# GAINING INSIGHTS INTO REBAR STEEL MARKET FORCES: CASE STUDY OF EZZ REBAR STEEL INDUSTRY

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# GAINING INSIGHTS INTO REBAR STEEL MARKET FORCES : CASE STUDY OF EZZ REBAR STEEL INDUSTRY

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***Abstract***

*This case study provides guidance for market forces in one of the essential industries in Egypt. The study analyzes the market forces affecting the flat steel industry from 2019 to 2022, including the supply, demand, and elasticity of flat steel produced by Al-Ezz Dekheila Steel Company, one of the largest producers of flat steel in the Middle East. The paper also provides insight into future business opportunities in the industry. The steel industry is a crucial sector in the Egyptian economy, contributing significantly to industrialization and providing numerous employment opportunities. This paper provides an overview of the steel industry in Egypt, from its inception to its current status, including key players and milestones. The focus is on gaining insights into the economics of Rebar Steel (Long Steel), with specific emphasis on Ezz Steel, one of the largest steel producers in Egypt. The paper highlights the importance of the steel industry and its value-added supply chain through various operation cycles and show the spiral increase in the price of the product for the near future.*

***Keywords:*** *steel industry, market forces, flat steel, business opportunities, value-added supply chain*

***JEL Codes:*** *L61, L72, O14*

## 1. Introduction

The steel industry, wireless carriers, and oil companies are examples of industries strongly related to oligopoly. However, oligopoly can be problematic as it can prevent new competitors from entering the market, slow down development and innovation, and increase prices for consumers. Oligopolistic firms may sometimes behave as if they were in a monopoly by colluding to increase prices and divide profits among themselves, which is known as a collision or a cartel.

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The article highlights that the analysis of an oligopoly in terms of interdependence and competitiveness between its companies is the most valuable, and firms must devise appropriate business strategies and respond appropriately to competing firms' strategies. The article concludes by discussing market failure, which happens when market distortions create a state of unbalance, leading to an inefficient distribution of goods and services (Salman, Kamal & El Basyoni, 2021). The analysis of an oligopoly in terms of interdependence and competitiveness between its companies is most valuable. Since this type of market is effectively controlled by a few large firms, companies must develop appropriate business strategies and respond appropriately to competing firms' business strategies.

Al-Ezz Dekheila Steel Company (EZDK) is the largest steel manufacturing facility in Egypt, located in Dekheila, west of Alexandria, Egypt's second-largest city, and main port. The company was established in 1982 and started production in 1986, formerly known as the Alexandria National Iron and Steel Company (ANSDK). ANSDK was established through a partnership between Egyptian public sector companies, global development agencies, and Japanese corporate enterprises. In 2006, ANSDK was renamed EZDK following an acquisition process by Ezz Steel Company, which took place in four phases from 1999 to 2010. EZDK produces two main products: Steel rebars and flat steel. This research will focus on analyzing the supply and demand of flat steel produced by EZDK. Flat steel from Ezz Steel is used in various industrial, commercial, and domestic applications. Ezz Steel Group started its journey on the Egyptian market in 1959 as an importing company for rebars steel. It soon expanded its portfolio of operations and ventured into the production of steel, realizing the great growth potential that the Egyptian market had in the 1990s. Today, in 2023, with over 8,000 employees and over 4 billion USD worth of investments, Ezz Steel is the biggest steel manufacturer in Egypt and Africa. Ezz Steel owns 64% of Ezz ElDekhela Steel Company among its portfolio and recently acquired 18% of the Egyptian Steel company.

Ezz Steel is committed to achieving its robust vision of remaining the leading independent fully integrated steel producer in the region, admired worldwide for its principles, people, partnerships, performance, and passion for excellence. This paper will review the market structure and volume of the steel industry in Egypt, focusing on gaining insights into the economics of Rebar Steel (Long Steel) with specific emphasis on Ezz Steel, one of the largest steel producers in Egypt. The paper will also analyze the market driving force and elasticity, followed by a conclusion.

## 2. Market overview

Market types vary in their characteristics and properties, with each market determining its pricing strategies and market approach. One such market structure is the oligopoly, which consists of a limited number of firms that exert moderate influence on each other. The concentration ratio measures the market proportion of the largest 55 firms. An oligopoly must consist of at least three firms to qualify as such. There is no upper limit, but the number must be low enough for one firm's actions to have a significant influence on the others, depending on the industry or country (Salman, 2017).

