

Myth or Reality: Understanding the Effect of IPOs on Firms Performance in the United States

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Abstract

The issue of firm performance subsequent to an IPO has become a major research area. This paper looks at the effect of IPOs on firm performance in the United States where performance is measured in terms of the change in a firm's earnings per share (EPS). The data set consisted of 66 companies that had IPOs in 2013 in the United States of America. The companies were associated with four industries namely; manufacturing, financial, consumer goods and energy. The financial results of these companies were evaluated from 2013 to 2019. The IPO listing for 2013 was obtained from the NASDAQ website's IPO calendar for companies with IPOs in 2013. The financial results which included current ratio, quick ratio, cash ratio, gross margin, operating margin, after-tax ROE, pre-tax ROE and EPS, were obtained from SEC 10K filings. Multiple regression was used to evaluate the appropriateness of the EPS model. The results showed that firm performance as measured by EPS declined after the IPO and continued to decline over the period.

1. Introduction

There is ongoing debate as to the extent to which initial public offerings (IPOs) positively impact a firm's performance in the long-run and the extent to which shareholders can feel relatively safe in acquiring ownership in companies that have decided to go public. IPOs are considered to be important sources of finance for privately owned firms and, therefore, an IPO is a significant moment in the developmental life of companies. The normal developmental process is that sole proprietorships and partnerships eventually form a public corporation with the aim of raising capital from the public to support their growth and expansion strategy.

Public companies are able to raise funds by issuing securities/stocks to the public; the companies themselves are subjected to the Securities Act of 1933 which gave rise to the Securities and Exchange Commission (SEC) whose job it is to protect the interests of investors. The first issue of stocks to the general public is called IPO. Companies use IPOs to raise large sums of capital/funds which are used to undertake profitable ventures. Therefore, a well-regulated and efficient financial system is vital for the continued development of the private sector as it seeks to expand and support economic growth.

One of the securities traded in the capital market is stock. Investing in stocks as one type of investment can yield high returns, however, there is the associated high degree of uncertainty related to this type of investment. The general principle is that where there is possibility for an investor to earn high returns, there is always the underlying high risk that is associated with that type of investment. The stock market is no different, investors can earn significant return in the form of capital gains, and to a lesser extent dividend, but there is the ever-present risk of a material capital loss.

Given the high degree of uncertainty associated with investing in stocks, investors tend to behave rationally in making investment decisions. The rational investors will use the available accounting information contained in the financial statements to aid the decision-making process. The accounting information will be evaluated to assess the performance of the company and, hence, the decision may be to buy, sell or hold the stock.

Studies have examined the issue of performance and profits before IPO, and it is well-documented in the literature, which shows an increase in profits before IPO. There are a few inconclusive studies as to how firms perform after IPOs. Most studies examine stock price after IPO and conclude that stock price falls, hence, firm performance declines. The problem with prior studies using stock price as the variable to evaluate firm performance after IPO is that stock prices tend to be influenced by market sentiment, speculation, and economic factors that do not reflect the profitability and growth of the company; it can be said that stock price is affected by noise in the market. This study, therefore, uses earnings per share (EPS) as the variable to evaluate firm performance after an IPO.

Rational investors are more concerned with EPS because it indicates the amount of profit generated from a single stock owned by stockholders. Generally, the greater the value of the EPS, the greater the profit earned by stockholders. When companies produce good results, EPS will increase as the outlook for the company will be positive and, hence, the demand for the stock will increase which eventually impacts the stock price. The basic premise is that it is the high EPS that encourages demand for stock in the market. This study, therefore, aims to fill the gap left by previous studies that have all examined performance after IPO by evaluating stock price movements after IPOs.

2. Literature Review

The decision of a company to go public is one of the most important decisions a company's management could be asked to take. Not only are there significant cost implications, but the entire operating environment of the company changes. Gyimah (2011) argues that the decision to go public is one of the most important and complex questions in corporate finance. Nevertheless, Gyimah (2011) further states that the empirical analysis of going public and its effects at the firm-specific level, is one of the least studied issues in corporate finance.

Firms execute IPOs for varied reasons. However, the general consensus is that most firms go public as a means of raising capital for investments which should impact firm performance. Kim and Weisbach (2005) argue that issuing shares is correlated with increase in investment, higher debt repayment and a significant increase in cash. In a subsequent study by Kim and Weisbach (2008), they showed that firms spend 18.8 cents in research and development and 7.3 cents in capital investment for every additional dollar received in an equity offer during the year after the IPO. Financing reason is a valid reason for firms to go public as shown by the previous study. There is also the propensity for companies to retain or hold onto too much of the cash raised in the IPO (Kim and Weisbach, 2008).

