

Program (NTP) 2020 will bring more technological developments and infrastructural improvements in the industry. During last decade, the rapid development in the petrochemical sector of Saudi Arabia can be attributed to many factor such as high oil prices, availability of cheap and abundant feedstock, increasing profits for petrochemical sector and rising demand in Asian market (Jadwa Investment, 2018).

In Saudi Arabia, exploration of crude oil provides two other type of natural resources such as liquid petroleum gas and gas associated with crude oil and these two natural resources provide the feedstock for Saudi petrochemical sector. Ethane and methane are the main source of Saudi feedstock which are naturally extracted from associated gas. Liquid petroleum gas provides feedstocks such as propane and butane and naphthane is directly derived from refining of crude oil.

Eventually, petrochemical industry plays an important role in Saudi economy as plastic and chemical exports constitute around 34.5% of Saudi non-oil exports (SIDF, 2019). Due to its major contribution in Saudi non-oil exports, petrochemical sector has been identified as the main strategic sector in both NTP and Vision 2030 to help the kingdom to increase non-oil exports from 16% of GDP in 2015 to 50% of GDP in 2030.

Recently, Saudi oil giant - Saudi Aramco has started its ventures in the chemical sector along with oil and sector, ensuring integration between upstream and downstream of energy sector. In this context, it started its first venture through the collaboration of Sadara Chemical Company and US firm Dow Chemical in 2017, representing Aramco's first major step towards becoming a globally integrated energy and chemical company. In addition, in March 2019, Saudi ARAMCO bought 70% shares of Saudi chemicals giant SABIC to integrate both the production streams, crating competitive advantage in the production chemical products.

To analyse the impact of IPO on the financial performance of petrochemical sector in Saudi Arabia, this research selects three public companies. These include; Petro Rabigh, SABIC and YANSAB. However, there is only one petrochemical chemical company i.e. SATORP which is not yet public. Therefore, this research is constrained to have only one non-IPO and three IPO based petrochemical firms in the sample.

Petro Rabigh produces essential products to our life which are the fuels and plastics. Also, it markets refined hydrocarbon and petrochemicals. Petro Rabigh is in Rabigh, Saudi Arabia, and produces naphtha, kerosene, gasoline, diesel and fuel oil. Its production in a year presents 140 million barrels of petroleum and 5 million tons of petrochemical products. It started trading in Tadawul in January 2008. Saudi ARAMCO ownership represents 37.5% of Petro Rabigh, whereas Sumitomo Chemical owns 37.5%, and 25% of the company to the public. Petro Rabigh is the first company that produces petrochemical products and the only one who manufactures propylene oxide in the Middle East.

SABIC is an abbreviation for Saudi Basic Industries Corporation which is a global chemicals company headquartered in Riyadh, Saudi Arabia. It operates on a global scale in the Americas, Europe, Middle East and Asia Pacific. SABIC produces a verity of products which are: chemicals, commodity and high-performance plastics, Agri-nutrients and metals. SABIC's total workforce is above 35,000 employees worldwide and manufactures in more than 50 countries, with innovation centers in five key geographies – USA, Europe, Middle East, South East Asia and North East Asia. SABIC was founded in 1976, its age is 43 years now. It became publicly listed at the Saudi stock market Tadawul in 2010. Today, SABIC is the biggest public company in the Middle East and Saudi Arabia. In addition, in 2019 SABIC has sold 70% of its shares to be owned by the Saudi ARAMCO.

YANSAB is an abbreviation for Yanbu National Petrochemical Company. It is a Saudi Joint Stock Company registered under Commercial Registration on 11 February 2006. It is affiliated to SABIC who owns 55% of its equity, while Ibn Rushd and Tayef own 10% of YANSAB and 35% is offered to public investors. The purposes of YANSAB is to involve in manufacturing of petrochemical. YANSAB started its Commercial operations on 1 March 2010.

Saudi Aramco Total Refining & Petrochemical Company refinery (SATORP). It is classified as a full-conversion export refinery company that operates in Jubail, Saudi Arabia. SATORP processes 400,000 barrels of Arabian heavy crude oil to be used in high-quality refined products, such as benzene and paraxylene to gas, diesel and jet fuel. The Saudi Aramco Total Refining & Petrochemical Company refinery started its first operation in June 2014.