Market failure occurs when the distribution of goods and services in a free market is inefficient. It occurs when the supplied amount of goods or services does not equate to the required amount of goods or services. Many factors can contribute to market failure, including monopoly power, price controls, minimum wage requirements, and government regulations.

Seven different reasons cause market failure, including the incapability of private markets in producing public goods, externalities, monopoly or oligopoly, insufficient information, incomplete markets, absence of complementary markets, and macroeconomic uncertainty. Macro-economic strategies aim to boost economic growth during recessionary times and minimize this development during boom cycles.

Some business strategies commonly employed in oligopolistic markets and how they can influence the dynamics of the industry, such as :

- Pricing Strategies: Pricing decisions play a crucial role in oligopolies. Companies may adopt various pricing strategies, such as price leadership, where one dominant firm sets the price and others follow suit, or price collusion, where competing firms agree to set prices collectively to maximize profits. These strategies can impact market prices, consumer demand, and market share distribution among the firms.

- Product Differentiation: Companies in an oligopoly may focus on differentiating their products or services to gain a competitive edge. They can invest in research and development to introduce innovative features, quality improvements, or unique branding. Product differentiation allows firms to capture customer loyalty and create barriers to entry for potential competitors.

- Strategic Alliances and Mergers: Oligopolistic firms often form strategic alliances or engage in mergers and acquisitions to strengthen their market position. Collaborations can lead to economies of scale, synergies, and increased market power. By joining forces, companies can consolidate resources, expand their product offerings, and gain a competitive advantage over rivals.

- Research and Development: Investment in research and development (R&D) is crucial for firms in oligopolies to stay competitive and drive innovation. R&D efforts can lead to the development of new technologies, processes, or products, giving companies a strategic advantage in the market. It allows firms to adapt to changing consumer preferences and market conditions.

- Cost Efficiency and Operational Excellence: Oligopolistic firms strive to achieve cost efficiency and operational excellence to maintain profitability and competitive advantage. They may implement lean production techniques, optimize supply chain management, or invest in automation and technology to reduce costs, improve productivity, and enhance overall efficiency.

- Response to Competitors: Oligopolistic firms closely monitor the strategies and actions of their competitors and respond accordingly. A firm may match or counter a competitor's price changes, product innovations, or marketing campaigns to protect its market share. Quick and strategic responses to competitors' moves are crucial for survival and success in an oligopoly.

### 3. Steel Industry in Egypt: A Historical overview

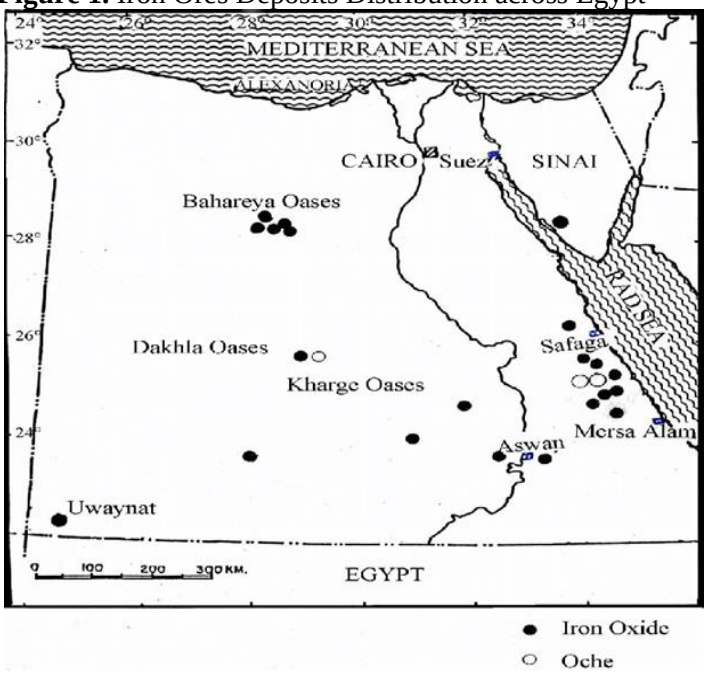
Egypt has started to think about having a national steel industry in the late 1940s especially after the World War 2 has ended leaving tons of scrapes thrown around in the desert. This started with establishing the first steel company called “Delta Steel” in 1947 that relayed mainly on the WW2 scrapes as a source for production (https://ar.mih.eg).

