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FINANCIAL PERFORMANCE, DISPARITY, AND TREND OF PETROCHEMICALS SECTOR OF SAUDI ARABIA

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Abstract. Historical financial performance analysis of the business organization is the parameter of success and failure of operational activities and financial soundness while analysis of a particular industry explains the contribution towards the nation of the economy. In Saudi Arabia, petrochemicals industry is playing a vital role and contributes significantly to the Gross Domestic Product (GDP) of the nation. Some Saudi petrochemicals companies perform well while others performance unexpected or below the standard. There is financial disparity seen in the petrochemicals industry of Saudi Arabia and no study available in Saudi petrochemicals industries context to disclose financial performance, disparity and its trend. So, it is very necessary to analyze the financial reports of the petrochemicals companies to get the historical financial performance disparity and explain its trend. Some leading petrochemicals companies of Saudi Arabia selected for the financial performance study and operational performance, and financial soundness ratios applied to get the financial performance for specific duration. Statistical tools applied to know the significance of variance and trend of financial performances. The study discloses that the Gross profitability of all petrochemicals companies significantly different while the gross profitability also governs the other measures of financial performance. The trend financial performances of petrochemicals companies reveal a decline in operational performance or Gross profitability that governs the decline of other measures of financial performances.

Keywords: Ratio analysis; Variance analysis; Profitability; Financial soundness; Paying-ability; Return on equity; Return on investment

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JEL Classification: P27, C43, L25, L65, M41

1. Introduction

Financial performance of an organization is the measurement of success of operational activities and financial soundness and historical analysis of a particular industry reveal the growth and contribution to the economy of the nation. The petrochemical industry of Saudi Arabia plays a significant role in the development of the economy and an ingredient of the gross domestic product (GDP). In Saudi Arabia, petrochemicals companies export their petrochemicals products worldwide that is the key source of their revenue. The optimum performance expected from the companies engaged in manufacturing and marketing similar products. Normally, in any industry, some

companies perform well while others' performance is the below expectation. The performance of petrochemicals companies can be measured on the basis of absolute and relative analysis. The absolute analysis reflects the level of size of business activities while relative analysis explains the efficiency of business activities or how efficiently a business organization is managing its activities. The financial performance can be bifurcated into two categories: operational performance and financial soundness. If other factors remain constant, the relative performances of all companies of a sector must be same. The negative variations in relative performances of the companies of a particular sector reveal the inefficiency and company is marked as poor performer in the industry. The performance of poor business organizations needs to be reviewed so that it can also contribute equally to the development of the nation. In the Saudi Petrochemicals industry, the performance of some petrochemicals companies is not so satisfactory that the resulting unexpected growth and development. It is evident that after the global economic recession (2008 & 2009), there was a major decline in the financial performance of most petrochemicals companies. So, there is a need to get the average financial performance of the companies and its trend and most importantly analyze the disparity in growth rate and its probable causes.

2. Literature Review

Mensi, W. (2019) found that among the fifteen sectors petrochemicals sector is the most affected sector by the price movements while other sectors like bank, telecommunication, media and publishing, hotel and tourism, and agriculture sectors are unaffected. Al-Shuaibi, K., Zain, M., & Kassim, N. (2016) explained that competitiveness is playing a vital role in quality and innovation and finally it improves the financial performance of the business organization in Saudi Arabia. Shahmirzadi, H. E. (2017) revealed that an appropriate strategy to develop the product and products' marketing increases the turnover of the petrochemicals products. Sultan, Z. A., & Haque, M. I. (2018) explained the importance of oil exports and found that the economic growth of Saudi Arabia is positively and directly related to oil exports. They further recommended the regulation of oil exports and the diversification of the Saudi economy. Albassam, B. A. (2015) also suggested the diversification for sustainable economic growth and development of Saudi Arabia because the petrochemicals sector is not contributing expectedly. He indicated that excessive reliance on natural resources is not good and in the long run may be affected by the lower prices. Al-Malkawi, H. A. N., & Javaid, S. (2018) observed that, in Saudi Arabia, there is a strong positive relationship between corporate social responsibility (CSR- Zakat) and corporate financial performance (CFP). He suggested that Zakat is enhancing the profitability and value of the business organization. The results reveal that there is a strong positive relationship between CSR (Zakat) and CFP. Buallay, A., Hamdan, A., & Zureigat, Q. (2017) explained in their studies that there is no significant impact of corporate governance on the operational and financial performance of the Saudi companies. It refers that the corporate governance does not affect the financial performance while there is a positive relationship found between the size of the ownership, the board of directors on firms' performance. ALI, A. H. H., & Abu Theeb, E. H. N. (2018) found that the increased cost of sales was the factor of responsible for the negativity of the petrochemical sector during the global economic recession. Alidrisi, H., Aydin, M. E., Bafail, A. O., Abdulal, R., & Karuvatt, S. A. (2019) explained the vitality of financial performance and suggested that monitoring the efficiency and financial performance is necessary for the expected performance of the firms' which contribute an important role in the Saudi economy, ultimately. Akhtar, M. H., & Asif, M. (2017) found operational inefficiencies and underutilization of the resources are the main reasons responsible for the low performance in the petrochemical industry. They indicated that the enhancement of level of operational efficiencies, and optimum utilization of resources facilitate the expected performance of the petrochemicals industry of Saudi Arabia. Lele, U. (2016) explored that there a strong correlation between global oil prices with revenue growth, net margin and return on equity of listed companies of Saudi Arabia. As per Lele, oil prices (external or uncontrollable factor) govern the profitability of the petrochemicals companies in Saudi Arabia. Samargandi, N., Fidrmuc, J., & Ghosh, S. (2014) found in their studies that the impact of financial development in Saudi Arabia either negative or negligible. The financial development does not affect the financial performance of petrochemicals companies or the financial development of the economy does not governs the financial performance of petrochemicals companies while some other

internal and external factors responsible of firms' performance. Khan, M. Z. R. M. N., & Khokhar, I. (2014) basically considered the operational performance and revealed that in the petrochemicals sector in Saudi Arabia the profitability of the companies is governed by the velocity of operational activities i.e. turnover of the creditors, debtors, inventory, total assets, and debt-equity ratio. Al-Ajlouni, A., & Shawer, M. (2013) found that there is no significant relationship between capital structure (Debt-equity ratio) and return on investment (ROI) and return on equity (ROE) while there is the weak relationship with the net profit margin (NPM). It facilitates that capital structure does not govern the profitability while other factors are responsible for financial performance of the business organization.