Interestingly, Pagano, Panetta and Zingales (1998) argue that firms may decide to go public in order to benefit from a change in their leverage position which eventually affects their debt-equity ratio. The thinking is that; the new equity raised can be used by firms to arrive at an optimum leverage level. Therefore, the new financing made available from the IPO is not used for capital investment and growth, but to re-align or reduce leverage (Pagano, Panetta and Zingales, 1998).

There are obvious good reasons for going public, however, an argument could be advanced that there are benefits to remaining a private firm. Ritter (1987) reports that there are significant costs involved in going public with the average cost being about 14% of the total funds raised from the IPO. Gyimah (2011) points out that some IPOs cost between 15 and 20 percent of the proceeds raised. Some of the costs, Gyimah (2011) argues, include the main underwriter's commission, expenses for legal services, printing costs, accounting services, marketing expenses, filing costs with the SEC, mailing expenses and on-going public relations to enhance the company's image. Staying private would allow the company to avoid most of these costs, especially the requirement for annually audited financial statements. Finally, the decision to go public results in a separation between ownership and control; this separation may give rise to agency problems and, ultimately agency costs (Jensen and Meekling, 1976).

The underlying expectation after going public is that firm performance should improve. One of the first studies to examine the operating performance of firms going public in the US between the period 1976 to 1988 was Jain and Kini (1994). Their study examined the operating results of public companies in the first few years after going public. Interestingly, Jain and Kini (1994) reported that newly listed firms showed a decline in post-issue operating performance when evaluated by operating return on assets and operating cash flows compared with their performance before going public. Numerous studies that have examined post-IPO firm performance have showed a decline in performance. Mikkelsen, Partch and Shah (1997) showed a decline for U.S. firms, Pagaono, Panetta and Zingales (1998) arrived at the same results for Italian firms, Khurshed, Paleari, and Vismara (2005) reported similar results for a sample of U.K. firms, Wang, Wang and Lu (2003) reported a decline in performance for a sample from Singapore, Cai and Wei (1997) and Kutsuna, Okamura and Cowling (2002) showed similar results for a Japanese sample, while Wang (2005) reported a decline in performance for a Chinese sample. Interestingly, all of these studies found a decline in

operating return on assets in the post-IPO period when compared with the pre-issue operating return on assets.

The decline in post-IPO firm performance appears to be widespread and well documented. A study by Kutsuna et al (2002) of Japan Association of Securities Dealers Automated Quotation (JASDAQ) companies reported significant decline in profits and sales after going public. Kim et al (2004) reported significant decline in operating results for IPOs in Thailand, while Chan et al (2004) showed similar results for IPOs in China. The Chan et al (2004) study found that the decline in performance was not due to a fall-off in business activity generally, but rather, they argue that it was the result of an attempt by managers to undertake window-dressing of the accounts before going public, resulting in pre-IPO performance being overstated and, hence, post-IPO performance being understated in-terms of prior results. It has been reported in the U.S. that listed companies experience major decline in returns in the first three to five years after an IPO (Loughran and Ritter, 1995; and Ritter, 1991).

A recent study by Alanazi and Liu (2013) which examined 52 IPOs in the Gulf Cooperating Council region between 2003 and 2010 found that operating results declined after going public. The argument presented by the researchers was that the decline was due to the firms moving from being private to a public entity and the resultant agency costs. A study by Ahmad and Lim (2005) which examined the Malaysian market found major decline in operating performance in the post-IPO period. Another possible explanation for the decline in post -IPO performance was given by Zalulk (2008) who also examined Malaysian firms, he argued that the decline in performance was due to the manipulation of profit figures prior to and during IPOs.

It is, therefore, apparent that IPO is synonymous with under-performance, based on these observations, so researchers now seek to find possible explanations based on financial market imperfections (Gyimah, 2011). Brav, Geczy and Gompers (2000) posit that the choice of the performance methodology normally determines both the size and the power of a statistical test, hence they criticized the results of previous studies.

One of the problems with prior studies has to do with the choice of the measurement variable. Most studies measure operating performance in terms of return on assets (ROA) and stock price. The issue of using stock price as the determining variable has already been addressed earlier in the paper. The approach of using ROA has an inherent weakness in that an IPO could easily result in a mis-match between acquired assets and the lag in generation revenue and, hence, depressed operating results. This study, therefore, examines firm performance in-terms of earnings per share (EPS) which is a better measure than either stock price or ROA. Therefore, the main research question is:

“What is the effect of IPOs on firm performance in the United States when performance is defined in terms of earnings per share?”