The industry started to evolve to serve the growing market needs for more steel to help the industrialization of Egypt and its new direct back then to expand its real estate footprint, navel engineering, marine ports building, Car manufacturing industry as well as the expansion of its roads and railroads networks. In the 1950s the “Egyptian Iron & Steel Company” in Helwan mega complex was built to capitalize on the Egyptian Iron ores that were discovered in Aswan instead of only using the war scrapes (MIH, 2021). Starting the 1980s, private investments started to venture the Egyptian market to take part of the growing local market.

There are 3 main areas for Iron ore extraction in Egypt with over 15 mines (NRIAG, 2019). The iron ore reserves in Egypt are located in several regions, each with different characteristics and levels of extraction. Aswan, for instance, has low iron content of around 30% and high levels of impurities, making it uneconomical for commercial use despite being the initial source of iron ore used by the Egyptian Iron & Steel company in the 1950s. In

contrast, the Bahreya Oasis has the highest iron reserve discovered in Egypt to date, with an iron content of around 50%, making it the primary source of commercial iron ore extraction, particularly for the Egyptian Iron & Steel company before its liquidation in 2022. Lastly, the Eastern Desert, located near EL Qoser close to the Red Sea area, has moderate reserves and is mainly used in the production of Cast Iron. Each region's unique characteristics and extraction costs determine their feasibility for commercial use in the iron and steel industry. The distribution of the Iron Mines across Egypt can be seen in the following figure as illustrated by Dr. Abdul Zaher AbouZeid (2011).

**Figure 1.** Iron Ores Deposits Distribution across Egypt




**Source:** Abouzeid, A. Z. M., & El Wgeeh, M. A. (2008).

3.1. ***Iron Ores Usage in Egypt***

The extracted iron ores in Egypt have witnessed an increased demand locally especially after the 2017 Anti-Dumping Act imposed against the Turkish, Chinese and Ukrainian ready-made Rebar (Long Steel) and Flat Steel. As a result, the imports for the iron ores and concentrates have increased dramatically to meet the local demand that was amplified with the beginning of the construction work in the New Administrative Capital along with other mega construction projects all across Egypt (TrendEconomy, 2021).

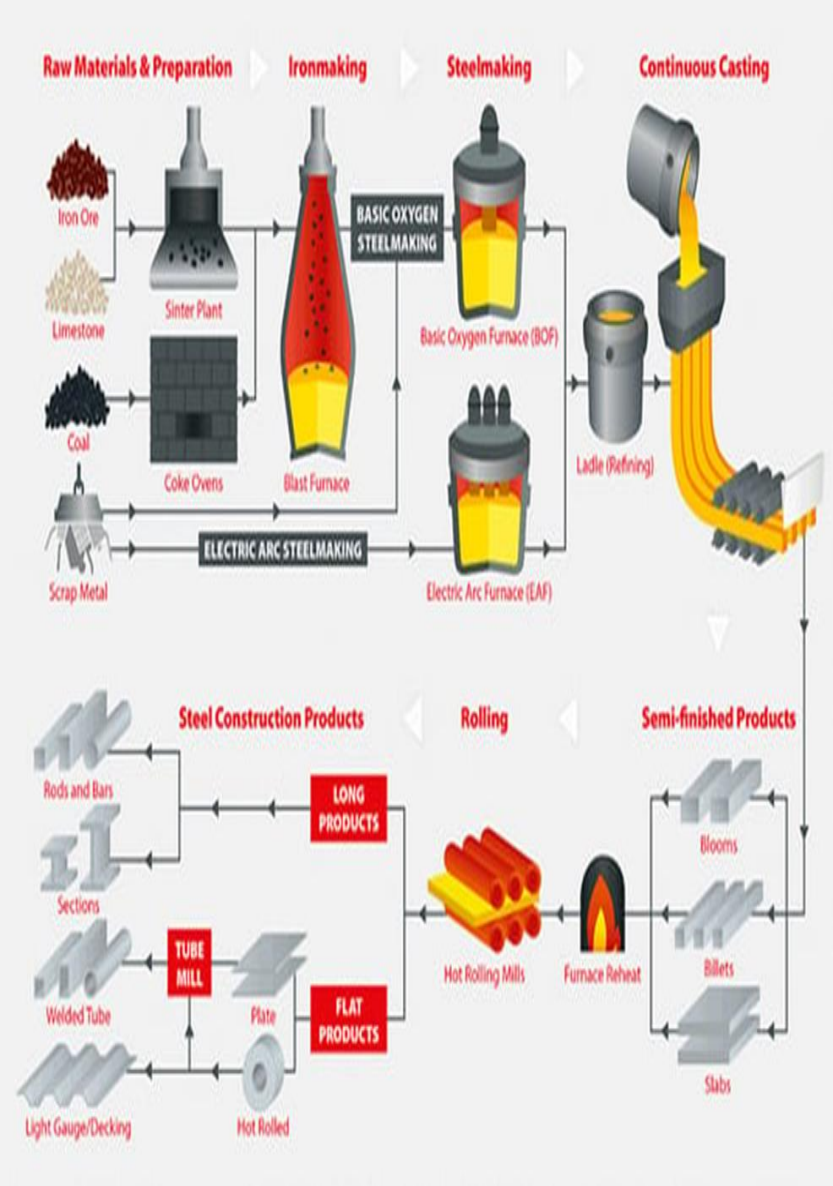
**Figure 2.** Import of Iron Ores & Concentrates Sales Volume in USD