Rest of the paper is organized as follows. Sections two presents the relevant literature review and section three discusses the data methodology and analysis. Section four concludes the research discussions and presents the policy insights as well as the limitations of the study.

2. LITERATURE REVIEW

The effects of IPO on the financial performance of the companies are studied in many academic and professional research papers, in which the performance of companies is normally analyzed before and after being public. Also, there are a handful of papers that analyze and compare the reasons and motivate the companies to become public. For

instance, (Kuria, E.G., 2014) argues that firms may sell their stocks to raise equity capital. Likewise, many private companies make a fundamental decision by going public for this reason and consequently change the whole structure of the company. In addition, Ritter (1991) finds it common for firms to use their assets to generate revenue. He states also that initial public offering or IPO helps to develop a liquid market by selling the security to the public. He observed that the firms which offer IPO sometimes experience losses. Firms might experience abnormal or negative stock returns due to an initial public offering.

Financial performance is a measure that explains how firms use their assets to generate revenue. Financial strengths and weaknesses can be analyzed through financial performance as per Tridevi (2010). It also helps to analyze a firm's production and productivity, profitability, liquidity, working capital, fixed assets, fund flow and social. The financial statements of companies help in analyzing their financial performance. Moreover, financial ratios are effective indicators that reflect the firms' performance too. In details, the ratios are categorized into liquidity, profitability, and solvency measures. Common profitability ratios are Operating profit margin, ROA and ROE. Furthermore, liquidity measures the ability of a firm or an individual to meet short-term expenses during an emergency.

Deeply, many studies claim that IPO adversely affects the performance of the firms during the post-IPO period. Kuria (2014), for instance, uses four measures to understand the effects of IPO on the financial performance of the firms: ROA to measure the productivity of asset utilization, ROS to measure a firm's operational efficiency, the current ratio to measure short-term expenses, and the fixed assets turnover or FAT to measure how firms use their fixed assets to produce sales. Many studies have proven that undergoing IPO would lead to a decline in the financial performance of the companies. However, post-IPO has shown tremendous growth in sales and liquidity. The world is globalizing and so are the financial markets. An increasing number of companies is now turning public instead of private. Earlier, companies were scared of putting in the information into public account due to the fear of rivals, customers and consumers knowing about the products and services which are being offered and letting privacy of the companies to be open to all other stakeholders.

Brau and Fawcett (2006) defines going public or initial public offering (IPO): "becoming a publicly traded and owned entity to raise capital in hopes of expanding and venture capitalists may use IPOs as an exit strategy". This means that the company can now be owned by the public by means of stock shares. In other words, IPO can be seen as a trade-off between the company sharing information with the public and its decision of either expanding the business or exiting it.

Despite expansion and exiting being common motives for going public, many companies have a different set of motives. According to Celikyurt et al. (2010), IPO helps in gaining access to capital and assists in capital growth. It also facilitates cashing out, improving sales, diversifying the risks, providing transparency, grabbing market shares from competitors, and, more importantly, providing liquidity. Companies could share information about the share price and current and future projects/ investments according to Chemmanur and Fulghieri (1999). According to Celikyurt et al. (2010), "IPO firms play a bigger role in the M&A process by participating as acquirers than they do as takeover targets, and acquisitions are as important to their growth as research and development and capital expenditures." It is therefore important for the firms to understand the motive of going public and keep sources of for funding in mind.