This leads to the research hypotheses:

H₁: *earnings per share is not an appropriate metric to evaluate firm performance subsequent to an IPO.*

H₂: *there is no significant difference in EPS over the seven years after the IPOs*

3. Research Methodology

This aim of this study is to determine the effect of IPOs on firm performance in the United States where performance is measured in terms of change in a firm's earnings per share (EPS). Measuring performance in terms of EPS has not been explored before, as previous studies have used stock price and ROA to explain firm performance. EPS is seen as the main focus of investors because it indicates the amount of profit earned from each share held by shareholders. Investors use EPS to make investment decisions because it provides relevant information associated with the value of the company. When EPS is rising, it results in higher stock prices as the demand for the company's stock increases.

The data set consisted of 66 companies that had IPOs in 2013 in the United States of America. The companies were associated with four industries namely: manufacturing, financial, consumer goods and energy. The financial results of these companies were evaluated from 2013 to 2019. The IPO listing for 2013 was obtained from the NASDAQ website's IPO calendar for companies with IPOs in 2013. The financial results which included current ratio, quick ratio, cash ratio, gross margin, operating margin, after-tax ROE, pre-tax ROE and EPS, were obtained from SEC 10K filings. The data set could have been larger, but it was reduced by the elimination of companies which had debt conversions or any subsequent event after the IPO which resulted in a dilution of the base EPS figure.

The analysis involved a two-stage process. The first step included the plotting of the operating results of the companies over the seven-year period (2013 to 2019) using the financial metrics as a guide in assessing firm performance. The second stage included the use of IBM SPSS statistical software to perform a multi-regression analysis on a sample of 24 companies to test the hypothesis using the financial metrics identified above as the independent variables. The percentage change in EPS over the seven-year period was the dependent variable used to evaluate firm performance subsequent to the IPO.

The regression model is therefore estimated as follows:

$$EPS = \beta_0 + \beta_1(CUR) + \beta_2(CR) + \beta_3(GM) + \beta_4(OM) + \beta_5(AROE) + e$$

Where:

