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Literature Review Introduction: Owing to the huge dependence of the whole world on oil in the contemporary age, importance of the petrochemical industry is undeniable. Petrochemical companies have been making a lot of revenue over the decades. However, the recent economic recession that has blanketed the whole world has caused a serious setback to the profitability of industry, and the stakeholders have borne huge financial losses.

Nonetheless, the industry maintains its function because of the huge demand. This paper tends to analyze and evaluate the petrochemical companies with the help of Porter's five forces model, the valuation model and the financial ratio analysis tool. The analysis will generate useful information for stakeholders interested in buying or selling shares of the petrochemical companies.

USA Petrochemical Industry Despite of the rise in the global demand for the petrochemical products, the USA petrochemical industry is facing increasing competition in the petrochemical export market. With supply of the natural gas by using the comprehensive pipe line system to both receive the raw materials as well as to deliver the finished products. So, it is expected that the US petrochemical industry would revive sooner than the other competitors. Furthermore, economic trade group such as NAFTA would contribute further to its growth.

Political & Legal Factors The petrochemical industry in USA is governed by several laws and regulations. The hazardous materials transportation act and the pollution prevention act are significant among these. According to the first act, the Department of Transportation gets the authority to control the transportation of such materials including the petrochemicals. Furthermore, the USA government has become increasingly active and concerned about the safety and environmental areas for this petrochemical transportation. Adding to it, the <https://assignbuster.com/an-introduction-and-conclusion-for-literature-review-in-finance-preparing-for-my-dissertation/>

state governments are also taking interests in the issues affecting the petrochemical industry such as the specific charges and taxes, reduction of toxic use and hazardous waste as well as state right-to-know statutes (U. S Department of Commerce, 1994, p. 11-5). Economic Factors The recent recession has emerged as devastating for the leading economies across the globe including USA. The rise in the oil has also contributed to the rise of the Petrochemical product prices. As a consequence, the petrochemical organisations have been experiencing low production and profitability margins (Ismaiyatim, 2010). Furthermore, with the rise in the price of the petrochemical products, the demand for the same has experienced a decline leading to further shrinkage of the profit margins. Social Factors With the enhancement in the life styles of the habitants in USA, the usage of the automobiles has also been increased leading to the increase in the demand side. Technological Factors With the technological advancements, there have been changes in the mining of the petrochemical products. So, all these technological developments have been influential to decide on the mining and refining of the petrochemical products. Environmental Factors Environment is a significant influential factor to control the petrochemical industry. Federal government has come up with an act, The Pollution Prevention Act, to control the adverse effect of the petrochemical organisations. This act is a policy to eliminate or reduce the waste generation at a source, if that is feasible at that time. It directs its government to commence an appropriate program to collect the information, transfer the technology well as offering financial assistance to the states to execute this policy. In this way the federal government motivates the states to promote the waste reduction techniques at the source. Furthermore, even <https://assignbuster.com/an-introduction-and-conclusion-for-literature-review-in-finance-preparing-for-my-dissertation/>

the state governments have become increasingly active to address the environmental and safety issues related to the petrochemical industry.

European Petrochemical Industry European Petrochemical industry is one of the leading petrochemical sectors across the globe. A number of oil companies in there has dealt into the processing of raw materials using own oil refineries into some fundamental petrochemical products and even to the downstream products. The petrochemical industry in Europe is experiencing forward integration in this industry. A number of oil companies carry out petrochemical activities in several locations in Europe. Among the significant petrochemical companies, companies like DOW, ICI, DSM and BASF in Western Europe deal with the ethylene production in Europe. “ After a series of reorganisations in the 1980s and 1990s, the changes in the European chemical industry have indeed continued: DSM’s petrochemical operations were acquired by SABIC...” (Camp, 2005, p. 15). A PESTLE analysis has been carried out to understand different factors shaping the petrochemical industry in Europe.

Political and Legal Factors Although the petrochemical industry is seemed to be an independent but large business in any country, still a considerable amount of government control is in there regarding the safety of transportation, reserving the products and the environmental effects of the production of the same.

Economic Factors European economy has been one of the significant economies which are hit badly by the recent recession. With the fluctuations in the oil prices, the petrochemical companies in Europe have experienced enough fluctuations in their production capacity and profitability margin.