3. Research methodology

The research is based upon the secondary data obtained from the websites of petrochemicals companies of Saudi Arabia from 2004 to 2016 but two years (2008 and 2009) data is not to be considered as it was the abnormal (Global Economic Recession- GER) period. To know the average financial performance ratios are to be calculated from the financial statements of the petrochemicals companies. Financial performance of the petrochemicals companies are measured based on the profitability and paying ability criterion. To assess the profitability Gross profit ratios are calculated that is the reflection of operational performance. Return on Investment (ROI) and return on equity (ROE) ratios calculated to know the profitability on capital investment and shareholders' point of view. The current ratio and Debt-equity ratio are calculated to know the short term and long term paying ability of the companies. Following formula applied to measure the financial performance (Ali & Haque, 2014):

$$\begin{array}{ll}
 \text{I. Gross Profit Ratio} = \frac{\text{Gross profit} \times 100}{\text{Net sales}}, & \text{II. ROI} = \frac{\text{PBT/Z} \times 100}{\text{Total Assets}} \\
 \text{III. ROE} = \frac{\text{PAT/Z} \times 100}{\text{Shareholders' equity}}, & \text{IV. Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} \\
 \text{V. Debt-equity Ratio} = \frac{\text{Long-term debts}}{\text{Shareholders' equity}}
 \end{array}$$

Where, PBT/Z= Profit before tax/zakat, PAT/Z= Profit after tax/zakat,

The averages of all ratios of petrochemicals companies are to be calculated to get the average financial performance of the petrochemicals industry. To get the significance in the disparity of financial performance of petrochemicals companies AVOVA (Analysis of Variance) of averages of financial ratios is calculated. The graphical presentation of all profitability (Gross profit, ROI, and roe) and financial soundness ratios (Current ratio and Debt-equity ratio) prepared which are based on the yearly ratios of the petrochemicals companies for the period 2004 to 2016 (excluding 2008 and 2009). Following formula applied to calculate averages trend indices (ATI_{FBI}) of index numbers of financial ratios:

$$\text{ATI}_{\text{FBI}} = \frac{\sum \text{FBI}}{N},$$

Where, ATIFBI= Average of trend indices (based on fixed base index numbers), \sum FBI= Sum of Fixed Base Index numbers of financial ratios for study period, N= Number of years considered for the study period.

The trend indices (ATI_{FBI}) will explain the disparity in financial performances of petrochemicals companies and helps in facilitating the suggestions for poor-performing petrochemicals organizations. In calculating trend indices (ATI_{FBI}), the year 2004 is considered as base year except wherever ratio is negative or abnormal (More deviating) as per the average of the particular ratio.

4. Analysis and Interpretation

The financial analysis of the petrochemicals companies, get the significance variances in financial performances, and disparity trend are the objectives of study. The financial ratios of the petrochemicals are the base of the study. So, the study can be divided into three categories. First, to know the average financial performance of the petrochemicals companies financial ratios are calculated from the period 2004 to 2016 (excluding 2008 and 2009). Secondly, Analysis of Variance (ANOVA) calculated to know the significance of the variances among the financial performances of the petrochemicals companies. Third, index numbers and their averages calculated and used in developing the chart to get the trend and weaker aspects of the financial performance of petrochemicals companies.

4.1 Average Financial performances of the petrochemicals companies

The financial performance of the petrochemicals companies measured by established financial ratios. Gross profit ratio, Return on investment, and Return on equity measure profitability for the efficiency of operational activities, utilization of funds or resources, shareholders' point of view (Ali & Haque, 2014). The average performances of the Saudi Petrochemicals companies are as follows.

Table 1. Averages of financial ratios of the petrochemicals companies (2004 to 2016)

Petro. Comp.	Average Financial Ratios											
	Gross Profit	Rank	ROI	Rank	ROE	Rank	Current Ratio	Rank	Debt Equity Ratio	Rank	Av. Rank	Overall Position
SAFCO	62.90	1	28.08	1	32.76	1	4.39	1	0.22	1	1	1
SABIC	33.62	3	9.47	2	20.14	2	2.78	3	0.69	2	2.4	2
NAMA	-6.51	6	-5.75	6	-26.08	6	1.83	6	1.07	4	5.6	6
TASNEE	28.08	4	3.29	5	10.29	5	2.02	5	1.37	6	5	5
Sipchem	44.54	2	4.66	4	10.55	4	2.68	4	1.11	5	3.8	4
SIIG	21.10	5	7.89	3	13.41	3	3.31	2	1.04	3	3.2	3
Average	30.62		7.94		10.18		2.84		0.92			

Source: Averages of Ratios calculated from the financial statements of the petrochemicals companies for the period 2004 to 2016.

From the above table of the average financial ratios, it can be concluded that the results of overall operational activities are satisfactory (30.62%). But, the individual operational performance of some companies not reflects the efficiency as it is negative in the case of NAMA while it is lower in SIIG petrochemicals company. The operational performance of the SAFCO and Sipchem is satisfactory and above the average of the petrochemicals industry. The return on investment of the petrochemicals industry is 7.94% on its employed funds. It is lower due to the underutilization of resources by NAMA (-5.75%), TASNEE (3.29%), and Sipchem (4.66%) petrochemicals companies. SAFCO (28.08 %), SABIC (9.47%), and SIIG (7.89%) utilize their resources efficiently. The company owners' point of view SAFCO (32.76%) and SABIC (20.14 %) perform well while SIIG (13.41%), Sipchem (10.55%), and TASNEE (10.29%) petrochemicals companies perform average. The return on equity of the NAMA is only negative (-26.08) as its return on investment was also negative (-5.75%). The short term paying ability of SAFCO, SIIG, SABIC, Sipchem, and TASNEE was satisfactory as all the companies are satisfying the criterion of 2.1 of the Current ratio except NAMA. The Current ratio of NAMA is below the standard (1.83 times) reflects weak short term paying ability. The long term paying ability of the companies reflected by the Debt-Equity ratio as it supports operational performer petrochemicals companies. All companies working on equity except SAFCO (0.22 times), and SABIC (0.69 times). TASNEE (1.37 times),

Sipchem (1.11 times), NAMA (1.07 times) , and SIIG (1.04 times) enjoying the external funds and working on equity. Working on equity is favorable for owners' point view but negative for long term paying ability. The long term paying ability of the SAFCO and SABIC is better than the rest companies working on equity. As per the ranks of financial ratios of all companies SAFCO, SABIC, and SIIF perform well while NAMA, Sipchem and TASNEE companies' financial performances are needed improvements. All the petrochemicals companies' profitability and paying abilities are varying from their averages as it is reflected in the above table. So, there is a need to assess the significance of variations in financial performances.