In contrast, some of the disadvantages of going public were discussed by Chemmanur and He (2011). They mention that "going public is costly: each firm has to incur a significant cost if it chooses to go public." Marra and Suijs (2004) also say that "since the issuing cost of public capital is relatively high, public financing is beneficial only for those firms that will most likely avoid incurring a proprietary cost in case of public financing." On the other hand, Bancel and Mittoo (2009) say that "the increased transparency and external monitoring is a major benefit of going public, not a cost. The decision to go public cannot be explained by one single theory because firms seek multiple benefits in going public." Apart from being costly, other companies will know about the internal conflicts. Companies undergoing IPO may also experience a shock in their performance in case of economic or financial crises which can disrupt their share market. Other factors that can be seen as disadvantages of IPO were mentioned by Wies and Moorman (2015) as "driving an IPO to the public as an organization that can promptly go under open judgment from the public side, incorporate confinements on the authoritative arrangement of the organization, directing an IPO influences organization to wind up progressively to innovative because of the economic capital they presently possess which happens at the outcome of ideas being risky to the organization".

The reasons behind organizations directing IPOs are entirely based on the firm itself, its current conditions and its future orientation. Moreover, it has turned out to be progressively less difficult for attaining liquidity for an organization even while remaining private. This can either be beneficial for the organization and more prominent if taken seriously and with proper measures and considerations, or it can end up being a disaster due to the unpredictability of the share markets and its buyers or sellers. On a whole, it can be said that going public completely depends on how the company manages itself in the share market.

In addition, there are many studies about why firms go public. Jong, Huijgen, Marra and Roosenboom, (2012) investigated the impacts of product market characteristics on the decision to go public. Their paper shows the benefits and the trade-off cost of going public. Based on their studies, they found that a company in a profitable industry is more likely to go public to strengthen its market position. They used industry margin of IPO company and private company to analyze that. These companies are less likely to lose their confidential information. However, firms that are profitable are less likely to go public because they can finance their investment projects by using their retained earnings. Another finding is that firms in capital-intensive industries lower their profitability of IPO. Therefore, firms in non-capital industry are more likely to go public because IPO motivates them to adopt more aggressive product market strategies. This reduces the loss of confidential information. In addition, the writers tested the market share of the firms to realize the effect on IPO decision. They found that companies with high market share are more likely to be public listed because of less impact of losing their confidential information. Capital expenditure and the growth of sales are other variables that are used to test the decision of IPO. The finding was that firms with high capital expenditure and growth are more likely to go public. The reason is that there are more investment projects that need to be funded and growing sales achievements, so these firms can easily handle and cover the fixed cost of IPO. Moreover, companies that beat their debt capacity or want to re-balance their capital structure are more likely to go public. Also, if companies have high equity valuation related to their industry, they may be more encouraged to become public listed.

Another study by Benninga et al (2005) examined the timing of going public by using the model of entrepreneur's decisions. This model provides the value function of the firm by using the cash flow of the company as indication of optimal timing. This shows that companies either to go public or reprivatize to regain their private benefits. The writer found out that when the firm raises its cash flow above a certain critical level, which can be interpreted as the firm has value equal to public firm, it is time for it to go public. Adversely, if the cash flow of the company is below the certain critical level, it means that the public company's value is equal to the private company, so it is the time to reprivatize. This of course has to take into consideration the macroeconomic factors that may be present at the time of evaluation which do have an effect on the cash flow of the company. Good economic condition affects the cash flow of private and public firms positively because their relationship is positively correlated. It was found that entrepreneurs tend to trade-off the advantage of diversification against private benefits, according to (Benninga, S., M. Helmantel and O. Sarig, 2005). However, if the cash flow becomes high, the company should go public and benefit from diversification.

Also, Boehmer, and Ljungqvist (2004) investigated the performance of public firms to see if there are motivations to go public or not. Going public is effective when its benefits exceed its cost. Usually firms decide to go public to raise capital and rebalance their capital structure that help in sustaining high growth rate or reducing the level of debt which helps in surviving. Through IPO companies can raise capital without debt cost or venture capitalists' restrictions and risk. After IPO, firms can raise money through second offering. Insurance companies are more likely to go public because raising equity capital is cushion for their risk and chief support of their underwriting's capacity. Private insurance companies face difficulty when they raise capital since they have limits due to asymmetric information. As for the downside of IPO that may occur, the dilution of management ownership usually increases the cost of agencies and cause moral hazard problem. In other words, more shareholder may weaken the management of the business. This may lead to suffer the performance of the public firm since increasing the conflict among the agencies, the managers, and the shareholders. Signaling cost is another cost that large firms are more likely to handle than the small firms. To send a positive signal to the market, the original owner retains a significant ownership stake in the firm, (Leland and Pyle, 1977) or underprice their IPO shares (Allen and Faulhaber, 1989, Welch, 1989). Going public will simplify the transaction of acquisition (Zingales, 1995). The firm can make less expensive acquisitions through paying stock while preserving company's cash position (Boehmer, E. and A. Ljungqvist, 2004). Brau and Fawcett (2006) argue that the most significant motivation of going public is offering public shares for use in future acquisition. In their paper they found that IPO property-liability insurance company are more likely to face capital constraints than private firms. Surprisingly, IPO firms are less profitable than private firms before going public. Insurance companies benefit from the IPO in improving the allocative efficiency and cost efficiency; they are released from capital constraints.

