INDUSTRY RISK ANALYSIS

Chemical

April, 2022

Assessment of industry risk is an essential part of credit rating process. The industry risk assessment sets the ceiling for ratings of individual entities within a given industry. It focuses on the degree of cyclicality and the strength of competitive forces along with the extent of capital intensity, vulnerability to technological change, level of regulatory interference and energy sensitivity. All these factors are assessed on a scale ranging from High to Low to assign an overall risk level to each industry. Industry risk categorization for different industries is available on our website under Sector Updates "Industry Risk Analysis" (https://docs.vis.com.pk/docs/Industryrisk062021.pdf).

This document explains VIS approach to assess industry risk of Chemical industry of Pakistan.

Chemical Industry in Pakistan

Chemical industry is one of the oldest industries in Pakistan, however, it merely constitutes 1.72% of weight in Large Scale Manufacturing (LSM). Pakistan meets only 10% of chemical needs through local production. There is a huge potential of growth in this sector to improve external trade statistics given agriculture and other chemicals group imports amounted to USD 9.30b in FY21 (FY20: USD 7.35b) with a share of around 16.49% in total import bill. There is a synergy between the petrochemical projects envisioned and the growth of the existing chemical industry. One of the main reason for such a high volume of imports is mainly due to the lack of a Naphtha Cracker facility, from which most of the chemicals downstream. Establishment of Naphtha Cracker plant requires enormous investment of around $4 billion. However, despite the lack of this basic requisite, the sector is contributing around USD 1.15b in the country's exports.

OVERALL INDUSTRY RISK

High
High to Medium
Medium
Medium to Low
Low

Major Sub-Sectors in the Chemical Industry

VIS has identified seven sub-sectors in Pakistan chemical industry, apart from Pharmaceutical Chemicals. These include Paint & Coating Manufacturing, Industrial Gas Manufacturing, Alkalies & Chlorine Manufacturing, Gum and Wood Chemical Manufacturing, all other Basic Organic Chemical Manufacturing, Explosive Manufacturing and other Miscellaneous. Chemicals are divided in two main categories from the value addition point of view. Those produced in large and bulk quantities but with lower value addition are called commodity chemicals. Specialty chemicals are those produced in smaller quantities with higher value addition, i.e. dyes and pigments, pharmaceutical chemicals and enzymes, etc. Chemical industry of Pakistan is dominated with Chlor Alkai, industrial gases, oleo chemicals, surfactants, PVC, paints & coatings.

Cyclicality Risk

Cyclicality risk for chemical sector of Pakistan is categorized as 'medium'. Demand in the chemical sector of Pakistan is closely linked with performance of multiple industries ranging from plastics, paints, paper, leather and textiles, wherein the respective chemicals form an integral part of their input cost. Also since a large part of the chemical consumption is imported, the industry remains exposed to changes in international prices and exchange risk. However, cyclicality risk may differ across industries depending on their correlation with that industry and overall economy. Empirical data over time also reflects varying degree of correlation to growth. Some sub-sectors have shown growth during downturns while others witnessed decline such as like Chlor alkali. Similarly, paint and coating manufacturing which is closely correlated with construction and housing sector also depicted higher cyclicality during periods of economic slowdown. Therefore, overall sector cyclicality is assigned medium risk.

Competitive Risk

Barriers to Entry Risk

An assessment of barriers to entry, substitution risk and risk in growth trends in the industry reflects the competitiveness of the industry. For the chemical industry, competitiveness varies depending upon the markets they serve. Chemical industry remains fragmented with sub- sectors such as paints depicting higher fragmentation than others. Paint sector is categorized with presence of large number of unorganized players (22 organized players and 350 un-organized players; market share of organized and unorganized is 64%:34%) reflecting low entry barriers and higher competition. On the contrary, Chlor- alkali sector is oligopolistic in nature with only three players operating in the county coupled with oversupply situation warrants high barriers to entry and low competition risk.

Risk of Substitution

Substitution risk in the chemical sector may differ across industries that they feed into. While some chemicals like soda ash and caustic soda may be relatively substitutable, there are others, largely specialty chemicals, for which a substitute may not be available. Generally, commodity chemicals are used as primary raw materials for various products like caustic soda for textile, soaps, detergents, paper & board, oil & gas processing etc.; hydrogen peroxide in textile, cosmetics etc.; sulphuric acid in fertilizers and therefore substitution risk is considered low for the overall chemical sector.

Growth Trends

Chemical sector has exhibited a growth rate of around 19.19% in July'20-June'21 vis-à-vis 4.89% in the preceding comparative period. Growth trends in the chemical sector vary across different sub-sectors; some of which are highly dependent on growth of specific sector or combination of sectors. With strong growth prospects in the construction and infrastructure development sector and soda ash being an essential raw material for glass industry, the risk in growth trends remains low. Similarly, in line the paint and coating industry of Pakistan is expected to grow from Rs. 50b (industry estimates and revenues of listed paint companies for FY19) to reach Rs. 65b by 2025. Caustic soda is also used in multiple industries such as textiles and soap manufacturing, both of which are expected to exhibit strong demand. Overall, the chemical sector is assessed to have low risk in growth trends.

Based on medium to low risk of electiveness of barriers to entry along with low substitution and growth trend risk, 'competitive risk' of the industry is assessed as low.

Capitalization Levels and Technology Risk

Capital intensity risk is considered to be ranging from high to medium. Given highly power intensive sector major players have to establish their own captive power plants. Return of capital is medium term (3 to 7 years) as margins are relatively higher. Chemical sector is characterized with lower rate of innovation and product obsolescence. Therefore technology risk is considered to be relatively low. However, increasing environmental concerns may require production plants to be replaced with more energy efficient ones in the long run.

Regulatory Practices

Although the sector is moderately regulated, prices of final products are unregulated so the players can set prices based on market forces of demand and supply. To boost local industry GoP has imposed anti-dumping duties on import of certain chemicals. On the other hand, the government has levied duties on imported raw materials for paint and coating industry ranging from 3% to 20%; varnishes, resins and driers have 20% import duties. Inflationary pressure and rupee devaluation poses a great threat being heavily reliant on imports. Overall chemical industry in Pakistan faces moderate set of regulations providing competitive environment.

Energy Consumption

The chemical sector is one of the largest energy consumers. This is largely because a large part of chemical subsector's energy input is consumed as feedstock i.e. fuel used as raw material input rather than as a source of energy. While energy risk is higher for chemical sector, in Pakistan relative to other industries, where manufacturing base in the chemical sector remains small and the industry remains primarily import reliant, we have assigned energy sensitivity risk as Medium to Low.

On overall basis, based on the factors discussed above, industry risk of Chemical sector is assigned as Medium to Low

Table 1: Summary of Industry Risk Factors

CHEMICAL									
Cyclicality	Competition				Capital Intensity	Technology Risk	Regulatory Framework	Energy Sensitivity	OVERALL RISK
	Risk of Effectiveness of barrier to entry	Risk of Substitutes	Risk in Growth Trends	Overall					
Medium	Medium to Low	Low	Low	Low	High to Medium	Low	Medium to Low	Medium	**Medium to Low**

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