4.2 Variations in financial performances of petrochemicals companies

From the above analysis of average financial performances of petrochemicals companies, it is obvious that that there are variations in financial performances of petrochemicals companies for the period 2004 to 2016. As per the size of the corporation, the absolute amounts of the petrochemicals companies will vary but the relative performances of the companies must be the same if there is no disparity in the operational performance, and financial soundness or short or long term paying ability. Some companies are performing well while other performances are not satisfactory. So, to assess the significance of variations of financial performances among the corporations ANOVA (Analysis of Variances: Single-factor) is applied.

Table 2. Variations in Financial Ratios Performances

SUMMARY: ANOVA- Single Factor						
Ratios	No. of Companies	Sum of Ratios	Average of Ratios	Variance of Ratios		
Gross profit Ratio	6	183.7361	30.62269	544.0104		
Ret. On Invest.	6	47.65494	7.942491	125.5257		
Return on Equity	6	61.07562	10.17927	386.9124		
Current Ratio	6	17.01016	2.835026	0.867142		
Debt- Equity Ratio	6	5.503608	0.917268	0.164281		
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	3372.881	4	843.2203	3.986933	0.0123	2.75871
Within Groups	5287.399	25	211.496			

Source: Averages of Ratios of petrochemicals companies are used as variables (from the Appendix 6) in ANOVA.

From the above analysis of variance, it can be concluded that there are variances in the Gross profit ratio (544.0104), Return on Equity (386.9124), and Return on investment (125.5257) among the petrochemicals companies of Saudi Arabia. It reveals that there is high operational performance disparity among the petrochemicals companies. The Gross profit ratios of the companies are the base for utilization of resources and govern the policies short-time and long-time paying ability of the business organizations up to some extent. So, a high variance in the gross profit ratio will lead the disparity in all dimensions of the financial performance while specifically operational performance or profitability of the companies. The calculated value of F- Ratio (3.98693) is more than the critical value (2.7587) as it is evident for the significance of variances. So, there is a need to find out the trend of disparity of financial performance among the petrochemicals industry of Saudi Arabia.

4.3 The trend of disparity of financial performance among petrochemicals companies of Saudi Arabia

From the above ANOVA analysis, it is very clear that the financial performances of the petrochemicals companies are not similar and significant disparity seen in all the financial ratios specifically in profitability

ratios. This implies analyzing all the financial ratios by developing trends using the fixed base method of index numbers. The index numbers will measure the disparity of a ratio for a given period from 2004 to 2016 (excluding 2008 and 2009).

4.3.1 Disparity Trend of Gross Profit Ratio

There is a high disparity or variance seen in the Gross Profit ratios (544.0104) of the petrochemicals companies of Saudi Arabia for the period 2004 to 2016 (As shown in the ANOVA analysis). It is well known that the Gross Profit ratio reflects the profitability and governs the overall financial performance of the business organizations (Ali & Haque, 2014). The average gross profitability of SAFCO (62.90%), (SABIC 33.62%), Sipchem (44.54%) reveal satisfactory and above the average of the petrochemicals industry (30.62%) while the TASNEE (28.08%), SIIG (21.10%) perform below the average for the period 2004 to 2016 and need to improve their operational abilities. The average operational performance of the NAMA is unexpectedly negative (-6.51%) for the period of 2004 to 2016 (Appendix 1). So, there is a need to enhance the level of activities by the TASNEE and SIIG to enjoy the profitability at a larger scale of production because indirect expenses will remain constant and increase the margin for profit. Second, there is a need to minimize the manufacturing expenses by adopting the advanced technology of production to save money and time. NAMA has to revise its whole business pattern as the gross profitability is negative. On one hand, NAMA must control its expenses and other hands try to enhance the turnover keeping the margin for the gross profit. SAFCO Petrochemicals Company not only maintained its only profitability but also increased significantly up to 127% in a time span of 2004 to 2016 while it has seen extremely negative in NAMA(-54%). The Operational performance trend of SAFCO (127%), SABIC (86%), and TASNEE (82%) is above the average (74%) of the petrochemicals industry while TASNEE and SABIC could not maintain its profitability as before because of it below 100%. The operational performance of the NAMA(-54%), Sipchem (62%) and SIIG(58%) is much less than the average of the industry(47%). Overall, gross profitability of petrochemicals companies got decreased by 26% (as the average is 74%) in duration of years 2004 to 2016 (Appendix 1). Surprisingly, only the trend of operational performance of the NAMA is negative and it was in all comparatively lowest in the industry (Appendix 1). The average profitability of petrochemicals industry of Saudi Arabia was consistently stable before the Global economic recession (2008 & 2009) and started to decline after that. Not only the global economic recession but the prices and demand for petrochemicals products affect the profitability of the petrochemicals organizations that is unavoidable.

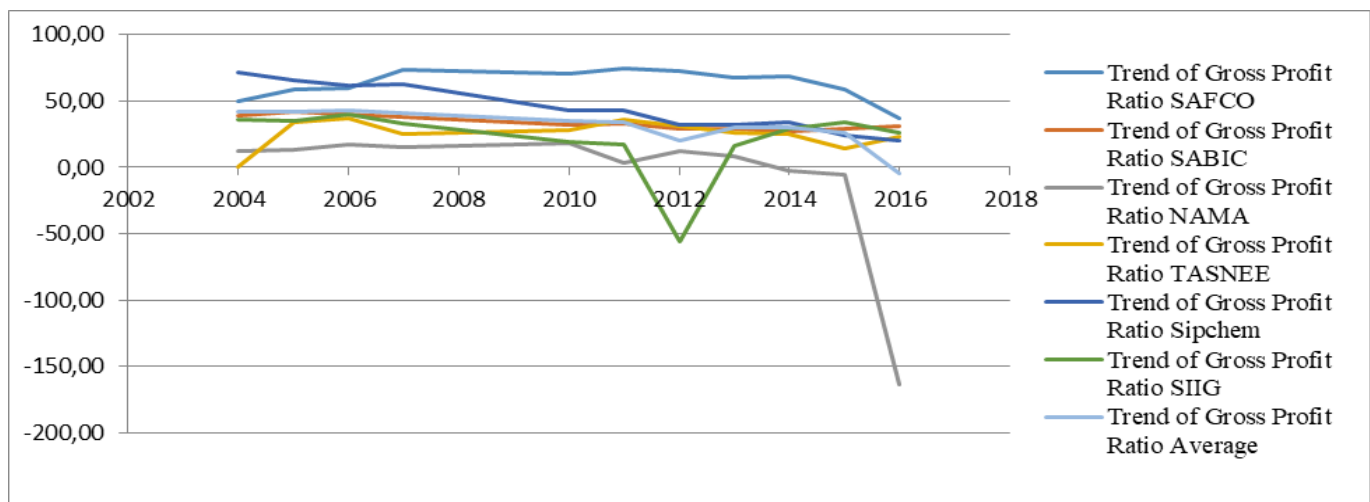


Figure 1. Trend of Gross profit ratios of petrochemicals companies in Saudi Arabia from 2004 to 2016
 Source: The Gross profit ratios of petrochemicals companies (2004 to 2016) used to draw the chart (Appendix 1)

The above line chart is alarming and reveals that the past performance based on the average operational performance of the petrochemicals industry will move down whereas SAFCO, Sipchem will not be able to maintain their past performance. SABIC, SIIG and TASNEE will try to attempt maintain their level of profitability in future. The future profitability of NAMA is unpromising.

