by scaling superior (inferior) performance by its higher (lower) capitalized value. One issue that arises from using asset value to scale post-issue performance is that asset values increase from the proceeds of the IPO. If new assets do not begin to produce cash flows immediately, this could create a downward bias in measures of post-issue performance (see Barber and Lyon, 1996). I address this issue by following post issue performance for three years, which allows time for new assets to become productive.

I measure the change these cash flow variables in the first three years after the IPO (years +1, +2, and +3) relative to the year prior to the IPO (year -1). I also report changes in performance from the year of the offer (year 0) to year +1, and from year +1 to year +2. Since some of the difference in performance before and after the IPO might be attributed to industry factors, I also use industry-adjusted performance to provide a more consistent cross-sectional benchmark. For each firm the calculation include annual industry adjusted performance measures by subtracting from the issuer's change in performance the change in performance over the same period for the firm's industry.

I further examine the relation between cash flow and performance changes following the offer. The measure of cash flow scales operating cash flow by the book value of the firm's assets. Here, (CF) is defined as:

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CF = OI - TAX - INTEX - PFDIV - COMDIV
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where:

- \( OI \) = Operating income before depreciation
- \( TAX \) = Total taxes
- \( INTEX \) = Interest expense on debt
- \( PFDIV \) = Dividends paid to preferred stockholders
- \( COMDIV \) = Dividends paid to common stock holders

The research measures of growth opportunities is the ratio of the market value of equity plus the book value of debt to the book value of assets. (See Perfect and Wiles, 1994, and Chung and Pruitt, 1994.). Since growth opportunities can influence a firm's decision to issue equity, in several tests there is a separation between firms with high and low growth opportunities.

4. Results
This section reports the results for cash flow performance for the equity issuers during the seven year period of the analysis (Section A), examines the determinants of the changes in performance following the offering (Section B), and examines factors affecting the IPO decision (Section C).

Cash flow performance
Table 3 summarizes the operating cash flows and changes in cash flows for the sample of IPO firms. It also reports the results of the tests of significance. The sample size differs from year to year, because data for all sample firms are not available for every year. Although I present results and significance levels for both medians and means, the analysis is base on the medians. Due to the skewness of accounting ratios (Jain and Kini, 1994) analysis of medians is common practice in the literature. For the medians, it is base on the significance levels of two-tailed sign tests. Medians in Table 3 are for the full sample. However, the means reported in Table 3 (and the corresponding t-tests) are for the sample truncated to eliminate the top and bottom 1% of observations.

Panel A of Table 3 reports the raw cash-flow-to-book value-of-assets ratio. The median value of the cash flow-to-book-value-of-assets ratio in year -3 is 14.5%, which increases to 15% in the year before the IPO. However, in the year of the IPO and the three years after, there is a substantial drop in this ratio. The median declines to 13.4%, 11.6%, and 11.5% in the three years following the offer.
Panel B of Table 3 reports results on the industry adjusted measure of operating performance. The median firm in the sample of IPOs performs better than its industry median throughout the seven-year period of the analysis. The Table also reveals that in general the firm becomes significantly less profitable after the IPO. The median value of the industry-adjusted cash flow-to-book-value-of-assets ratio is 2% three years before the offer, increases to 3.4% in the offer year, and declines to 1.4% in the third year following the offer. Thus, issuing firms have a decline in performance relative to their industry-adjusted levels before the issue. These results are consistent with Patel, Emery, and Lee (1993). The sample statistics in Table 3 support the hypothesis that managers time their equity offerings when they expect future declines in cash flows.

Panel C reports results for changes in performance following the IPO, with performance in year 1 as the benchmark. There is a significant improvement (at the 0.05 level) in the operating performance of issuing firms from year -2 to year -1. The median change of 0.003 represents a 2.1% improvement in the ratio of cash flow to book value of assets. Issuing firms exhibit significant gains in performance immediately prior to the IPO. However, comparing pre- and post-IPO performance reveals a significant decline in the operating performance during the three-year period following the IPO. The median change in the ratios of cash flow to book value of assets of -0.012, -0.022, and -0.030 between year -1 and years +1, +2, and +3 represents a 12.5%, 14.66%, and 20% decline in the operating performance. All changes are significant at the 0.01 level. This panel also reports the results of the changes from year 0 to year +1 and year +1 to +2. All the changes are significant at the 0.01 level. The biggest annual change in the cash flows is from year -1 to year +1, and cash flows continue to fall in subsequent years.