EPS = earnings per share

CUR = current ratio

CR = cash ratio

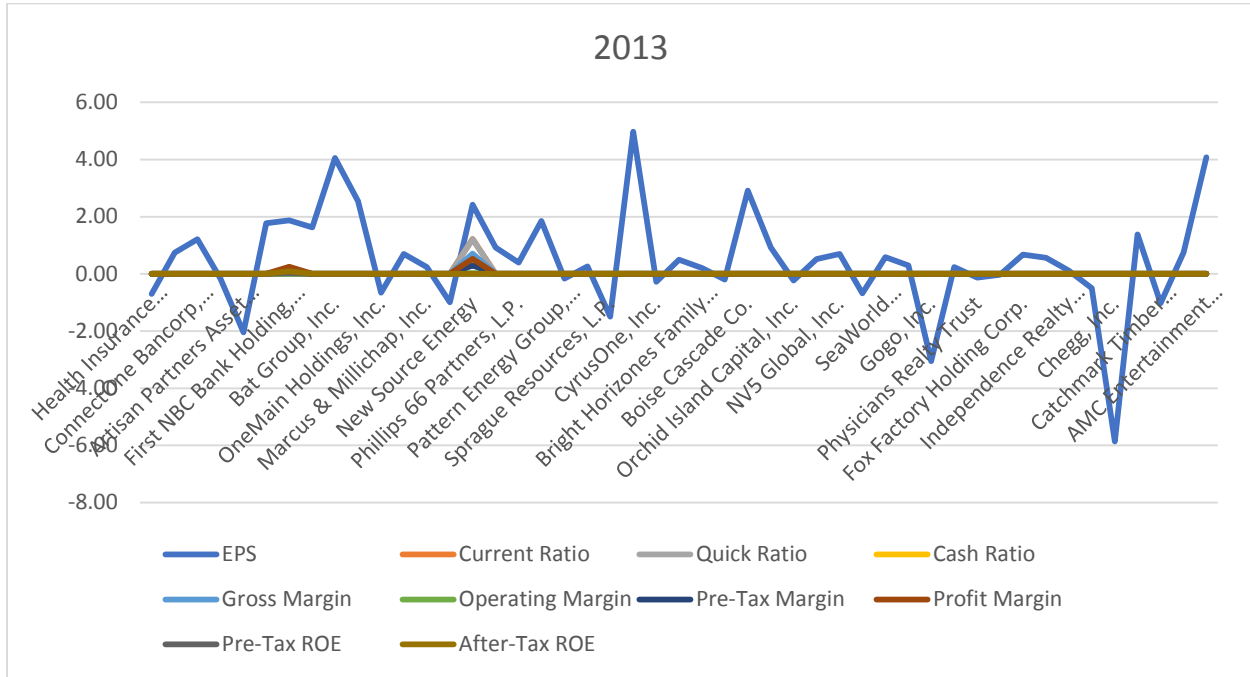
GM = gross margin

OM = operating margin

AROE = after-tax return on equity

4. Results and Discussion

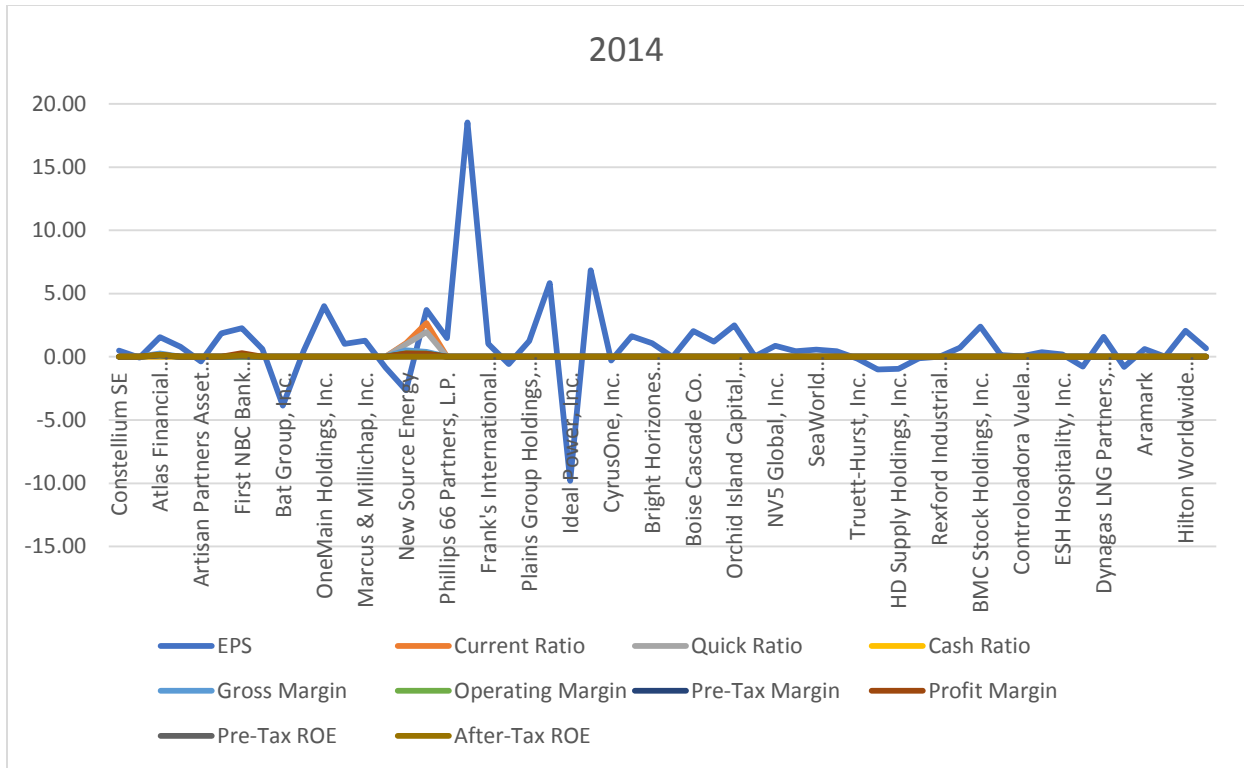
Table 1: 2013 Financial Results



The 2013 graph was used to show the base EPS for companies just after their public listing. Most companies reported positive EPS performance, despite a few which showed depressed results.

By the end of 2014 it became obvious that EPS began to decline with a flattening out of its growth when compared with the base year of 2013. Most companies EPS was within a positive 5 percent and a negative 5 percent growth range, while a few companies showed a return as low as negative 10 percent for the period. The 2015 results showed a worsening of the EPS performance, only two companies were able to produce EPS growth above 5 percent. There was almost no growth in EPS during the year despite significant increase in current asset for most companies during the year. Most companies experienced declining operating margin which further depressed the return on equity figures both before-tax and after-tax.