4.3.2 Disparity in Trend of Return on Investment (ROI)

There is also disparity seen in the trend of return in investment (125.5257) in the petrochemicals sector of Saudi Arabia for the period 2004 to 2016 (As shown in the ANOVA analysis). It is established that the return on investment reflects the utilization of resources of the business organization (Ali & Haque, 2014). The average return on investment SAFCO (28.08%), SABIC(9.47%), and SIIG (7.89%) are above or near the average of the petrochemicals industry(7.94%) while TASNEE (3.29%), SIIG (4.66%) perform below the average for the period 2004 to 2016 and need to improve their abilities of utilization resources. The average utilization of resources performance of the NAMA is unexpectedly negative (-5.75%) for the period of 2004 to 2016 (Appendix 2). So, there is a need to enhance the level of activities and utilization of resources by the TASNEE and SIIG to enjoy the benefits at a larger scale of production. Second, there is a need to enhance the level of turnover or activities by manufacturing new or innovative products to enhance the demand for the products in the global market. NAMA has to revise its whole business pattern as the gross return on investment is negative. NAMA must control its expenses and other hands try to enhance the demand of products in the market and turnover keeping the margin for the gross profit. The average return on investment of petrochemicals industry of Saudi Arabia was increasing trend before the Global economic recession but started to decline after that. Only SAFCO Company’s return on investment was above the average and the rest of the companies could not maintain its level and get decreased every year (Appendix 2).

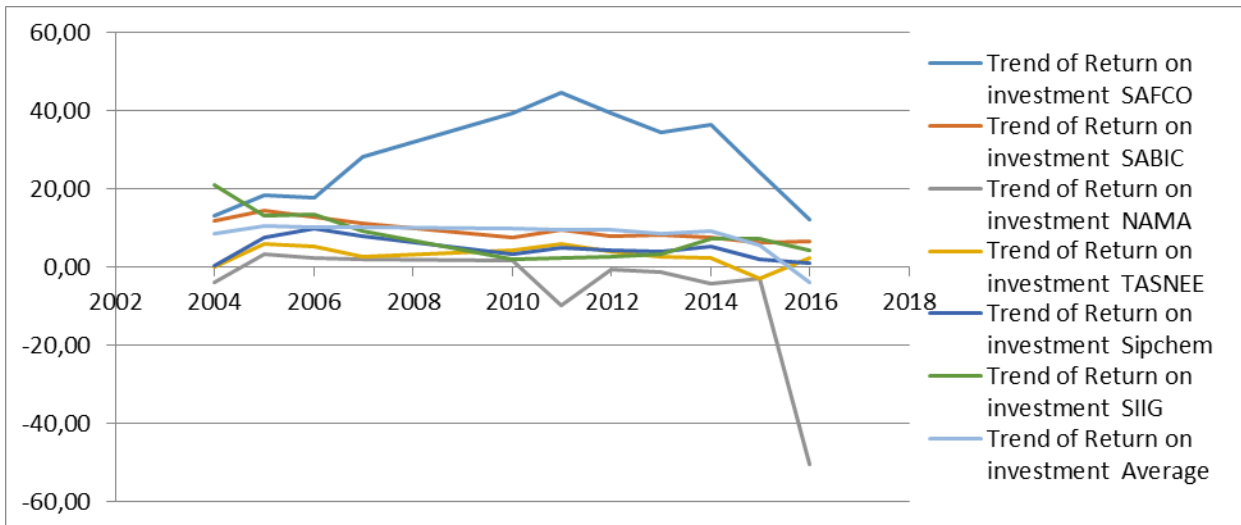


Figure 2. Trend of Return on Investment ratios of petrochemicals companies in Saudi Arabia from 2004 to 2016
 Source: The Return on Investment ratios of petrochemicals companies (2004 to 2016) used to draw the chart (Appendix 2)

From the above graphical representation, it can be explained that only the performance of the SAFCO is above the average but the trend is declining. The return on the investment trend of NAMA reveals a highly negative progression from 2005. SABIC, Sipchem, and TASNEE performance were very low and started to decline every year. So, the overall return on investment trend of petrochemicals industry of Saudi Arabia is decreasing year by year.

4.3.3 Disparity in Trend of Return on Equity (ROE)

There is also disparity seen in the Return on Equity (386.9124) in the petrochemicals industry of Saudi Arabia for the period 2004 to 2016 (As shown in ANOVA table). It is established that if the business organization's profitability (Gross profit Ratio) and utilization of resources (Return on investment) are satisfactory it will affect the return on equity, ultimately. The average return on equity of SAFCO (32.76%), SABIC (20.14%), TASNEE (10.29%), Sipchem (10.55%), and SIIG (13.41%) were above the industry average (10.18%) while only the NAMA's return was extremely negative (-26.08%) that disturbs the overall average return on equity of the industry (Appendix 3). Keeping in mind, it reflects that the cost of capital or cost of contractual capital of petrochemicals industry is lower than the return on total resources. So, there is a need to enhance the turnover by all the petrochemicals companies and working on equity is beneficial for all petrochemicals companies. The overall average trend of the return on equity of petrochemicals companies is declining and only SAFCO's return on equity is positive due to its sound profitability.