Additionally, María de las Mercedes Adamúz and José Luis Rivas (2018) argue that companies that have more debt are more likely to go public. Going public helps them to rebalance the capital structure. Pagano et al. (1995) argue that companies facing higher interest rates and more concentrated credit sources are more likely to go public, and credit will become cheaper and more widely available after an IPO. Furthermore, Chod and Lyandres (2011) examined the decision of going public in the presence of product market competition. They found that the incentive to go public is shareholders risk diversification. Also, public companies are less concerned about idiosyncratic earnings variability than similar private firms (Chod and Lyandres 2011). This enhances the product market aggressiveness and equilibrium proportion of the public firms. This leads to a greater competitive interaction that resulting in increasing the market share of the public firms. Kim and Weisbach (2008) claim that most firms raise new funds during the IPO, and

these funds are used for several purposes including financing growth. IPO enhances the growth of companies since they become able to finance investments by raising fund from using the stock market. Boubaker, Adel, Mezhoud, and Mediha (2012) found that a large firm with high profitability is more likely to go public. In addition, market conditions influence the timing decision of going public. Boubaker, Adel, Mezhoud, and Mediha (2012) showed that in bullish periods of high activity characterized by a high Market-To-Book ratio, firm are motivated to go public.

3. DATA ANALYSIS AND METHODOLOGY

This research employs financial ratios approach to evaluate the financial performance of petrochemical industry in Saudi Arabia. For this purpose, this research selects four companies, three of which are publicly listed, and one is private and compare their performance over the sample period 2008 to 2018. The public companies are Petro Rabigh, YANSAB, and SABIC and the private company is SATORP. The data is extracted from the financial statements of these companies. This research selects the most commonly used indicators of firms' financial performance such as profitability ratio, liquidity ratio and activity ratio. We analyze the financial performance across the companies and pre IPO and post IPO comparison for each publicly listed company.

The study uses return on assets (ROA), return on sales (ROS), as the measures of profitability whereas current ratio and fixed asset turnover ratio represent liquidity and activity respectively. Returns on assets measures the efficiency of asset exploitation and returns on sales (ROS) is used to evaluate the companies' operational efficiency. Returns on sales (ROS) is also closely related to "operating profit margin". The third ratio is the current ratio, which demonstrates the ability of the company to fulfill its short- term obligations by using its short-term asset. It is one of the liquidity measurements. A current ratio higher than or equal to one indicates that current assets should be able to satisfy short-term liabilities. A current ratio smaller than one indicates that the company may face liquidity issues. The fourth and last financial ratio is the fixed assets turnover. This ratio measures how efficiently company's fixed assets are used to generate sales. A high fixed assets turnover indicates that a firm has used its fixed assets investment to generate sales/revenue and it is used to the productivity of the company.

