DOING BUSINESS IN GHANA

Manufacturing

SECTOR

GHANA INVESTMENT PROMOTION CENTRE

Ghana On the go!

INTRODUCTION

Overview of the Manufacturing Sector in Ghana

The Ghanaian economy is made up of three main sectors; they are agriculture, industry and services sectors. The unimpressive performance of the industrial sector (comprising manufacturing, mining and quarrying, utility services and construction) was reversed in 2017 with a growth rate of 19.3%. This surge is largely attributable to the deferral of the FPSO Turret Remediation Project to 2018 as well as the increase in revenue from new production from the Sankofa-Gye Nyame and the Tweneboa Enyenra Ntomme ("TEN") oil fields.

The manufacturing sector is a subsector of Industry. It covers 16 of the 33 sub-sectors in the international standard classification of industries (ISIC). Manufacturing Value Added (MVA) was 5.6313% of GDP in 2016. The sector has experienced a sustained decrease in its share of GDP throughout the past decade, losing more than 40% of its 2006 share of 10.2%. However, GDP from Manufacturing in Ghana averaged 2173.25 GHS million from 2006 until 2017, reaching an all-time high of 2543 GHS million in 2017. 'The One District One Factory' initiative by government brings exciting prospects for the industrialisation of the economy. This policy, among others would establish a factory in each of the 216 districts in Ghana and would build strong value chains around key industries such as automobiles and other high value products for exports.

In 2003, the last time an industrial census was conducted in Ghana, there were about 26,000 manufacturing establishments employing about 243,500 persons. About 55% of the establishments were micro-businesses, employing less than 4 persons; 40% were small businesses, employing between 5 and 19 persons; 5% were medium businesses, employing 20–99 persons; and only 1% were large Diagnostic Study of Light Manufacturing in Ghana 6 businesses, employing 100 or more persons. Micro businesses accounted for 15% of manufacturing employment; small and medium enterprises contributed 51% of employment; large businesses accounted for 34% of employment. Most of the establishments were located in the Greater Accra and Ashanti regions; Greater Accra had 25.7% of establishments and 27.9% of employees while Ashanti had 24.7% of establishments and 24.3% of employees. According to the 2003 Industrial Census, almost 50% of manufacturing employees were apprentices or unskilled workers. About 5% were professional and managerial staff and 40% were skilled workers.

HEAVY MANUFACTURING

Heavy manufacturing is a sector that contributes immensely to the growth of the economy.
Heavy industries often sell their products to other industries rather than to end users and consumers. Accordingly, when an economy begins to recover, heavy industry is often first

to show signs of improvement. This makes the sector a leading economic indicator. Oil, mining, ship building, steel, chemicals, machinery manufacturing and similar industries are examples of heavy industry. They are very capital-intensive and as such require a lot of machinery and equipment to produce. Although an under-developed sector in Ghana, manufacturing is nevertheless an important contributor to the country's GDP.

Until recently, the sector was characterized by a narrow industrial base dominated by **agro-industries, limited diversification, reliance on imported inputs of raw materials and intermediates, relatively under-developed industry linkages, prevalent use of obsolete technologies and production** that is mainly focused on the domestic market. Government recognizes that significant transformation of the sector is vital. In order to achieve this, it is necessary to promote and stimulate a change process which will make the sector exhibit a diversified structure of production; undertake processing of more of the natural resources with which Ghana is endowed; and become export-oriented. Ghana's most important manufacturing industries include aluminium smelting, oil refining, chemicals and cement, and the processing of metals.

SUB-SECTORS

1. Metal Production

The metals, engineering and assembly sector comprises three distinct groups of firms.

- **The aluminum sector**
  Mining of bauxite, production of aluminium and aluminium products. Ghana has large deposits of bauxite, the main raw material for the aluminium industry. Ghana's bauxite deposits, located in Awaso in the Western region, are mined by Ghana Bauxite Company, which has been in operation since 1941.There are also deposits of bauxite at Nyinahin in the Ashanti region (estimated deposit: 280 million mt), Kibi in the Eastern region (estimated deposit: 120 million mt) and Mount Ejuanema, also in the Eastern region (estimated deposit: 5 million mt). Ghana's bauxite is exported to Jamaica for processing into alumina and then reimported into the country to supply the Volta Aluminum Company (VALCO). The main client of VALCO is Aluworks, a rolling mill which manufactures aluminum products from aluminum ingots or molten alumina. The company is the main source of supply to the downstream aluminum sector, which comprises 15–20 medium-sized companies that manufacture roofing sheets and about 150 small enterprises that produce a wide range of kitchen utensils.