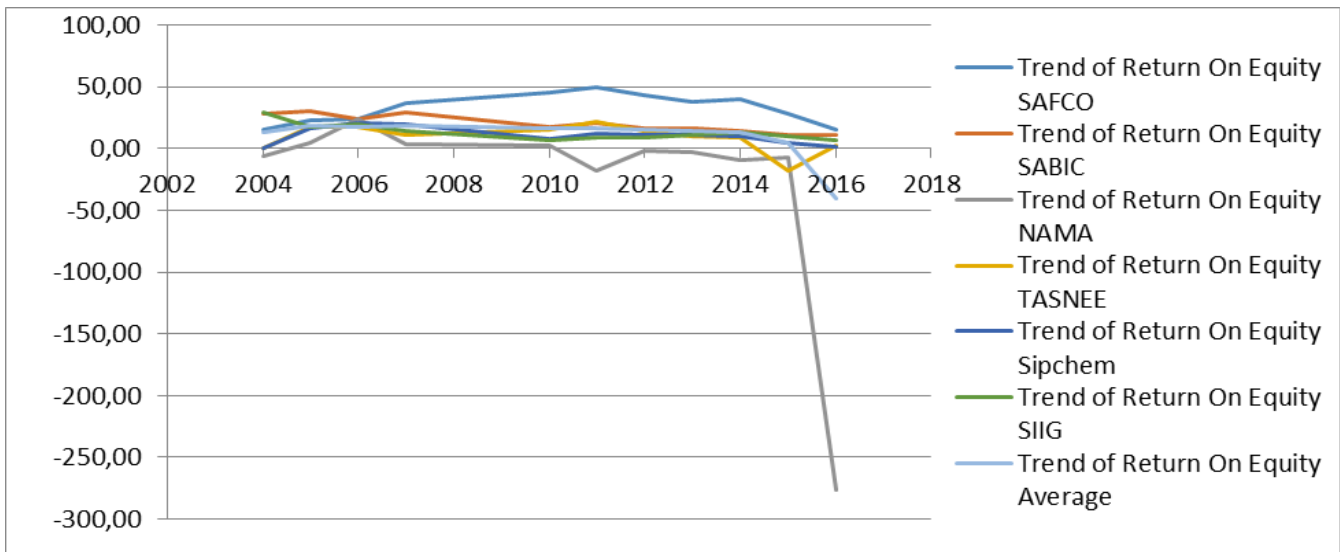


Figure 3. Trend of Return on Equity ratios of petrochemicals companies in Saudi Arabia from 2004 to 2016
 Source: The Return on Equity ratios of petrochemicals companies (2004 to 2016) used to draw the chart (Appendix 3)

From the above trend analysis, we can conclude that there is a polar difference in the SAFCO and NAMA companies for return on equities' point of view. The general trend of SABIC, TASNEE, Sipchem, and SIIG reveals a decline in the long run. Overall, the average trend of all petrochemicals companies reflects decrement in the long run.

4.3.4 Disparity in Trend of Current Ratio

There is a very low disparity (0.867142) seen in the current ratio of petrochemicals industry of Saudi Arabia for the period 2004 to 2016 (As shown in the ANOVA analysis). It is established that the current ratio measures the short time paying ability of the business organization (Ali & Haque, 2014). There should be a balanced current ratio advised for the business organizations. The standard of the Current ratio is 2 but vary for the industry to industry as per need and requirement. The current ratio of SAFCO (4.39 times), SABIC (2.78 times), and SIIG (3.31 times) are above or the near industry average (2.84 times) while the average of all companies is above the standard (2 times) except NAMA(1.83 times) (Appendix 4). So, All the companies maintain their liquidity to pay short term liabilities efficiently except NAMA. From 2013 and onwards, the average current ratio of all

companies started to decline and indicates the utilization of liquidity in business transactions but it's not below standard. So, only the paying ability of NAMA is a little bit weak but not the issue of consideration.

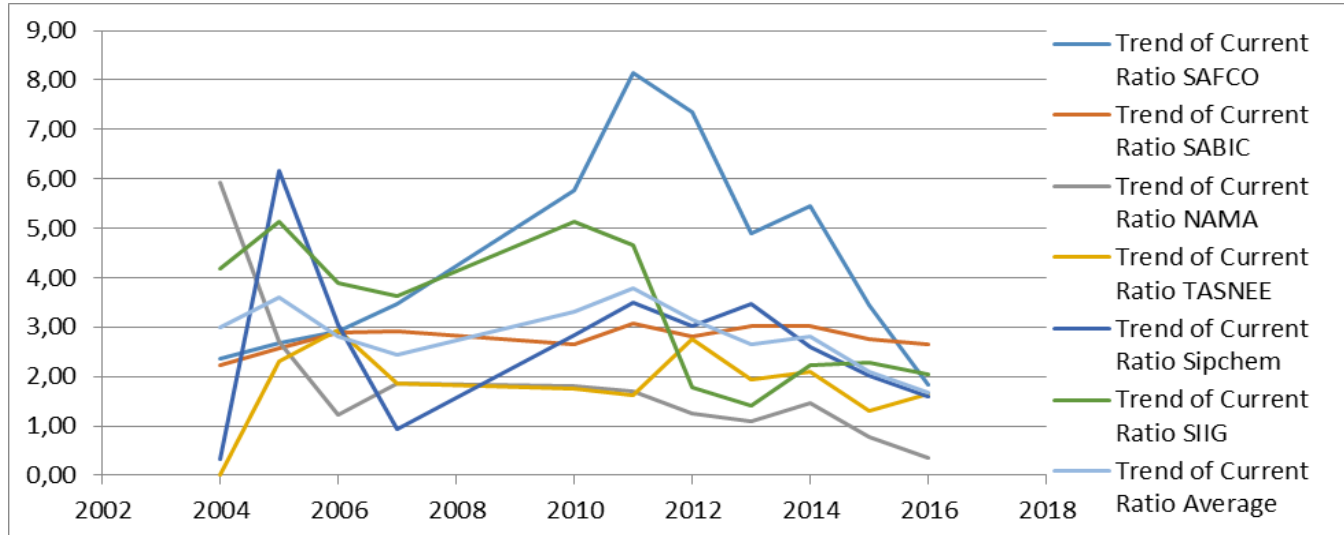


Figure 4. Trend of Current ratios of petrochemicals companies in Saudi Arabia from 2004 to 2016
 Source: The Current ratios of petrochemicals companies (2004 to 2016) used to draw the chart (Appendix 4)

From the above line chart it can be explained that, in the long run, the short term paying abilities of all companies are above the standard (2 times) excluding NAMA. It is heavily decremented in the current ratio of the SAFCO and NAMA. The average trend of all petrochemicals companies reflects a declining trend of short term paying ability (current ratio).

4.3.5 Disparity in Trend of Debt-Equity Ratio

The Debt- Equity ratio reflects the capital structure or composition of funds of a business organization. The low debt-equity ratio reflects high ownership by the shareholders and strong paying ability of the business organization in the long run and high reflects that companies are working on equity utilizing external funds with low ownership and weak long term paying ability (Ali & Haque, 2014). The standard long term paying ability ratio or Debt Equity ratio should be 0.5 or below that reflects a strong financial situation in the long run but this will vary company to company or as per need and requirement. There is low disparity seen in the Debt-Equity ratio (variance=0.164281, As shown in ANOVA table) of petrochemicals companies of Saudi Arabia. The Debt-equity ratio of SAFCO (0.22 times), and SABIC (0.69 times) are below or near to the standard while rest companies ratio is above the standard (0.5) and the average of the industry (0.92) (Appendix 5). This reflects that only SAFCO Company is strongly able to pay its long term debts while the long term paying ability of SABIC is satisfactory. Rest companies are working on equity heavily utilizing the external funds for business but long term paying abilities are not satisfactory. There is a need to issue new stocks to enhance ownership ratio and strengthen long term paying ability.