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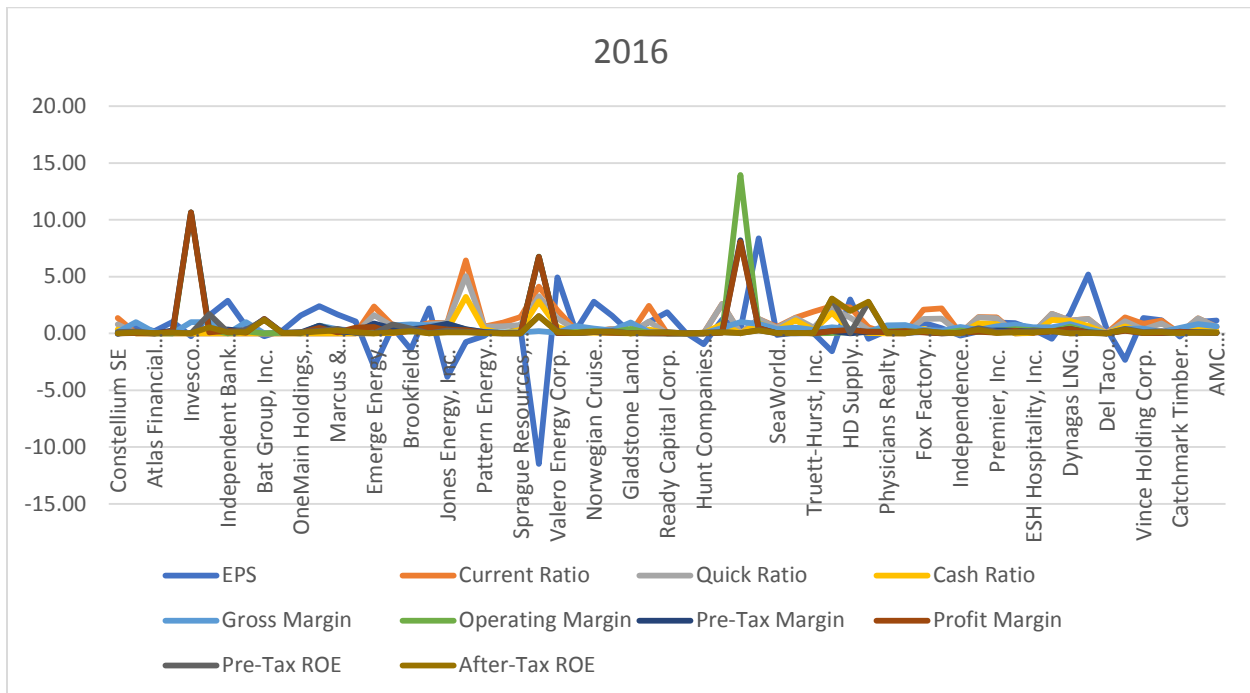
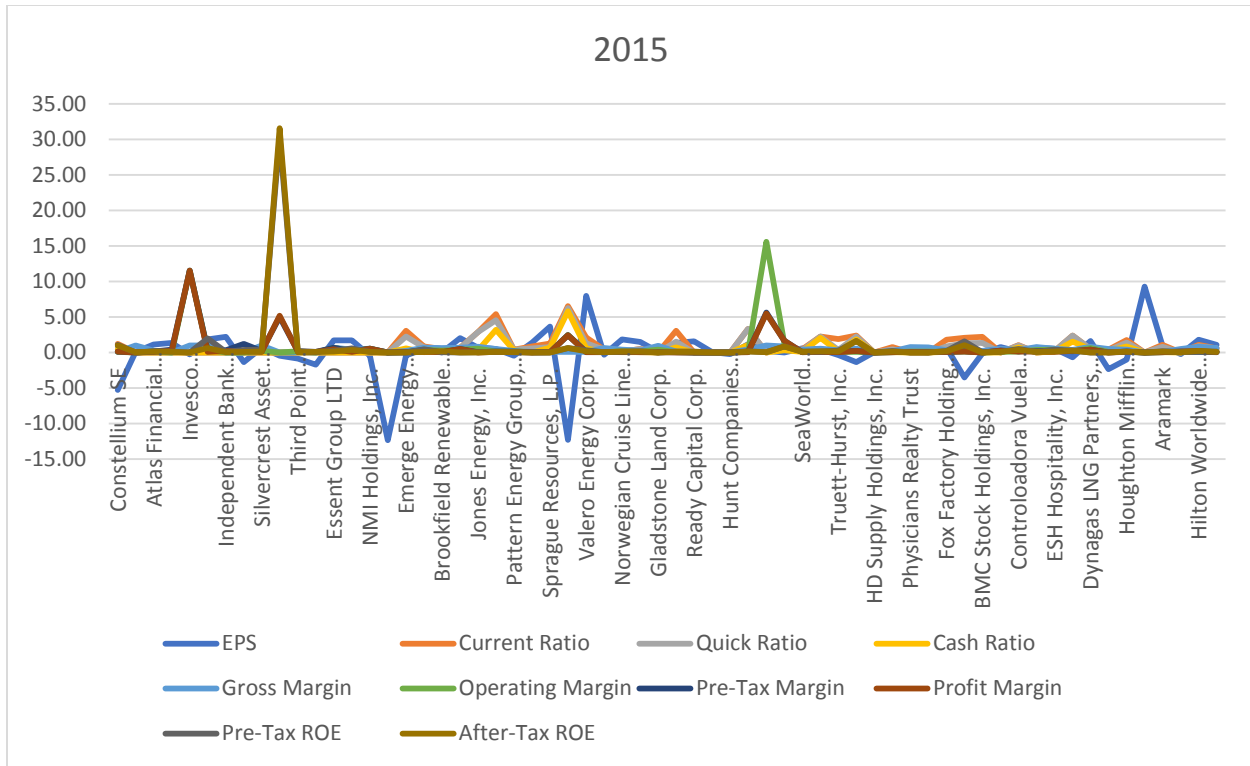