- **Iron and steel.**
  There are currently four manufacturers of rebar from scrap: *Tema Steel Company Limited, Ferro Fabrik, Special Steel and Western Steel and Forging*. Western Steel and Forging also

produces nuts and bolts. These four companies combined employ about 2,800 people. There are three producers of drawn wire products, including Wire Weaving Industries Limited, which is profiled in the next section. It is notable that no company is involved in wire drawing or in galvanizing (steel output volumes in Ghana do not justify the setting up of a galvanizing operation). All these companies import ready-coated wire as their raw material.

United Steel makes hollow squares and round pipes from imported steel sheet sourced from the Ukraine, Russia and China. A few small firms make nails from imported drawn wire.

- **Fabricated metal products.**

  Many small informal enterprises are involved in metal fabrication. The biggest concentration of informal metal fabricators is the Suame Magazine Industrial Development Organization in Kumasi, in the Ashanti Region. Established in 1935, it is the largest artisan engineering cluster in sub-Saharan Africa occupying an area of 20 square miles. The cluster currently contains more than 200,000 fabricators, about 50% of which are engineering enterprises that are involved in the manufacture of metal products and in vehicle repair. The Suame Magazine is noted for having some of the most mature micro- and small-scale metal fabrication enterprises in Africa. It serves individuals and private and public corporate bodies from all over the country. It also serves customers from neighbouring West African countries, especially Burkina Faso, Nigeria, Togo, Mali and Ivory Coast.

2. Chemicals

The chemical industry produces basic chemicals, petrochemicals, fertilizers, paints, gases, pharmaceuticals and dyes. The sector covers over 70,000 commercial products and employs almost 25% of Ghana's industrial workforce. Almost all inputs are imported. The main imports include petroleum products, fertilizers, pesticides and chemicals for the mining industry. Over 70% of the chemicals are used in agriculture (fertilizers and pesticides), the processing/manufacturing industries (mining, cement, metal, soap, textile, etc.) and the petroleum industry (oil refinery products and lubricants). About 20% of the imported chemicals are processed or repackaged for sale on the local market. The chemical industry comprises seven segments.

1. **Polymers**: polyethylene; polyvinyl chloride; polypropylene; polystyrene; man-made fibres including polyester, nylon and acrylic.
2. **Petrochemicals**: bulk petrochemicals and intermediates made from liquefied petroleum gas, natural gas and crude oil. These include solvents (such as paint thinner), paints, drugs, fertilizers, pesticides, explosives, synthetic fibres and rubbers, flooring and insulating materials, compact discs, video tapes, electronic equipment and furniture.

3. **Inorganic chemicals**: salt, chlorine, caustic soda, soda ash, nitric acid, phosphoric acid, sulphuric acid, titanium dioxide and hydrogen peroxide.
4. **Life sciences:** chemical and biological substances, pharmaceuticals, diagnostics, animal health products and vitamins.
5. **Specialty chemicals**: electrochemicals, industrial gases, adhesives and sealants, coatings, industrial and institutional cleaning chemicals and cyanide for mining activities.
6. **Consumer chemicals**: soaps, detergents and cosmetics.
7. **Organic and inorganic fertilizers**.

3. *Construction*

The share of GDP associated with the building and construction sector increased from 4.5% in 1975 to 8.5% in 2000. Over the next few years, the sector continued to grow rapidly, but the annual growth rate slowed from 15% in 2007 to 12% in 2008, and since then the sector has contracted somewhat. The government is the major sponsor of infrastructure projects (building and construction) and dominates the sector. The activities of the major construction companies comprise

- heavy construction, including civil projects such as dams, sewer systems, roads, railways and infrastructure;
- commercial buildings, including apartments, offices, retail, hotels,
- schools and public buildings; and
- Residential buildings.

It also includes remodeling, renovating, adding to existing structures and removing them. Foreign firms dominate the industry due to their size, capacity and technical expertise, which is well suited to large works such as major road building and infrastructure projects. Local construction companies are mostly medium or small scale. They are largely involved in the construction of feeder roads, urban roads and small and medium-sized buildings. Following the enactment of the Public Procurement Act of 2003 (Act 663), all public projects go through a local or international bidding procurement process. Cement, stones and bitumen are purchased mainly from local sources, while most fittings, furnishings and fixtures are imported from Europe, the US, Dubai and China.