Social Factors The European society has enhanced its lifestyle with the advancement in the income level.

With the same, there has been a considerable rise in the number of
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automobiles leading to an increase in the demand of the petrochemical products. Technological Factors Europe is one of the significant continents which are enriched with improved technological advancements. The improved and enhanced refining and mining technologies have increased the production and would increase the utilization of the entire capacity.

Environmental Factors In the wake of recent environmental concerns, the operation process of the petrochemical products is required to be in line with the related rules and regulations of Europe. Furthermore, the government has also expressed its concern on the waste management of the petrochemical products. The companies must reduce the waste at the production unit to increase the efficiency and reduce the adverse effects on the economy. The petrochemical industry in US originated due to the availability of the raw material sources as the natural gas and petroleum. However, the fast development in the petrochemical industry in United States can majorly be attributed to the accessibility to the considerable amount of refinery by-products fetched from the oil distillation to fabricate naphtha. United States has been in an advantageous position and has maintained the same during the last thirty years despite of rapid growth in the European industry. Despite of several countries emerging as prominent players in the petrochemical industry, United States still keeps its leading position in the worldwide petrochemical industry (Wengel, 1980, p. 58). Asia-Pacific Petrochemical Industry Asia, specifically India and China has emerged as the growth engine for the entire world economy. The rapid growth in the Asian economies, China and India in particular, has driven basic commodities markets like steel, cement and energy all throughout the global recession.

(Asian Development Bank, n. d.). Following is the PESTLE analysis for the <https://assignbuster.com/an-introduction-and-conclusion-for-literature-review-in-finance-preparing-for-my-dissertation/>

Asian petrochemical industry. Political & Legal One of the most critical factors for the Asian markets is the political and legal factor. While it is difficult to draw a blanket conclusion on the political and legal stability for all Asian countries, it can be safely said that there is considerable volatility in the political scenario of Asian countries. Economic The Asian market is one of the potentially most attractive markets for all petrochemical companies. Almost all Asian countries, including ASEAN members, and Indian and China are experiencing extremely growth rates. These booming economies are increasingly consuming higher volume of industrial raw materials, capital goods and petrochemical products. Social: Apart from developed economies like Taiwan, South Korea and Japan, the standard of living of citizens of most of the Asian countries are way below that of developed economies. However, with booming economies and higher disposable incomes, Asians are increasingly consuming more resources, including petrochemicals. Technological: Apart from Japan and Australia, Asian countries have generally been laggards as far as technological innovation is concerned; more so in petrochemical sector where the cost of research and development is enormous. Given that Asian petrochemical companies are much smaller in size as compared to global leaders in petrochemical sector, their R&D spending is proportionately smaller. Environmental: Traditionally, Asian countries had much easier environmental regulations as compared to developed economies like USA, Europe or Australia. As such, it has been easier for petrochemical companies to operate in the Asian market. However, Asian countries have increasingly tightened environmental regulations and the present legal structure in Asian countries is almost at par with other developed economies. Porter's Five Forces Porters five forces <https://assignbuster.com/an-introduction-and-conclusion-for-literature-review-in-finance-preparing-for-my-dissertation/>

model is one of the best known industry analysis frameworks and is frequently used to analyze the attractiveness of a market. Following is the competitive analysis of the petrochemical industry using the above mentioned model.

Threat of entry of new competitors: This industry is extremely capital and technology intensive, and hence there is little probability of a new competitor entering this domain.

Threat of substitute products: The petrochemical industry is highly technology intensive and the rapid growth in technological innovation offers high degree of risk of better substitute products.

Bargaining power of customers: Petrochemical companies primarily cater to institutional clients who tend to have medium to high bargaining powers.

Bargaining power of suppliers: One of the most important raw materials for petrochemicals is petroleum or feedstock. Most of the petroleum producing companies are either government owned companies or are gigantic multinational companies, and hence have high degree of bargaining powers.

Intensity of competition rivalry: Petrochemical manufacturing companies are big multinational companies with huge financial bases. This makes the industry fiercely competitive and hence has high degree of competition rivalry.

SWOT Analysis of BASF

Strengths

Market leadership in its key markets as well as worldwide

Advanced R&D – BASF is a world leader in R&D in chemical sciences and this will ensure it is at the forefront of innovations

Diversified business line – BASF derives its revenues from 6 of its business lines, thereby making it less dependent on any one business line.