The 2016 results did not produce any generalized increase in EPS performance for the companies. Both profit margin and operating margin showed decline which could explain the continued poor EPS performance. An interesting observation was that most companies started to show a decline in cash ratio starting from 2015 to 2016.

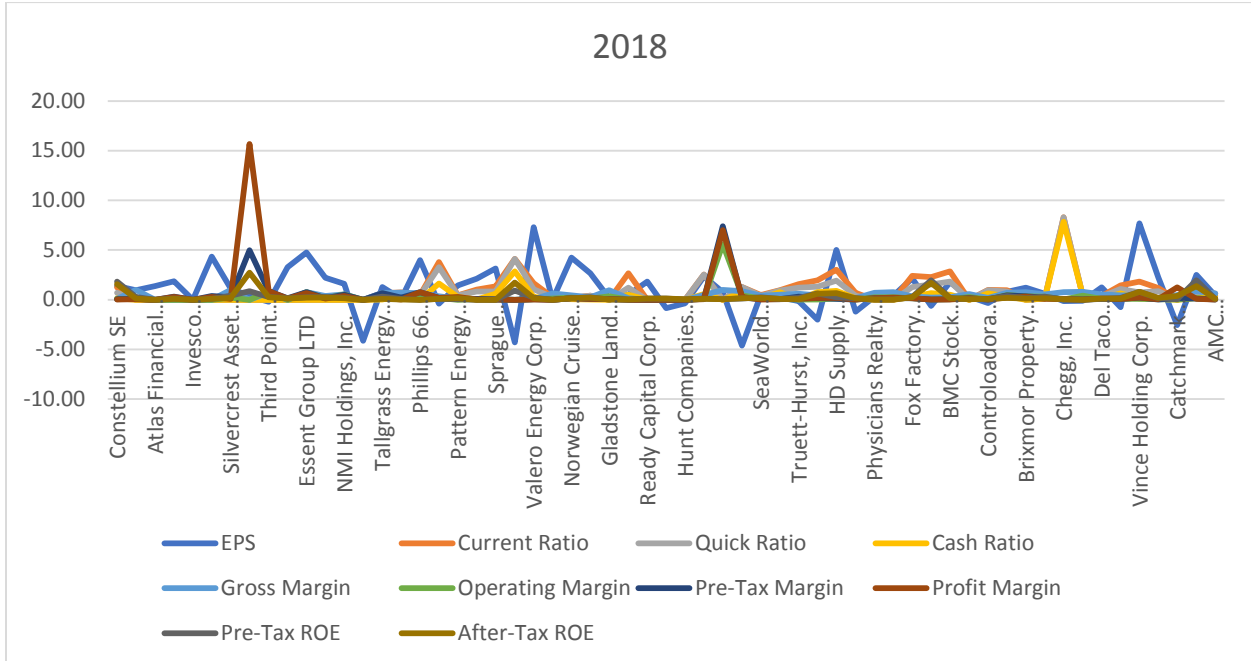
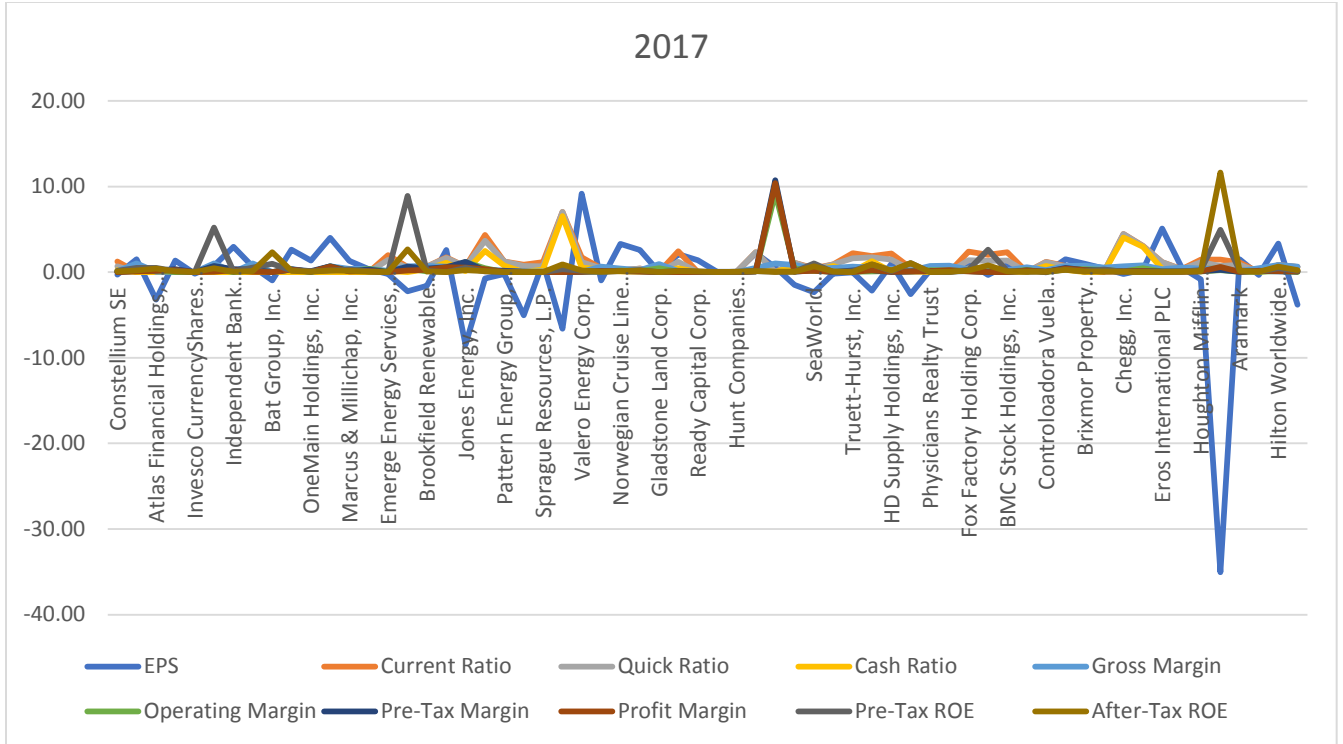
The results for 2017 and 2018 did not reverse the continued decline in EPS. The EPS for 2017 ranged from positive 9.16 percent to negative 35.04 percent growth, with most companies having EPS less than 4 percent growth. The general expectation would be that, by 2018, companies should be producing better results having had IPOs in 2013. However, the general decline in performance results continued.