**Source:** https://trendeconomy.com/data/h2/Egypt/2601

3.2. ***Turning Iron to Steel***

The production of finished steel from raw iron ores involves several stages. The first step is Direct Reduction of Iron (DRI), where the iron ores extracted from the mines are crushed, grinded, and treated to produce a purer form of iron. The second step is Refining, where the produced iron is further processed in huge Electric Furnaces or Basic Oxygen Furnaces to remove as many impurities as possible and add the necessary alloying elements to turn iron into steel. The next stage is Casting, where liquid steel is shaped and cast into Continuous Billet to produce long products such as rebar or wire rod, or Thin-Slab Casting to produce flat steel products. The final stage is Lamination of the Steel, where any blisters in the rods or sheets are treated to protect the structural integrity of the steel, followed by Rolling, which helps shape and cut the steel into the desired length and form. Through these stages, raw iron ores are transformed into high-quality finished steel products suitable for a range of industrial, commercial, and domestic applications.

**Figure 3.** Phases of Steel Production



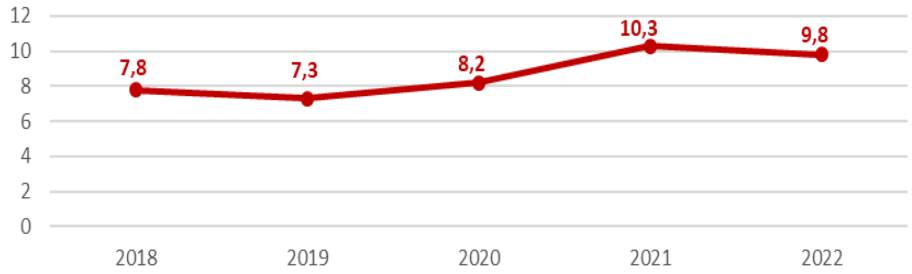

**Source:** Steel production: from iron ore to functional industrial products extracted from https://www.vepica.com/blog/steel-production-from-iron-ore-to-functional-industrial-products/

### 4. Egyptian Crude Steel Production

Egypt is one of the key players in the steel production globally. It has been growing its production steadily over years to cope with the local market demands driven by the flourishment of the real estate market along with other local developmental mega projects (Worldsteel, 2021).

In 2022, Egypt's total production represented the highest in Africa and the 20th in the world overall (Worldsteel, 2022; Worldsteel, 2023).

**Figure 4.** Egyptian Crude Steel Production in Million Tons



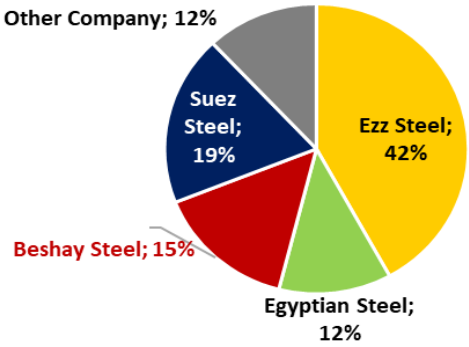

**Source:** https://worldsteel.org

A mild slow in the production in 2022 can be observed due to the slowdown in both the local & global markets because of Russian-Ukrainian war among other economic challenges that impacted the growth of the Egyptian economy. Ezz Steel operates according to a set of internal values and behaviors that ensure that all the employees are fully aligned with the company's vision and strategic directions.