Weaknesses

Slow growth in the core markets: Europe and North American markets, the core markets for BASF, grew by only 1.7% and 2.9% respectively.

Opportunities

Fast growing Asian and South American markets – These markets grew in excess of 9% and 7% respectively and

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hence offer immense growth possibilities for BASF. New innovations through increased spend in R&D: BASF's long and successful record of innovation and new product development will let it leverage the booming Asian, African and Latin American economies. Threats Volatile exchange rates: Just like any diversified conglomerate that sources raw material and sells finished products in multiple countries in multiple currencies, exchange rate vitality offers significant threats to its profitability. Availability and volatility of raw materials: Increased political instability has led to extreme volatility in petroleum prices – its primary source of raw material (BASF, 2011). DOW Strengths: Market leadership in its key market – USA is the key growth driver for Dow Chemicals, and the company enjoys market leadership in the North American market. Financial reserves: Dow is world's third largest chemical company in terms of sales, and has an EBIDTA of massive \$1. 9 million for the FY 2010. The high capital reserves gives the company High degree of focus on R&D: Dow is extremely focused on R&D and innovation, and that makes it well equipped to face future threats. Weaknesses: Sluggish growth rates of its key markets: Matured economies, which are Dow Chemical's traditional markets, are experiencing sluggish growth rates. Declining profits/margins: Margins are under pressure for the petrochemical industry with growing raw material costs and stagnating finished goods prices. Opportunities: Emerging economies: With the BRIC countries growing at excess of 7%, there lays a huge market potential for Dow Chemicals. Threats: Political instability: Dow is highly susceptible to political instability for a sales as well as raw materials. Exchange rate volatility: Just like other companies in the petrochemicals domain, Dow Chemicals too is highly susceptible to exchange rate fluctuations (Dow, 2011). Dupont Strengths: <https://assignbuster.com/an-introduction-and-conclusion-for-literature-review-in-finance-preparing-for-my-dissertation/>

Global operations: The American chemical company is a truly global company with sales and manufacturing bases in all the continents. This will make Dupont less dependent on any one country/market. **Strong brand name:** Dupont is credited with creating a number of brand names which became resounding success stories. **Strong orientation towards R&D**

Weaknesses Dupont has a high degree of dependence on the US market, thereby making it vulnerable to sluggish growth of the US economy.

Opportunities Booming Asian and Latin American markets and little competition from these native countries offer a lucrative opportunity for Dupont. Dupont's consistent focus on R&D can help it create unique and greened products which promise to be future growth drivers. **Threats** Increased consumer preference of green products may make it difficult for tradition chemical based companies like Dupont. (Dupont, 2010). **Exchange rate volatility:** Exchange rate volatility is one of the most important threats that Dupont faces. **Volatility of raw material:** Crude petroleum is one of the most important raw material, and given the inherently instable political scenario in the Middle East, both availability and price of crude petroleum poses sufficient threats to petrochemical companies like Dupont. **SABIC**

Strengths: Easy availability of raw materials: SABIC being gulf based company it has steady access to cheap raw material, that is, crude petroleum and it's by products. **Geographical proximity to Asia:** Due to its geographic proximity to Asia and Middle East markets, SABIC enjoys easy and cheaper access to these booming markets. **Weakness** Weaker R&D profile: SABIC is smaller than its global competitors and hence, has considerably lower R&D budget and capabilities. SABIC is primarily based in

Saudi Arabia, a country that lags behind in terms of scientific innovation and <https://assignbuster.com/an-introduction-and-conclusion-for-literature-review-in-finance-preparing-for-my-dissertation/>

expertise. As such, it is difficult for SABIC to attract best of the technological talent. Opportunities SABIC is geographically closer to the African, Asian and the East European markets. These markets have one of the highest growth rates in economy, and hence offers excellent opportunities for SABIC.