Figure 2 Analysis of Returns on Assets

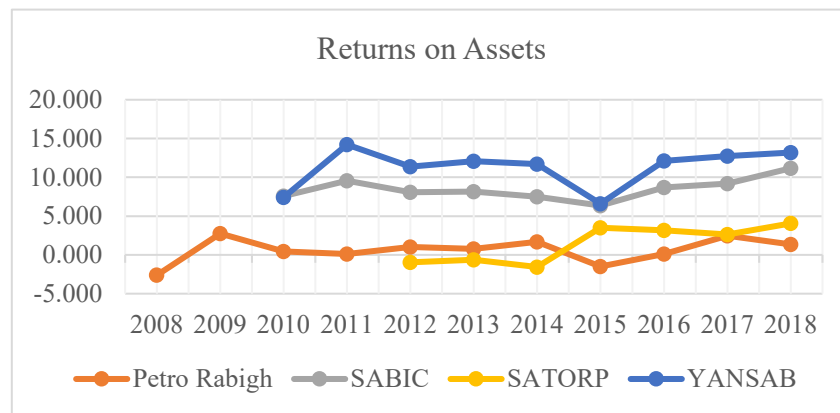


Figure 2 presents the return on asset for four selected companies and it compares the profitably and efficiency to use assets generate profits. According to Figure 2, Petro Rabigh's ROA is improving after its IPO in 2009 and starts declining during the global economic recession and decrease in the oil price in 2014, then it began improving again since 2015. SABIC and YANSAB ROA increased after they became public which is in 2010. Their decline is tied with the decrease in the oil price. SATORP ROA has a great increase from 2014 to 2015 because it started its commercial operation which is moving in the opposite direction of all other three companies. SABIC and YANSAB obviously are performing greater than SATORP throughout the whole period.

Figure 3. Analysis of Returns on Sales

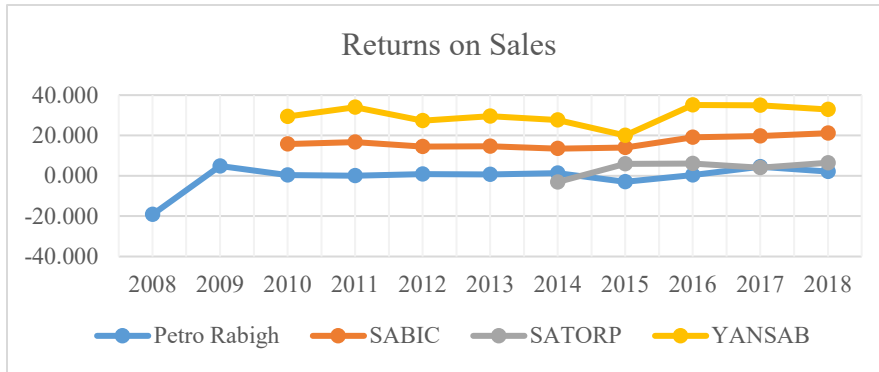


Figure 3 shows the return on sales, which shows the companies' operational efficiency; it is considered as operating profit margin because they are almost similar measurements of the company's profitability. The graph shows that public firms' ROS is almost moving opposite than SATORP's ROS. Also, over the periods YANSAB and SABIC have higher ROS than SATORP. SABIC, YANSAB and Petro Rabigh are more affected by the economic recession. In addition, the other two companies SABIC and YANSAB have return on sales more than SATORP even during the economic recession and both performed much better.

Figure 4. Analysis of Current Ratio

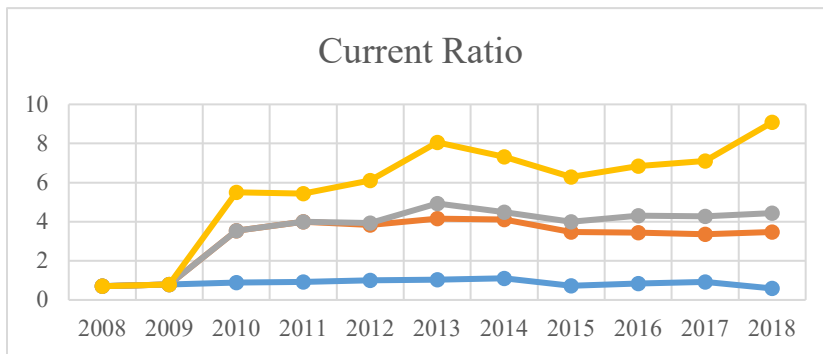


Figure 4 presents the current ratio, which measures the liquidity of the company and evaluates the company's ability to fulfil their short-term obligations. According to the graph, public firms have current ratio better than SATORP even during the recession that happened in the economy. This means that SABIC, YANSAB and Petro Rabigh's short term liquidity is better than SATORP which are more able to fulfill their short-term obligations than SATORP.