### 5. Major Steel Market Players in Egypt

The Steel-making industry in Egypt is dominated by private sector competitors, following the government's privatization or liquidation of its factories. The key players in the market include Ezz Steel, with the largest market share and the biggest total production capacity of 7 million tons per year (www.ezzsteel.com), Beshay Steel, with a total production capacity of 5 million tons per year of various steel products (Beshay Steel Group, n.d.), Suez Steel Company, with a total production capacity of 2.2 million tons per year of various steel products (www.solbmisr.com), Egyptian Steel company, with a total production capacity of 1.65 million tons per year, which recently had a partial acquisition of 18% of its shares by Ezz Steel in 2022 (https://egyptian-steel.com), El Marakby Steel, with a total production capacity of 1.5 million tons per year of various steel products (www.elmarakbysteel.com/ar/elmarakby-steel), and El Garhy Steel, with a total production capacity of 900,000 tons per year (www.elgarhysteel.com). According to Iron Production in Egypt in 2021 (n.d.), the market share in 2021 was distributed as follows:

**Figure 5.** Egyptian Market Share in 2021




**Source:** Issa, S. (2023)

5.1. ***Market Type***

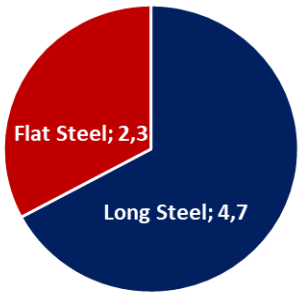
Based on the above market shares, we can easily perceive that the market is in a state of Oligopoly where there are few players within the market of steel-industry. However, Ezz Steel has a dominating share over the other competitors. Factoring the partial acquisition of "Egyptian Steel" by "Ezz Steel", and based on the above market data, we are going to have a closer look on "Ezz Steel" as the dominating market player to gain a better understanding for its market impact and the different factors impacting the supply and the demand mechanisms.

To assess the extent to which Ezz Steel is threatened by market failure, a more detailed analysis of the company's specific market position, competitive dynamics, and the regulatory environment would be necessary. Additionally, examining indicators such as market concentration, pricing behavior, and the presence of anti-competitive practices would provide further insights into the potential risks of market failure for Ezz Steel in the oligopoly market. Although Ezz Steel operates in an oligopoly market, where there are multiple competitors, the concentration of market power among a few large firms can still lead to anti-competitive behavior and potential market distortions. It is important to note that the concentration ratio is 40% , which shows a dominant strategy but the government is monitoring the concertation ratio by the antitrust law.

5.2. ***Ezz Steel Production Capacity & Products Portfolio***

As of 2023, the company has 4 main plants with a total production capacity of 7 million tons annually from both the "Long Steel"/ "Rebar" and the "Flat Steel" products.

**Figure 6.** Total Production Capacity for Ezz Steel Group in Million Tons




**Source:** https://www.ezzsteel.com/about-ezz-steel

According to EzzSteel (n.d.,a), the company operates from four strategically located plants:

- Alexandria Plant - Dekhela, which can produce both Rebar and Flat steel.
- Suez Plant, which can produce both Rebar and Flat steel.
- 10th of Ramadan Plant, which can only produce Rebar steel.
- Sadat City Plant, which can only produce Rebar steel.

These plants are in close proximity to key shipping facilities and marine ports, such as El Dekhela and EL Sokhna ports. This strategic location enables the company to deliver its products swiftly and at competitive shipping prices both to the local and international markets.

Egyptian Integrated Steelaking Plants produces various types of products with various measure and specification to meet the vast requirements of their customers including:

- Rebar (Long Steel) that are used in various applications with specific focus on the concrete reinforcement.
- Wire Rods that are used to manufacture high-performance products such as electric components and welding electrodes.
- Flat Steel that can be as thin as 1 mm sheets that can be used in the manufacturing of ships, pipes and household goods.
- Welded Steel Fabric Panels that are used mainly for construction applications.

**6. PESTEL Analysis**

Before we start the careful analysis of the company Rebar Steel product, we need to carefully examine the different external factors that can have a megalithic impact on Ezz Steel operations.

Political: Political stability remained relatively stable during the period, with the government's development plan contributing to a favorable business environment. The government's imposition of tariffs on imported steel products in 2019 protected the domestic industry and positively impacted local steel manufacturers. In 2020, the COVID-19 pandemic significantly affected the global steel industry, and the Egyptian government took steps to support local steel manufacturers.

Economical: The Egyptian economy experienced steady growth, driven by strong private consumption and investment, but the COVID-19 pandemic resulted in a contraction of GDP in 2020. High inflation rates also increased the cost of inputs for steel manufacturers, and will increase in the near future, Abdou, et al. (2018).