Threats Product substitutes: Consumers increasingly prefer green products and that offers significant threat to SABIC. Technological obsolescence:

SABIC faces significant threats in terms of technological obsolescence as petrochemical products are highly technology intensive. Valuation Models

There is a myth that the valuation models offer true value for the organisation. This does not hold true as all valuation techniques are biased; however, the intensity and directions vary in each of the cases (Damodaran, n. d., p. 2). However, it cannot be denied that the valuation is important to get an approximate fair value of an organisation or a stock. There are several valuation models which can be used to determine the value of the firms; few of them have been articulated in this segment. Dividend Discount Model The dividend discount model offers a mean to develop an unambiguous expected return of any corporate stock. Elaboration of this technique would enable comparison of relative values across a portfolio of individual stocks (Farrell, 1985, p. 16). According to this technique, there are two significant fundamental inputs to this model: the cost of equity and the expected dividends. There is an extension to this model which is known as The Gordon growth model.
$$\text{Value of Stock} = \frac{\text{DPS}_1}{K_e - g}$$
 Where, DPS_1 = Forecasted dividend in the next one year. K_e = required return rate G = rate of growth in the dividend amount (NewYork University, n. d., p. 2). Market

Multiples Model In this case, the valuations are measured by forecasting the earnings, cash flows and the sales amount. This also considers the historical <https://assignbuster.com/an-introduction-and-conclusion-for-literature-review-in-finance-preparing-for-my-dissertation/>

price per share to forecast further. The market value of the firm is reached through a comparison of the company's historical values to the industry average values (Ignatius & Reitz, n. d.). There are several advantages of this method. This is a simple and shortcut method of firm valuation. Furthermore, the valuation is done by comparing the company ratio values with the industry averages (Texas A&M University, n. d.).

Free Cash flow Model This technique considers the application of the capital budgeting techniques to the firm itself than one single investment. This valuation model considers a discount rate, i. e. the cost of capital and applies the same to forecasted cash flows. The discount rates used in this case must consider the riskiness of the operation of any firm (Delaney & Whittington, 2009, p. 1137).

Ratio Analysis Financial ratio analysis is a significant tool to analyze the current state of any firm. The key financial ratios of any company can be divided into four key segments, solvency ratios, liquidity ratios, profitability and efficiency ratios. These ratios are important to understand the capital structure, dividend policy, liquidity position and efficiency of the management. As there is no specific benchmark value of the ratio analysis, the ratio analysis would be of significance only if the ratios are compared a considerable amount of time and compared against the industry average (Brigham & Ehrhardt, 2010, p. 108-109).

Conclusion: Because of a well developed supply line system, petrochemical industry in US is far more productive than it is in other countries. The decline in demand brought about by economic factors is balanced by a rise in demand caused by social factors. Government is making use of technology to control the negative impacts of petrochemical industries on the environment. Petrochemical industry in Europe has flourished over the years. Some of the popular

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petrochemical companies in Europe are DOW, ICI, DSM and BASF.

Government maintains strong control over it in order to make the operations safer and environment friendlier. Recent economic recession has hit the European petrochemical industry hard whereas increased quality of life of the Europeans has called for an increase in demand. Technological use has increased the production. Despite the upsets in Asian political scenario, Asian economies are strengthening thus making Asia a good market for petrochemical companies. Asian countries lack technology. The living standard has not been as high as in US or Europe. However, petrochemical companies have made profits in Asian market in the past because of simple and compromising governmental rules regarding the environment. This paper has made Porter's Five Forces analysis of the petrochemical industry along with the SWOT analysis of petrochemical companies in Europe. The industry has also been evaluated on the scale of valuation models and the financial ratio analysis. References Asian Development Bank. (No Date). ADB Economics Working Paper Series. [Pdf]. Available at: <http://www.adb.org/documents/working-papers/2010/economics-wp220.pdf> [Accessed on May 02, 2011]. BASF. (2011). Economic environment in 2011. [Online]. Available at: <http://www.report.basf.com/2010/en/managementsanalysis/forecast/economicenvironment.html?cat=b> [Accessed on May 02, 2011]. Brigham, F. E. & Ehrhardt, C. M. (2010). Financial Management: Theory and Practice. Cengage Learning. Camp, V. C. (2005). The future of the petrochemical industry in Europe. [Pdf]. Available at: <http://scienzechimiche.unipr.it/didattica/att/774f.8941.file.pdf> [Accessed on May 02, 2011]. Damodaran, A. (No Date). Valuation Models. [Pdf]. Available at: www.business.uconn.edu/users/smf/valuation_models. <https://assignbuster.com/an-introduction-and-conclusion-for-literature-review-in-finance-preparing-for-my-dissertation/>

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