However, these raw measures of operating performance are misleading if the drop in the operating performance is due to industry-wide effects beyond the managers' control. Examining firm results net of industry performance provides a better measure of firm performance. Panel D of Table 3 reports such changes. These results indicate that the IPO firms are performing above the industry average prior to the IPO, and that industry-adjusted performance drops following the IPO. There is a larger decline in the cash-flow-to-book value-of-assets ratio of the issuing firms when compared to the industry. The industry-adjusted performance ratio of the median firm declines by 0.008, 0.015, and 0.017 in years +1, +2, and +3, respectively, when compared to year -1. The changes for all three years are significant at the 0.01 level. Industry-adjusted changes are also negative in the years 0 to +1, and years +1 to +2 (-0.004 and -0.006, respectively, which are significant at the 0.05 and 0.01 levels). Thus, operating performance of issuing firms continues to decline in the post-issue years. These results indicate that there is a permanent decline in the long-run operating performance of IPO firms subsequent to the offer, and that this decline cannot be attributed solely to a general decline in industry profitability. This significant decline in performance following the IPO is consistent with the empirical predictions of both the Myers and Majluf (1984) model and Jensen's (1986) cash flow theory, as both of these theories predict a general decline in the profitability of firms which conduct IPOs.

Determinants of the change in performance following IPOs

In this section, a further investigation is done on several factors that can affect the decline in performance following the IPO. I regress changes in industry-adjusted operating cash flow against operating cash flow; the change in the industry-adjusted ratio of cash flow to book value of assets from year -2 to year -1; changes in property, plant, and equipment from year -1 to year +1; and the natural log of the book value of assets. Unless stated otherwise, all variables are for year -1 relative to the IPO.

Jensen's (1986) cash flow theory predicts a negative relation between the changes in performance and the cash flow level prior to the offering. I use the change in property, plant and equipment scaled by the book value of assets as a proxy for investment, and expect a positive correlation between this investment and the subsequent operating performance of the firm. The natural log of the book value of assets is included to control for firm size. Loughran and Ritter (1996) have argued that managers tend to time their equity offerings during periods of peak operating performance. The market naively expects this earnings growth to continue and thus pays high prices for the stock. Assuming this is true, these problems should be less severe for larger firms. They have more analysts following them who produce more information about these firms. These firms also have a longer history, and may have established a better reputation in the
capital markets. Hence, I expect larger firms to have lower declines in operating performance following the offering.

As Table 3 shows, operating performance for issuing firms increases temporarily just prior to the IPO. Thus, the decline in performance following the IPO may not represent a permanent decrease in long-run performance. After the issue, the performance of issuing firms could simply be returning to their pre-IPO level. To examine this hypothesis, there is a control for the run-up by including the change in operating performance from year -2 to year -1 as an independent variable.

The first column of Table 4 reports results for the regression of the change in the ratio of cash flow to book value of assets from year -1 to year +1 against these independent variables. Consistent with an empirical prediction of Jensen's (1986) cash flow theory, the performance change from year -1 to year +1 is negatively related to the cash flow in the year prior to the IPO. The coefficient of cash flow in year –1 is negative (-0.432) and significant at the 0.01 level. The greater a firm's current cash flow, the more its performance deteriorates following an IPO. The change in the performance ratio from year -2 to -1 is also negative (-0.11) and significant at the 0.01 level. The larger a firm's pre-issue run-up, the greater its post-issue decline. The coefficient for the change in property, plant, and equipment is positive, but not significant at customary levels. The coefficient of firm size is positive and significant at the 0.01 level, indicating that larger firms have smaller declines in performance following the offering.

The second column in Table 4 reports results when the change in performance from year -1 to year +2 is the dependent variable. The results are similar to the previous regression. The change in performance is negatively related to a firm's cash flow in year -1 and positively related to the change in investment in property, plant, and equipment from year -1 to year +1. The coefficients for these variables are significant at the 0.01 and 0.05 levels respectively. The coefficient for the run up variable is negative, and the coefficient of firm size is positive and significant at the 0.01 level.

Finally, I examine the relation between the change in performance from year -1 to year +3 with the same explanatory variables. Again, the results obtain are similar. The coefficient of cash flow is more negative (-0.570) than the coefficient for the changes from year -1 to year +1 and year -1 to year +2 and is significant at the 0.01 level. This is consistent with cash flow having a greater effect on changes in long-term performance. The coefficients of the change in property, plant, and firm size are positive and significant at the 0.01 level. The coefficient of the change in property, plant, and equipment variable increases in magnitude and statistical significance over the period subsequent to the IPO. It appears that investment take time to become productive. Like the prior two regressions, the change in the ratio of cash flow to book value of assets is negatively related to the run up in the ratio from year –2 to year –1.

Several conclusions can be drawn from these results. First, the results offer support for the cash flow theory, in that firms with larger amounts of cash flow exhibit a greater decline in performance following the IPO. Second, firms that invest in fixed assets perform better than firms that do not. This is consistent with Mann and Sicherman (1991), who find that the stock price reaction to equity issue announcements is more favourable for firms with a track record of acquiring assets related to their core business than for other firms issuing equity. Third, I do not find any relation between investment opportunities and changes in operating performance following the offering.