Figure 5. Analysis of Fixed Assets Turnover

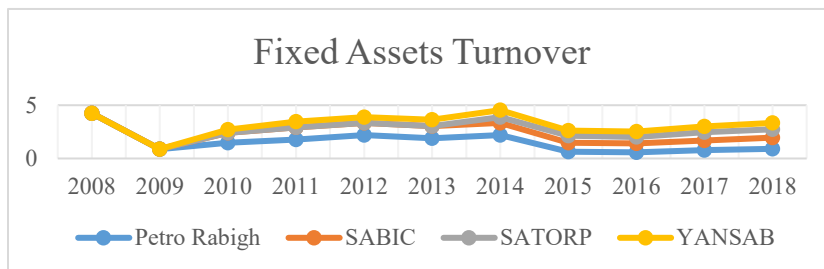


Figure 5 compares the fixed asset turnover ratio across the selected companies. This ratio indicates efficiency of the companies and measures their ability to generate sales by utilizing fixed assets, which are typically property, plant and equipment. The graph shows that only one public company is better than the private company (SATORP). This means private company is overall better in managing its fixed asset investment to generate earnings in the long term.

Since this study is constrained by the number of non public companies, therefore to check the robustness of our analysis, we also compare the financial performance two of publicly listed companies(SABIC and Petro Rabigh) for pre IPO and post IPO time. Table 2 shows the comparison of financial performance of SABIC for pre and post IPO during 2008- 2018. We take the average score for pre IPO (2008-2013) and post IPO (2013 -2018). The results reveal that the ROA for SABIC is lower before going public. However, current ratio and fixed assets turnover ratio remain same for both sample periods. In addition, return on sales is lower when company went public (Table 2).

Table 2. – Comparison of SABIC’s Financial Performance for Pre & Post IPO time

	SABIC Pre-IPO	SABIC After IPO
Return on Assets	4	8
Current Ratio	1	1
Return on Sales	19	15
Fixed Assets Turnover	1	1

Table 3 displays the performance of Petro Rabigh before and after the IPO. For Petro Rabigh we consider the period between 2006-2011 (examining 3 years of before being public and 3 years after going public). It has higher returns on assets and returns on sales when they are public. However its current ratio and fixed turn over ratio are the same before and after the IPO (Table 3).

Table 3. – Comparison of Petro Rabigh’s Financial Performance for Pre & Post IPO time

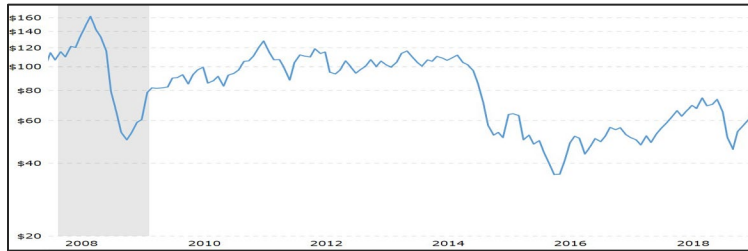
	Petro Rabigh Pre-IPO	Petro Rabigh After IPO
ROA	0	1
Current Ratio	1	1
ROS	(5)	1
FAT	2	2

The analysis of financial performance during pre & post IPO reveal that overall companies are performing better or having same performance, afterbecoming public compare to when they were private (Table 2 & 3). This supports our findings from the analysis of financial ratios for the overall sample period, which indicate that, the public companies are capable to demonstrate better performance than private companies are. Especially public firms have better ROA than the private firms. Public firms have better liquidity ratio than the private which is more than 1. In addition, most of the public firms’ liquidity are increasing through the years. This may happen due to the decrease of portion of the long-term loan. Public firms may reduce their debt by using equity to finance their activity. This enhance the current ratio of the company.