4. *Cement & Quarrying*

The rapid growth of the construction sector has led to increasing demand for cement over the past decade. GDP from Construction in Ghana averaged 2311.61 GHS Million from 2006 until 2017, reaching an all-time high of 3175 GHS Million in 2017.

Prior to the market liberalization of 2000, the cement industry was a monopoly, with Ghana Cement Works Limited (GHACEM) as the only domestic producer. There are now about five domestic producers. Two are based in the south of the country: GHACEM has two plants, at Tema and Takoradi, with a total production capacity of about 2.4 million mt; and Diamond Cement has a grinding mill located in the Volta region with a capacity of 1.2 million mt. Savanna Cement Ghana Limited, a fully integrated plant with a plant capacity of 300,000 mt, is located in the Northern region. Its clinker production unit began operating in March 2012. Total cement output from GHACEM and Diamond Cement Ghana Limited increased from 2.4 million mt in 2003 to 3.9 million mt in 2007. A large number of small firms, cement distributors and individuals are engaged in the import of bagged cement into Ghana. There are also a few small to medium-sized companies, including Greenview International Co. Ltd (a subsidiary of the Dangote group), that are involved in the import of bulk cement for rebagging and distribution in Ghana.

Quarry dust and stones are used for road construction and estate development. The business of quarries plays very important roles in any national development efforts. Eastern Quarries is one of the largest quarries in Ghana in terms of concession size and production volumes – it has an estimated resource life of over 150 years. The company is the market leader for precast and quarry aggregates. The quarry is located at Shai Hills, about 40km from Accra, and the headquarters of the company is in the Tema Industrial Area. The average turnover of the company is in excess of US$3.3 million per year and it has 150 employees. Eastern Quarries produces two broad categories of products: precast products and quarry aggregates. Precast products include pavement blocks, building blocks of sandcrete, concrete and rock mixes, road kerbs for domestic and industrial use and concrete pipes and culverts with C25 strength and above.

LIGHT MANUFACTURING

Sub-sectors

1. **Pharmaceuticals**

   The Pharmaceutical manufacturing industry of Ghana is seen as robust as compared to its neighbours in the sub-region. The industry continues to outperform markets in the sub-region despite the fact that the country imports majority of its drugs. The market is made up of approximately 30% locally produced drugs and 70% imported products; the latter originating mainly from India and China.

   Ghana is the regional hub for pharmaceutical manufacturing and distribution to the over 300 million people who live within the Economic Community of West African States

(ECOWAS). Compared to the other countries, Ghana has a relatively strong pharmaceutical industry with stringent guidelines, producing quality products and high production capacity.

Ghana's pharmaceutical manufacturing sector currently comprises thirty-eight (38) registered firms, employing a wide range of professionals including pharmacists, chemists, engineers and technologists. More than 75% of the companies are owned by Ghanaian entrepreneurs, with three (3) listed on the Ghana Stock Exchange; i.e. (Starwin, Ayrton and PZ Cussons).

Some of the major players in the Pharmaceutical Manufacturing Sector in Ghana include Tobinco Pharmaceuticals Limited, Ernest Chemist, M&G Pharmaceuticals Limited and Dannex amongst others. The growth drivers of these companies are as a result of the increasingly urbanized population, which means better infrastructure and greater household purchasing power. The sector in Ghana is recognised for potential benefits like job creation, improvement in household incomes, investment opportunities, industrial growth and advanced skills set development it offers to the Ghanaian people.

The Pharmaceutical Manufacturing Industry has seen substantial expansion with market revenue having doubled from $200m to $400m in the three years up to 2017. This growth in the sector can be attributed to measures put in place by government to encourage growth in the sector, and also foreign interest in buying into the local health care market.

2. **Wood Processing**

The wood industry has not undergone any major transformation over the past two decades. Currently, there are about 100 sawmills in the country with 17 involved in sliced and rotary veneer. About 40 of these sawmills produce mouldings, profiles and machined wood. Six firms specialize in flooring products and doors while 10 are involved in plywood processing. The downstream segment of the wood industry (furniture production) is dominated by small enterprises that lack the capacity to produce export-grade furniture or to achieve the large volumes required to serve international markets.