Determinants of the IPO decision
The analysis thus far indicates that IPO firms experience declines in operating performance subsequent to the issue. Also, cash flow is an important determinant of the decline in performance. One criticism of this result is that the decline may have nothing to do with the cash flow theory. Equity can be overvalued, and firms may issue equity simply because of overvaluation. Firms with high cash flow have less need for cash and can issue equity purely because of overvaluation. If this is true it would expect to find a positive relation between the equity issue decision and cash flow. In this section I examine why firms issue equity even though stock prices react negatively to the issue announcement. I construct an empirical model of the equity issue decision by adding two new variables to several that have been used previously in the literature. The new variables in this model are the ratio of cash flow to book value of assets and the change in performance measure, the ratio of cash flow to book value of assets from year -2 to year -1. The variables
that I incorporate from earlier studies are the tax expenses of the firm, firm leverage, firm size, and a proxy for firm growth opportunities. Unless otherwise stated, all the variables are from the year prior to the IPO.

The measure of cash flow is the cash flow in year -1 scaled by the book value of assets. If firms prefer to issue equity when it is overpriced, then it is expected for them to issue equity after a run-up, I measure the run-up in operating performance by the industry-adjusted change in the ratio of cash flow to book value of assets from year -2 to year -1 relative to the issue date. Firms with higher-growth opportunities have a greater need for cash.

Since interest payments are tax-deductible and firms with higher tax payments have a greater tendency to issue debt, I can expect to find a negative relation between the tax payments and the incentive to issue equity. Mackie-Mason (1990) and Jung, Kim, and Stulz (1996) find that the firm's tax status can affect the issue decision.

As we know in corporate finance, firms with higher leverage have higher costs of financial distress and are more likely to issue equity. Also, if firms seek to maintain a target leverage ratio, high leverage is likely to be associated with a desire to issue equity. This study uses the ratio of the book value of long-term debt over total assets as a measure of firm leverage.

Finally, investors are more likely to be better informed about larger firms because there are more analysts following them. Thus, the asymmetric information problems are likely to be less severe for such firms. The coefficient of the leverage variable is positive and significant at the 0.01 level, indicating that firms with higher leverage have a greater tendency to issue equity. This is consistent with arguments that firms with high leverage issue equity to avoid the costs of financial distress. Neither the coefficient of firm size nor the coefficient for tax expense is significant at customary levels.

The second column in Table 5 reports results for firms with fewer growth opportunities. Only the leverage and firm size variables have any significant explanatory power, both of which are positive and significant at the 0.05 level and 0.01 level, respectively.

The third column in Table 5 reports the results for the sample of firms with high-growth opportunities. The coefficient of the leverage variable is positive and significant at the 0.01 level. High-growth firms with higher leverage have a greater tendency to issue equity. The coefficient of firm size is negative and significant at the 0.01 level. Larger high-growth firms have a lower tendency to issue equity, suggesting that it is the small, growing firms that need to raise funds by issuing equity.

The results in this section do not support the argument that all firms with larger amounts of cash flow are overpriced and have a greater tendency to issue equity. The findings reveal that high-growth and high leverage firms have a greater tendency to issue equity.

5. Summary and conclusions
I analyze a sample of 496 equity offers during the period 1980-91 for changes in operating performance. I use the measure of operating performance which is operating cash flows scaled by the book value of assets. Issuing firms exhibit significant gains in performance immediately prior to the IPO, performing above their industry average. The IPO firms experience a sharp, statistically significant decrease in operating performance following the IPO. The median change in the cash flow ratio declines by 20% during the three year period following the IPO. The decline is significant when measured on either an unadjusted or an industry adjusted basis. These Loughran and Ritter (1995). Consistent with Jensen’s (1986) cash flow arguments, the decline in performance is larger for firms with larger amounts of cash flow. However, I do not find that performance declines are larger for low growth firms. The decline is smaller for bigger firms and those that invest in fixed assets. I also find that firms that show larger improvements in performance prior to the issue have bigger declines subsequent to the issue.

In addition, this study reveals that leverage, growth opportunities, and firm size influence firm’s decision to issue equity. Consistent with the trade off theories that argue that high leverage firms seek to avoid higher costs of financial distress, I find firms with higher leverage have a greater tendency to issue equity. My
evidence also indicates that firms with higher growth opportunities issue equity to meet their investment needs. I observed that overvalued firms tend to issue equity. However, there is no relation between the extent of overvaluation and the changes in operating cash flows following the offering. Among high growth firms, smaller firm have a greater tendency to issue equity, in contrast to low growth firms, where larger firms have a greater tendency to issue equity.

References