Societal: The changing social habits, such as the growing demand for housing in new cities, have resulted in a surge in demand for building steel. The government's ambitious plans to invest in infrastructure projects have significantly contributed to the growth of the local steel industry. However, the government's decision to suspend construction permits initially posed a challenge to the industry's growth.

Technological: The steel industry in Egypt is relatively technologically advanced, with some local manufacturers adopting new production techniques to improve efficiency and reduce costs. There has been a growing trend toward automation in the steel industry, leading to increased productivity and reduced labor costs.

Environmental: The Egyptian government has implemented several environmental regulations to reduce the impact of industrial activities on the environment. Extreme weather events attributed to climate change pose a significant risk to the production and transportation of steel products, and there is growing concern about the industry's environmental impact.

Legal: The Egyptian government has implemented several policies to support local industry, including import tariffs and subsidies for local manufacturers. Changes to labor laws and COVID-19 related regulations have impacted the operations of steel manufacturers.

Also, The government has implemented local laws, including anti-dumping laws, to safeguard the domestic steel industry. These measures aim to protect local steel producers from unfair competition and ensure a level playing field.

## 7. Observing the Supply and Demand Dynamics of Rebar in the Market

The Rebar (Long Steel) product will be the focus of our analysis as it alone constitutes more than 50% of the company's total sales and production, see table 1. During the observation period from Q3 2019 to Q1 2022, the following volumes of Demand & Supply in million tons were observed (EzzSteel, 2022)*:

**Table 1 : prices of rebar steel from 2019 till 2022**

| Quarter/Year | Q3-19 | Q4-19 | Q1-20 | Q2-20 | Q3-20 | Q4-20 | Q1-21 | Q2-21 | Q3-21 | Q4-21 | Q1-22 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Date** | **Sep-19** | **Dec-19** | **Mar-20** | **Jun-20** | **Sep-20** | **Dec-20** | **Mar-21** | **Jun-21** | **Sep-21** | **Dec-21** | **Mar-22** |
| **Demand** (x1000 Ton) | 680 | 850 | 941 | 609 | 860 | 760 | 595 | 760 | 742 | 803 | 789 |
| **Supply** (x1000 Ton) | 600 | 800 | 932 | 478 | 860 | 860 | 715 | 725 | 760 | 700 | 808 |
| **Price** / Ton** (LE) | 14,051 | 8,649 | 8,484 | 8,353 | 7,291 | 10,505 | 11,647 | 12,196 | 12,770 | 13,600 | 13,454 |

**Source:** EzzSteel (2022)

**Note:** The prices above were the factory delivery prices as observed in the financial statements

### 7.1. *Factors Affecting Rebar Demand*

In 2021, the Egyptian government imposed a restriction on the construction activities nationwide that caused the demand on the Rebar Steel to decline sharply in Q2 2020. This was part of the initial protective measure for the COVID-19 crisis that started to manifest in Egypt at the same time. In 2022, the first quarter also brought unpleasant surprises where the Russian-Ukrainian war broke out and caused a global wave of currency fluctuation, increased inflation rates and accordingly a decrease in the demand for long term-investments (mainly in the real estate sector) by individuals due to the uncertainty. This caused a mild decrease in the demand for the rebar steel used in construction.

Egypt was no different than the rest of the world but even worse where the currency lost over 25% of its value against the US Dollars and people started looking for another mean of saving their money value.

a) The sales price for steel

The product's price was affected when the demand sharply decreased due to the Egyptian pound devaluation. Additionally, since this product serves as a raw material in several industries, the market conditions of these industries also impact the product's demand, (Abdou, Tarek & Tarek, 2018). Furthermore, the expectations of higher or lower prices in the future have an impact on the current demand for the product.

b) Increase in the construction

Construction is the biggest consumer. It could be in building, bridges, tunnels, fencing, railway lines, harbors, stations, stadiums, etc. During the past years, Egypt faced a huge number of construction buildings like New Mansoura city, New Capital city, New Alamein City, and a huge number of bridges as well. Therefore, the demand was very high during the past years.

c) Increase in the transport manufacturing

The next biggest consumer is the transport industry with all cars, trucks, trains, trains, ships aircraft, jet engines, and even rockets needing steel.

d) Energy

All types of energy need steel. Oil and Gas need pipes, wells, and platforms. Electricity needs turbines, pylons, transmission towers etc. Renewable energy also is heavily dependent on steel like wind turbines needing windmills.