The 2019 results were used to highlight the highest overall percentage increase in EPS over the period. Unfortunately, it showed a weak 1.44 percent growth indicating the long-term increase in EPS for the period under examination. EPS has definitely deteriorated over the period.

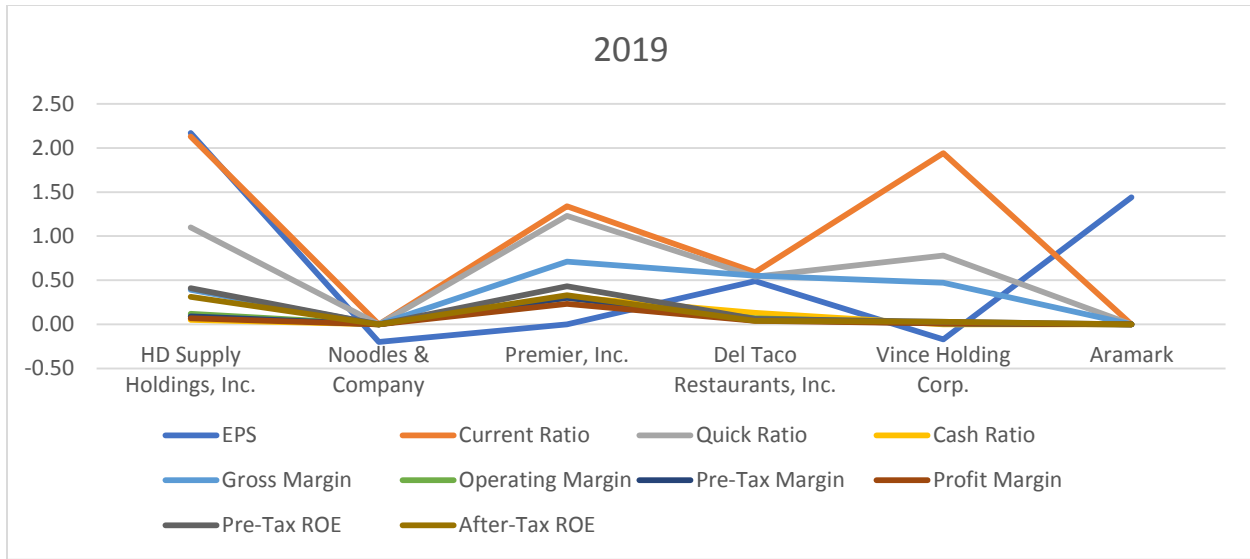
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Multiple regression was used to evaluate the appropriateness of the EPS model. The data was tested for multicollinearity and the possibility of any serial correlation using tolerance statistic and the Durbin-Watson, respectively.