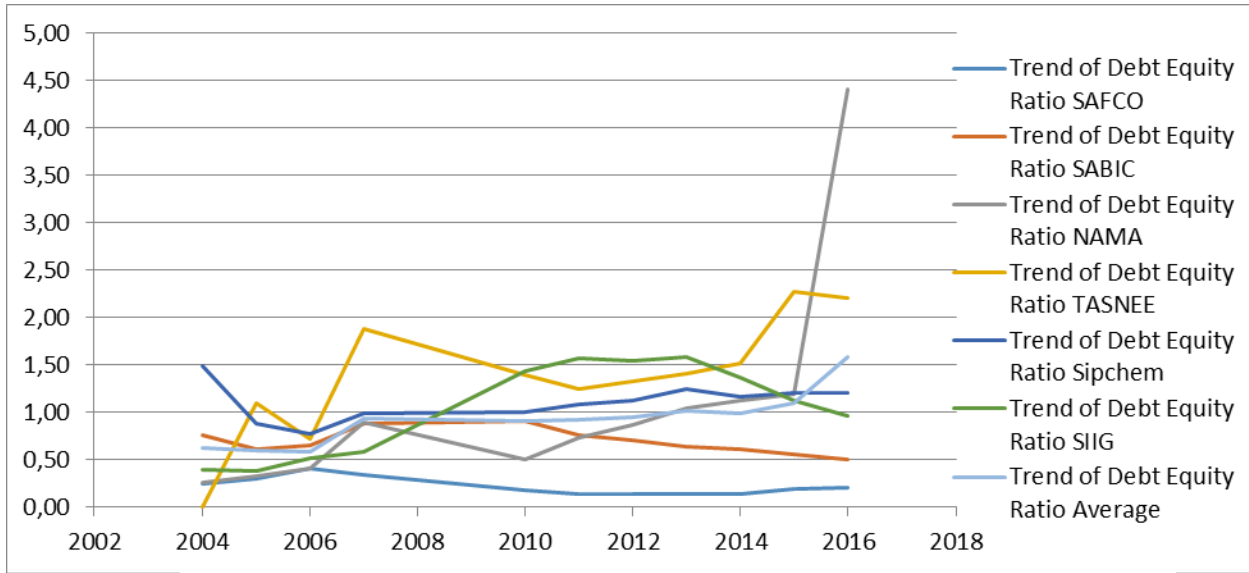
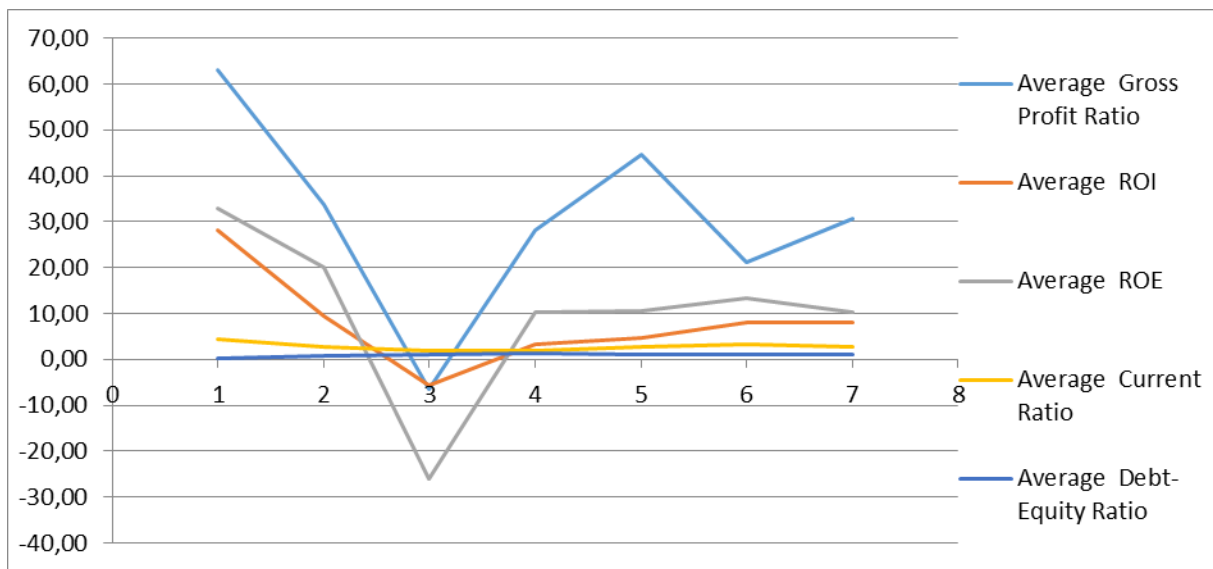


Figure 5. Trend of Debt-Equity ratios of petrochemicals companies in Saudi Arabia from 2004 to 2016
 Source: The Debt-Equity ratios of petrochemicals companies (2004 to 2016) used to draw the chart (Appendix 5)

From the above trend presentation, it can be said that there is an inclining trend of external funds in NAMA, Sipchem, and TASNEE need to control while SAFCO can utilize external funds to expand its business activities while SABIC and SIIG need to maintain it.

4.3.6 Disparity in Trend of averages of financial ratios

The averages of financial ratios reveal the financial performance of the industry and disclose the strongest and weakest part of the financial performance of the industry. The individual performances of the petrochemicals companies in Saudi Arabia are significantly different but the average of ratios will indicate the weak and satisfactory areas of the financial performance of the companies.



Source: Averages of ratios of petrochemicals companies (2004 to 2016) used to draw the chart (Appendix 6).

From the above table, it can be concluded very easily that there is fluctuating downward growth in all profitability measures. There is a similarity in the movement pattern of all profitability ratios (Gross profit ratio, ROI, and ROE) and average paying ability ratio (Current ratio, and Debt-Equity ratio). The movement trend of paying ability ratios is constant and long term, short term paying ability of the petrochemicals companies will move straight (Appendix 6).