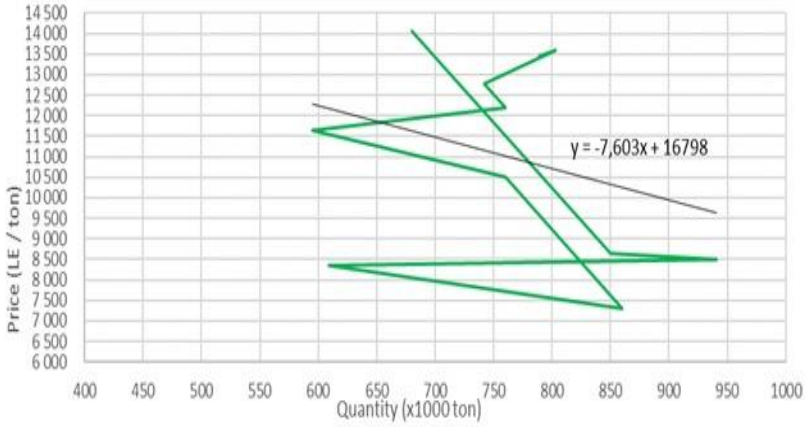
e) Appliances and industry

Nearly 75% by weight of household appliances (ovens, washing machines, driers, refrigerators, sinks, cutlery) is steel. The ratio is much higher in industrial machinery. Even farm machinery, water tanks etc. need steel.

f) Packaging

Being recyclable, steel is the preferred packing material which includes from items as large as containers in ships to bottle caps and aerosol cans.

**Figure 7.** Rebar Demand Curve



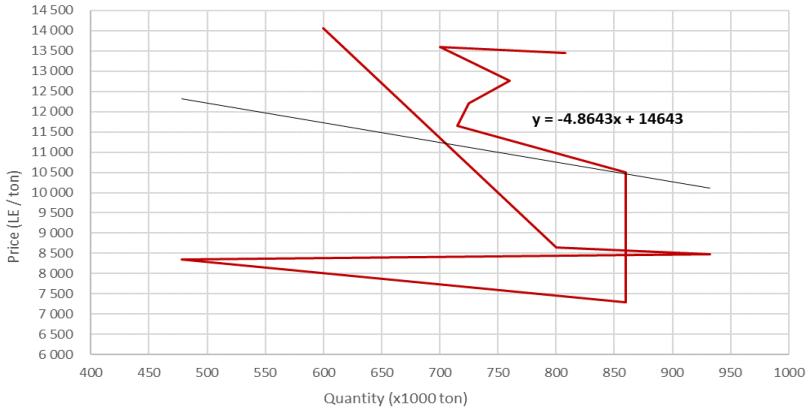

**Source:** EzzSteel (2022)

7.2. ***Factors Affecting Rebar Supply***

In 2019, the iron ore prices surged, leading to increased production costs. Additionally, the last quarter of the year saw the emergence of COVID-19 in China, resulting in the imposition of strict quarantine and shutdown policies that caused a global slowdown in transportation and iron ore prices. China is the world's highest producer of pig iron and crude steel, accounting for over 52% of global production in 2021 (Worldsteel, 2022).

Egypt's economic condition has also faced numerous challenges, including currency devaluation in Q1 2022, which increased the cost of outstanding foreign currency loans for the company and elevated borrowing interest rates. These challenges have caused real estate developers to pause their operations, waiting for the stabilization of highly fluctuating raw materials prices and USD exchange rates.

**Figure 8.** Rebar Supply Curve




**Source:** EzzSteel (2022)

7.2.1 Cost of production for the steel

Input costs must also be considered. The reason is simple. Steel requires a certain amount of iron and carbon, and different types of steel require different amounts of components. Therefore, if a type of steel, which requires more amounts of components than the others, is going to be produced, the production cost would be very high and that will affect the supply.

7.2.2 Exchange rate for the Egyptian pound

As we import most of the raw materials in the steel industry, the exchange rate of the Egyptian pound versus the USD is one of the most factors that affect the supply. If we have a high exchange rate, supply would be decreased.

7.2.3 Technology

Concerning the factors affecting the supply of steel, all three (technology, input costs, and government regulation) mention above are included. Every goods must be made with their own methods and since steel cannot be made in simple way, (it needs machines and tools) so, technology plays a vital role. If one company uses better and required machines and tools to produce steel than other company, that one will be able to produce more.