Table 2 Model Summary^b

R	R Square	Adjusted R ²	F Change	df	Sig. F Change	Durbin Watson
.968 ^a	.937	.923	70.151	4	.000	1.575

a. Predictors: After-tax ROE, Current ratio, Gross Margin, Operating Margin

b. Dependent Variable: EPS

Table 3 ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1463.522	4	365.88	70.151	.000 ^b
Residual	99.097	19	5.216		
Total	1562.619	23			

a. Dependent Variable: EPS

b. Predictors: After-tax ROE, Current ratio, Gross Margin, Operating Margin

Table 4 Coefficients^a

Model	Standardized Beta	Sig.	Tolerance
Constant		.032	
Current Ratio	-.070	.251	.955
Gross Margin	.011	.870	.802
Operating Margin	-.958	.000*	.656
After-tax ROE	-.037	.577	.776

a. Dependent Variable: EPS

.000* significant at 5%

Table 2 reports a Durbin Watson of 1.575, this tests the hypothesis of the existence of any serial correlation in the data. Generally, a Durbin Watson of 1.5 to 2.5 implies no meaningful serial correlation in the data. The issue of multicollinearity among the independent variables was examined by the collinearity statistic of tolerance. Multicollinearity generally exists when the tolerance is less than 0.2. Table 4 provides the tolerance factor for the independent variables in the model all above 0.2, which implies the absence of multicollinearity among the independent variables.

Based on the results as seen in Table 2, ($R^2 = .937$), it shows that the independent variable explains 93.7% of the variation in EPS. The test value $F = 70.151$ is statistically significant at the 0.05 significance level. This implies that all the independent variables contained in the regression model (after-tax ROE, current ratio, gross margin, operating margin) simultaneously had a significant effect on EPS. Table 3 ANOVA results show that the regression model is statistically significant and is appropriate to be used to evaluate firm performance after an IPO where performance is defined based on growth in EPS, therefore, there is not sufficient evidence to accept hypothesis 1 (H_1). Operating margin (Table 4) is shown to be statistically significant (Sig. .000) in explaining the change in EPS over the period, a change which has been shown to be significant. Therefore, hypothesis 2 (H_2) could not be supported.

5. Summary and Conclusion

This paper has highlighted some interesting conclusions regarding IPO and firm performance. First, the paper deviated from the usual dominant methodology in the existing literature where the practice was to evaluate firm performance using stock price movements, a practice which has been shown to be exposed to underlying deficiencies. The use of the EPS model in this study has shown that the model is both robust and appropriate in evaluating firm performance subsequent to an IPO. Firm performance declined over the period subsequent to going public. EPS is a significant indicator used by investors and potential investors to evaluate investment decisions. The decline in EPS over the period is a significant issue which raises numerous questions. Most companies that decide to go public normally release excellent pre-IPO financial data as a means of attracting investors. However, post-IPO performance is normally poor, which raises concern as to the reliability of the pre-IPO financial data. The issue of window-dressing should never be discounted.

The results confirm the phenomenon widely referred to in literature as window-dressing. Companies massage the financial statements before IPOs to attract investors, once they receive this large amount of cash (sometimes more than their expectations), there is generally a lag in deciding on the appropriate investment options to undertake, partly because they were unprepared for this large amount of cash due to the lack of a well-thought-out strategic direction. This less than efficient operation affects operating margin which translates its negative effect on the EPS. What is obvious is that, companies going public have deep-rooted operating issues which need attention. It could be that this new operating/ownership environment- once they become public- is a culture shock for which they are unprepared and hence need professional help in adjusting to this new operating environment. Additional research may be useful in

addressing the issue of how to adequately provide an orientation strategy for new IPO companies. One implication of this study is that, there is a need for a forensic analysis of per-IPO financial results to identify window dressing and the subsequent discounting of the proposed stock price offering.

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