5. Discussion

The present study reveals that the gross profitability of some petrochemicals companies in Saudi Arabia is satisfactory, average and negative. Gross profitability is the ground for holistic financial performance evaluations. SAFCO, Sipchem, and SABIC performances are satisfactory while the performance of NAMA is negative. Possibly, the operational performance of NAMA is negative due to lower turnover or low gross margin or both. The gross profitability also governs return on investment (ROI) and Return on equity (ROE). But, SABIC and SIIG companies' ROI and ROE are better than TASNEE and Sipchem companies as compared to gross profitability. The short-term paying ability of all companies is either excellent or satisfactory. The rank difference of gross profitability and current ratio, and debt-equity reveals that Sipchem is utilizing its liquidity in business activities while SIIG prefers to maintain its liquidity instead of investing or extending the business activities, while SAFCO and SABIC companies only able to pay their long-term liabilities. Overall, there are variations in the financial performances of all petrochemicals companies of Saudi Arabia as that is based upon gross profitability up to a larger extent. There are significant variations in gross profitability and other ratios (ROI & ROE) of profitability while short and long term paying ability of all petrochemicals companies is similar. The disparity in the trend of gross profitability is considerable and maximum as SAFCO's average profitability is 62.90% while NAMA's in a negative (-6.51) for the period 2004 to 2016. The trend of disparity reflects the profitability of all petrochemicals companies declining year by year excluding SABIC. The ROI and ROE of petrochemicals companies in Saudi Arabia are extremely different. There is a polar performance by SAFCO and NAMA companies for return on investment (ROI) and return on equity's (ROE) point of view, and trend reflects downfall in the long term. Notably, there is a downward fluctuating trend in return on investment in SAFCO companies which is the most profitable generating company of petrochemicals industry of Saudi Arabia, and indicates underutilization of resources and overall downfall in the petrochemicals industry. Short term paying abilities of all companies are above the standard (2 times) and satisfactory except NAMA (1.83 times). Overall, there is fluctuating downward growth of short term paying ability in all companies except SABIC and it reveals that companies started to prefer the utilization of liquid resources' in business activities. Possibly, the utilization of liquid resources in business activities to reimburse the losses of profitability by the petrochemicals companies of Saudi Arabia. Long term abilities point of view, there is a disparity in the debt-equity ratio but insignificant. Only SAFCO and SABIC companies are strongly able to pay their long term or external debts while rest companies are working on equity and trend reflect the upward growth in the utilization of external funds in the capital composition of petrochemicals companies. The companies, whose profitability is satisfactory, rely on only owners' equity while others use external funds to raise their return on investment and equity by expanding business activities.

Conclusion

The above all conclude that the profitability of petrochemicals industry of Saudi Arabia is not similar in all the companies and their growth trend is also different. As established that in any industry the gross profitability reveals the results of business activities and governs the return on investment (ROI) and return on equity (ROE), if fully utilization of resources and this applies the same in the Saudi petrochemicals industry exceptionally excluding some events. It indicates the companies; whose gross profitability is better their other measures of profitability (ROI & ROE) would be better. The profitability trends of all companies are declining for keeping maintain the gaps in profitability ratios among the companies. The short term paying ability of all companies is

satisfactory and mostly above the standard in all the companies while trend reflects the slight downfall in the long-term. In petrochemicals companies of Saudi Arabia, current ratios are also governed by the profitability of the business up to an extent. In low profitability companies, possibly, liquidity is to be used in business activities to fulfill the lack of profitability by increasing the level of activities or to enhance the absolute amount of so as to enhance the ROI and ROE in petrochemicals companies in Saudi Arabia. The long term paying abilities of petrochemicals companies of Saudi Arabia is different and only a few (SAFCO & SABIC) companies are able to pay their long terms debts easily from their own funds. Most of the companies are working on equity in order to enhance their profitability and profits. The trend reflects that SAFCO and SABIC is moving towards utilizing their own equity while other companies turning towards the external funds. Overall, there is a disparity in the financial performance of the petrochemicals companies of Saudi Arabia and the trend reflects the average downfall trend in the financial performance of the petrochemicals industry of Saudi Arabia. Gross profitability governs directly the other measures of profitability or returns, and paying ability, indirectly. The study considers only secondary data and relative study while measurement of relative studies varies according to the absolute amounts of the financial reports while the relative measurement of the companies affected by some other non-financial factors also. There is scope for further research to conduct a study which considers absolute amounts and relative measurements, both, of petrochemicals companies.

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Appendices

Appendix 1.

Years	Gross Profit Ratios and its trend of petrochemicals companies of Saudi Arabia													
	SAFCO	FBI	SABIC	FBI	NAMA	FBI	TASNEE	FBI	Sipchem	FBI	SIIG	FBI	Av.	FBI
2004	49.39	100	39.30	100	12.03	100	N.A.		71.45	100	36.38	100	41.71	100
2005	58.92	119	42.28	108	13.04	108	34.45	100	65.56	92	35.51	98	41.63	100
2006	59.54	121	40.44	103	17.47	145	37.02	107	61.60	86	40.32	111	42.73	102
2007	73.72	149	37.99	97	15.16	126	25.54	74	62.36	87	32.71	90	41.25	99
2010	70.99	144	31.94	81	17.84	148	28.38	82	43.23	61	19.72	54	35.35	85
2011	74.54	151	32.72	83	3.79	31	35.58	103	42.92	60	17.38	48	34.49	83
2012	72.45	147	28.74	73	11.95	99	31.12	90	32.32	45	-55.82	-153	20.13	48
2013	67.89	137	29.28	74	8.28	69	26.58	77	32.42	45	16.38	45	30.14	72
2014	68.95	140	27.24	69	-2.46	-20	24.68	72	33.86	47	29.26	80	30.25	73
2015	58.78	119	29.06	74	-5.43	-45	14.61	42	23.70	33	33.98	93	25.78	62
2016	36.75	74	30.80	78	-163.24	1357	22.85	66	20.50	29	26.33	72	-4.33	-10
Av.	62.90	127	33.62	86	-6.51	-54	28.08	82	44.54	62	21.10	58	30.62	74

Source: Calculated from financial data available on the website www.argaam.com, www.tadawul.com, and website of concerned petrochemicals companies.

Appendix 2.

Years	Return on Investment Ratios and its trend of petrochemicals companies of Saudi Arabia													
	SAFCO	FBI	SABIC	FBI	NAMA	FBI	TASNEE	FBI	Sipchem	FBI	SIIG	FBI	Av.	FBI
2004	13.17	100	11.74	100	-3.81	N.A.	N.A.		0.26		21.21		8.51	100
2005	18.40	140	14.54	124	3.48	100	6.08	100	7.52	100	13.29	100	10.55	124
2006	17.66	134	12.81	109	2.41	69	5.42	89	9.87	131	13.68	103	10.31	121
2007	28.29	215	11.36	97	2.12	61	2.70	44	7.92	105	9.25	70	10.27	121
2010	39.34	299	7.60	65	1.81	52	4.29	71	3.51	47	2.17	16	9.79	115
2011	44.81	340	9.57	82	-9.93	-285	6.13	101	4.99	66	2.48	19	9.68	114
2012	39.60	301	8.06	69	-0.44	-13	3.91	64	4.43	59	2.58	19	9.69	114
2013	34.60	263	8.13	69	-1.41	-40	2.54	42	4.05	54	3.22	24	8.52	100
2014	36.46	277	7.48	64	-4.07	-117	2.34	39	5.46	73	7.32	55	9.17	108
2015	24.37	185	6.36	54	-2.86	-82	-2.89	-48	2.17	29	7.24	55	5.73	67
2016	12.19	93	6.58	56	-50.51	-1451	2.38	39	1.13	15	4.37	33	-3.98	-47
Av.	28.08	213	9.47	81	-5.75	-171	3.29	54	4.66	68	7.89	49	7.94	94

Source: Calculated from financial data available on the website www.argaam.com, www.tadawul.com, and website of concerned petrochemicals companies.