7.2.4 Government regulation

Government policies can both increase and decrease the quantity supplied of steel. Some forms of policies are production quotas and production subsidies. Production quota can be applied to individual worker, industry or country. Quota can be used to encourage production or limit it to control the supply of goods. Also, since quotas increase the domestic price of the restricted goods, just as tariffs, it affects the quantity supplied. If government provides direct production subsidies, by cash payments for production of steel, it is to encourage the development of steel industry.

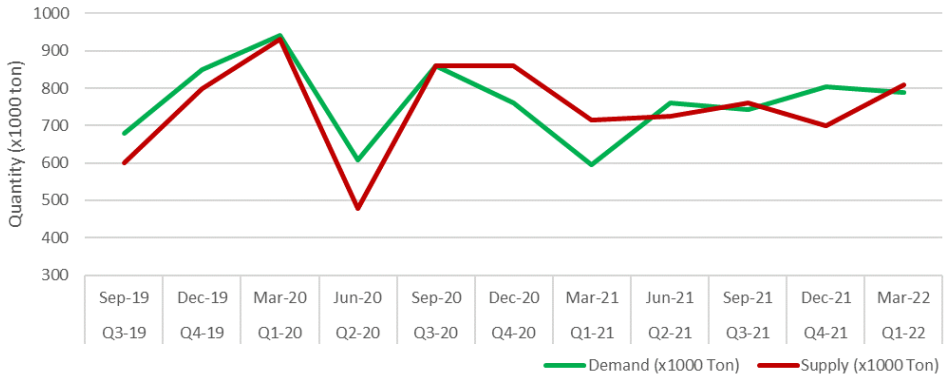
7.2.5 Capacity and efficiency of the factory

The capacity of Ezz factories would fulfil the demand and also export numbers, if we have more factors with higher capacity. This would help to increase the number of supply.

7.2.6 Future projection for the sales price

This one is a bit more complex, and generally forecasted by economists and other experts, but expected projections for the future of metal production and availability will also play a role in pricing.

**Figure 9.** Demand & Supply Through Ten Quarters




**Source:** EzzSteel (2022)

### 7.3. *Elasticity of Demand and Supply*

From the previous data, the elasticity of Demand and Supply can be calculated for the first quarter of 2022 versus the same quarter of 2020 as follows:

Elasticity of demand: $E_d = \frac{\%\text{ change of unit demand}}{\%\text{ change of price}} = 0.38$

Elasticity of supply: $E_s = \frac{\%\text{ change of unit produced}}{\%\text{ change of price}} = 0.31$

The results of demand elasticity and supply elasticity are 0.40 and 0.32 respectively, which mean that Rebar of Ezz Steel consider as **Inelastic product**.

## 8. Conclusion

The market for steel production in Egypt is expected to remain an oligopoly for the upcoming decade, with few suppliers and no real measures taken by the government to reduce oligopoly or monopoly in the market. As a result, Ezz Steel will continue to be a price maker, and the quantity supplied/demanded will still be influenced by various factors, including prices.

The steel production industry in Egypt is heavily regulated and controlled by the government, with local laws against Anti-Dumping laws imposed to protect the local industry. However, these laws do not provide pricing guidelines, leading to market control over local prices by Ezz Steel, which acts as the market price setter, driving other producers to increase their prices as well, creating a typical "Oligopoly Market" scenario.

## 9. Recommendation

In order to maintain stable prices and balanced demand and supply quantities, the steel industry should consider implementing the following recommendations:

Firstly, improving the trade balance for the steel sector can help to ensure that supply and demand are in equilibrium. Secondly, decreasing and controlling the number of imported steel products can help to maintain a stable price for domestic products. Thirdly, increasing raw material production through digitization in mining can ensure that the industry has a consistent supply of materials. Fourthly, establishing a steel scrap policy can help to reduce costs and promote sustainability.

Fifthly, promoting domestic manufacturing of finished steel products can support local businesses and reduce dependency on imports. Sixthly, promoting a shift towards an environmentally friendly steel sector can help to reduce the industry's carbon footprint and promote sustainability. Seventhly, promoting research and development can lead to the

innovation of new products and technologies that can improve the industry's efficiency and competitiveness.

Eighthly, prioritizing safety and workforce welfare can help to ensure that workers are protected and motivated to continue working in the industry. Ninthly, facilitating the development of skilled manpower can help to ensure that the industry has the necessary talent to meet its demands. Lastly, ensuring sufficient infrastructure and logistics capacity can help to ensure that the industry can efficiently transport its products and raw materials.

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