This research also finds the co-movements between the financial performance of public companies and oil prices change. Oil price changes are mainly affecting the return on assets in public companies as higher oil prices directly affect the sales revenues of petrochemical companies in Saudi Arabia and similarly a decrease in oil price has negative impact on the sales revenues of these companies (Figure 6). However, private firms are moving opposite direction of

oil price movement. This may happen due to many reasons such as lack of operations management in public companies or can be attributes to principal –agent problem. In addition, decreased oil prices also affect the fixed asset turnover ration in the publicly listed companies.

Figure 5 Oil Prices Changes



4. CONCLUSION AND DISCUSSION

This research paper provides a summary of the impact on the financial performance of petrochemical companies when they decide to switch their status from private to public. In this regard, the impact of IPO has been analyzed through the selection of four major companies that dominate the petrochemical industry in Saudi Arabia.

With SATORP being a privately held company and SABIC, YANSAB, and Petro Rabigh being public, the financial statements of these companies have been collected and thoroughly analyzed. The methodology in these analysis utilizes some of the most important financial ratios: the current ratio, fixed assets turnover, return on assets and return on sales. Careful examination of these ratios has provided important insights on how public companies' performance has been affected post the IPO in comparison to the privately held SATORP.

Considering ROA, the three public companies demonstrated stability and occasional increase throughout the examined period from 2008 to 2018, except for 2015 when the economic recession negatively impacted their performance. This is as opposed to the private SATORP whose ROA was rather decreasing throughout this period and even showed significant improvement in 2015, unlike the public companies. Similar trend is demonstrated by the other ratios where the public companies generally show matching trajectory while the private company consistently shows an opposite trend, especially during the recession year of 2015.

Overall, the public companies have achieved higher profitability ratios i.e. ROA and ROS compared to the private firm. In addition, the financial performance of public companies seems to be heavily influenced by the global crude oil prices and their revenue trend is directly following the oil price trend. At the same time, the private firm shows autonomy from the global oil price trend and this autonomy helped SATORP achieve significant growth during 2015 when the public companies made major losses due to the economic recession. As mentioned earlier, many experts attribute that to the fact the most public companies focus on performance reporting to stakeholders during the hard recession times rather than focusing on the actual performance.

With consideration to liquidity, public companies have achieved better liquidity ratios than the private firm over the same period. Based on the current ratio analysis, it is even safe to say that it is easier for public companies to improve their liquidity compared to private companies by using equity to finance their activities, rather than increasing their long-term loans and debts.

To summarize, the public companies (SABIC, YANSAB, and Petro Rabigh) have demonstrated better financial performance compared to the private company SATORP, despite the economic recession. However public firms look more sensitive to the economic conditions. The analysis has shown that Petro Rabigh, SABIC, YANSAB were negatively affected by the economic recession compared to SATORP. Otherwise, the financial performance of the public companies demonstrated better performance than the private company. This represents the positive impacts of going public on the financial performance of the company. This also proves that, as a petrochemical company, remaining private means that the firm must sacrifice some important benefits that can be otherwise gained by becoming public.

After evaluating and analyzing petrochemical companies' financial performance which are public and private firms, we found that their performance is better than where they were private. Also, this study compared the performance of same company before and after the IPO, it was observed that most of petrochemical companies that we analyzed are

performing better than where they were private. Therefore, it is recommended that the petrochemical company to become public; because of the better performance later.

The limitation of this research is mainly concerned with the availability of the data. Particularly, obtaining information on the financial statements of subject companies is considerably difficult especially for private companies, as well as public companies for the periods prior to IPO.

In addition, it can be observed that macroeconomic factors have impacted the financial performance of the tested companies. This is despite the availability of internal information that could justify particular instances of increase or decrease in companies' revenue or profits.

It is noteworthy that all public companies examined in this research demonstrated an increase in the ROA, ROS, current ratio, and fixed asset turnover in the post-IPO period. Keeping in mind that data for these companies is not available before the IPO, this increase could be a "recovery" trend from a temporary decrease during the IPO year or an indicator of improved sales and liquidity after the IPO transition. Further analysis can be conducted in the future to examine this trend based on actual evidence, and thorough examination of business conditions that surround the IPO period.

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