Appendix 3.

Years	Return on Equity Ratios and its trend of petrochemicals companies of Saudi Arabia													
	SAFCO	FBI	SABIC	FBI	NAMA	FBI	TASNEE	FBI	Sipchem	FBI	SIIG	FBI	Av.	FBI
2004	15.54	100	27.93	100	-5.79		N.A.		0.83		28.92	100	13.48	100
2005	22.98	148	30.73	110	4.33	100	17.48	100	17.00	100	17.82	62	18.39	136
2006	24.29	156	24.29	87	24.29	561	17.92	103	20.52	121	20.15	70	17.47	130
2007	36.73	236	29.64	106	3.70	85	11.13	62	19.82	117	13.99	48	19.17	142
2010	45.34	292	17.82	64	2.12	49	15.90	143	7.68	45	7.12	25	16.00	119
2011	50.06	322	21.19	76	-17.84	-412	22.15	139	12.54	74	8.83	31	16.15	120
2012	43.65	281	16.77	60	-1.70	-39	14.62	66	10.69	63	8.87	31	15.48	115
2013	38.22	246	16.18	58	-3.19	-74	9.81	67	10.71	63	11.28	39	13.83	103
2014	40.37	260	14.47	52	-9.16	-212	9.21	94	10.16	60	13.70	47	13.12	97
2015	28.05	180	11.59	42	-6.80	-157	-17.86	194	4.96	29	10.26	35	5.03	37
2016	15.12	97	10.94	39	-276.86	-6394	2.59	-14	1.20	7	6.58	23	-40.07	-297
Av.	32.76	211	20.14	72	-26.08	-649	10.29	57	10.55	68	13.41	46	10.18	73

Source: Calculated from financial data available on the website www.argaam.com, www.tadawul.com, and website of concerned petrochemicals companies.

Appendix 4.

Years	Current Ratios and its trend of petrochemicals companies of Saudi Arabia													
	SAFCO	FBI	SABIC	FBI	NAMA	FBI	TASNEE	FBI	Sipchem	FBI	SIIG	FBI	Av.	FBI
2004	2.35	100	2.23	100	5.93	N.A.	N.A.		0.33		4.19	100	3.01	100
2005	2.68	114	2.56	115	2.72	100	2.32	100	6.16		5.14	123	3.60	119
2006	2.91	124	2.88	129	1.22	45	2.95	127	3.03	100	3.88	93	2.81	93
2007	3.47	148	2.92	131	1.85	68	1.85	80	0.92	30	3.64	87	2.44	81
2010	5.77	246	2.64	119	1.81	66	1.75	76	2.83	93	5.14	123	3.32	110
2011	8.15	347	3.07	138	1.71	63	1.62	70	3.49	115	4.65	111	3.78	126
2012	7.34	312	2.82	126	1.26	46	2.75	119	3.02	100	1.78	43	3.16	105
2013	4.90	208	3.03	136	1.09	40	1.93	83	3.47	115	1.41	34	2.64	88
2014	5.45	232	3.01	135	1.45	53	2.10	90	2.60	86	2.22	53	2.81	93
2015	3.43	146	2.75	123	0.79	29	1.31	56	2.01	66	2.28	54	2.09	70
2016	1.84	78	2.64	118	0.34	13	1.65	71	1.58	52	2.05	49	1.68	56
Av.	4.39	187	2.78	125	1.83	52	2.02	87	2.68	84	3.31	79	2.84	95

Source: Calculated form financial data available on the website www.argaam.com, www.tadawul.com, and website of concerned petrochemicals companies.

Appendix 5.

Years	Debt-Equity Ratios and its trend of petrochemicals companies of Saudi Arabia													
	SAFCO	FBI	SABIC	FBI	NAMA	FBI	TASNEE	FBI	Sipchem	FBI	SIIG	FBI	Av.	FBI
2004	0.24	100	0.77	100	0.26	100			1.49	100	0.40	100	0.63	100
2005	0.30	124	0.61	79	0.33	128	1.10	100	0.88	59	0.38	94	0.60	95
2006	0.41	170	0.66	85	0.41	158	0.72	66	0.78	52	0.52	129	0.58	92
2007	0.34	143	0.89	115	0.90	346	1.88	171	0.99	67	0.59	147	0.93	148
2010	0.17	73	0.90	117	0.50	193	1.40	127	1.00	67	1.44	359	0.90	143
2011	0.14	58	0.76	99	0.73	281	1.25	113	1.09	73	1.57	392	0.92	146
2012	0.13	55	0.71	92	0.87	335	1.33	121	1.13	76	1.55	387	0.95	151
2013	0.14	60	0.64	83	1.04	400	1.41	129	1.25	84	1.58	396	1.01	161
2014	0.14	56	0.62	80	1.12	432	1.52	139	1.16	78	1.36	341	0.99	157
2015	0.19	78	0.56	73	1.20	460	2.27	206	1.21	81	1.12	281	1.09	173
2016	0.20	83	0.51	66	4.41	1696	2.21	201	1.20	81	0.97	242	1.58	251
Av.	0.22	109	0.69	90	1.07	412	1.51	137	1.11	74	1.04	261	0.92	147

Source: Calculated form financial data available on the website www.argaam.com, www.tadawul.com and website of concerned petrochemicals companies.

Appendix 6.

Petrochemical Companies	Averages of Ratios of petrochemicals companies of Saudi Arabia(2004 to 2016)					
	Gross Profit	ROI	ROE	Current Ratio	Debt-Equity Ratio	
SAFCO	62.90	28.08	32.76	4.39	0.22	
SABIC	33.62	9.47	20.14	2.78	0.69	
NAMA	-6.51	-5.75	-26.08	1.83	1.07	
TASNEE	28.08	3.29	10.29	2.02	1.37	
Sipchem	44.54	4.66	10.55	2.68	1.11	
SIIG	21.10	7.89	13.41	3.31	1.04	
Av.	30.62	7.94	10.18	2.84	0.92	

Source: Calculated form financial data available on the website www.argaam.com, www.tadawul.com, and website of concerned petrochemicals companies.

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