The formal sector produces a wide range of wood products, such as lumber (kiln or air dried), sliced veneer, plywood, rotary veneer, mouldings, flooring, boules and furniture parts for export. Only a fraction of its products are sold on the local market. While most of the products of the formal sector are targeted at the export market, there is a large local market for furniture products and building materials that relies on local companies. Dominated by over 41,000 small and medium-sized carpentry establishments, the industry has seen an increase in imports of furniture from Asia generally and especially from China.

The biggest sources of local demand for wood are the furniture and construction industries, which account for 75% and 24%, respectively, of the market. The furniture industry satisfies a large demand from the growing middle class, while the flourishing construction industry satisfies a steady demand for wood for housing and commercial developments.

The trend towards importation of furniture has increased over the years and now accounts for a full 85% of the demand in the country. This has led the major furniture retailers; Casa Trasacco, Simbin, Una, Life style Gallery, Orca Furniture City, Blue Gallery, Horizon Furniture, Kingdom all importing most of their furniture into the country. Ghana's wood processors are currently seeking ventures with international partners in order to upgrade current plant and equipment, improve management practices, and increase the range of products offered.

Opportunities for investment exist in the following product areas: Finished and semi-finished furniture and components; Mouldings and machined wood; Floor and deck blanks, strips and blocks; Door, window, and cabinet frames and panels; Dowels and tool handles; Peeled and sliced veneers; Kiln dried rough or machined lumber.

3. Textiles

The textile industry is of tremendous importance to the country's economy, as it creates jobs for especially people in the rural areas and generates revenue and income for both government and persons involved in the weaving and production of textile products. The industry has shown signs of potential growth prospects in promoting high-quality traditionally designed fabrics as "Made in Ghana" to niche markets, especially the US.

Today, Ghana's textiles industry includes vertically integrated mills, horizontal weaving factories and the traditional textile manufacturing firms involved in spinning, hand-weaving and fabric-processing. Textile exports include:

- Cotton yarn
- Cotton fabric
- Printed fabric
- Polyester fabric
- Blankets
- Bed sheets

The industry is supported by National Vocational Training Institutes throughout the country. These institutes provide basic practical and theoretical training in tailoring and dressmaking. There are also a growing number of private fashion design institutes and internationally acclaimed designers that teach latest techniques to aspiring textile designers. There are about 67 recognized textile industries in Ghana. These include; Tex Styles Ghana Limited (GTP), Juapong Textiles, Volta Star, Ghana Textile Printing Co. Ltd., Akosombo Textile Company Limited (ATC), Premiere African Textile, Bowman Kente Weaving Enterprise and Printex, among others.

INSTITUTIONS AND SECTOR AGENCIES

GHANA EXPORT AND IMPORT BANK (EXIM BANK)

The Ghana Export and Import Bank formerly the Export Development and Investment Fund (EDIF) was established by law on October 4, 2000 under the Act 582 and since 2002 up to date has provided loans and grants in the total amount of about GH¢126 million in accordance with its mandate. The EDIF provides funding as loans through 20 designated financial institutions (DFIs) to producers and marketers of export goods and services. The fund also provides grants to associations, institutions and groups to boost the production and management capacity of such groups operating in the non-traditional export sector. In the year 2016, the fund metamorphosed into the Ghana Export and Import Bank under the Ghana Export-Import Bank Act 2016 (Act 911)

GHANA EXPORT PROMOTION AUTHORITY (GEPA)

The Ghana Export Promotion Council was established in 1969 by Act 396 as an agency of the Ministry of Trade and Industry. It has as its mandate the development of Ghana's export trade and the promotion of Ghana's exports abroad. It acts as a coordinating institution for the various public sectors and other organizations involved in trade facilitation. It carries out advocacy services for organizations and individuals involved in the export trade and organize workshops, forums, conferences and seminars for such organizations and individuals. GEPA also organizes market and trade missions, trade fairs and exhibitions, buyer-seller meetings with a view to helping Ghanaian enterprises to do business in the competitive international export market. It also has the trade information centre, which offers information and referral services to the business community. It has some 3,000 private sector exporting companies organised into 15 product associations. GEPA acquired its Authority Status in 2011. The change to Authority was in accordance with the Revised Laws of Ghana Act 1998, (Act 562) (1) of the Ghana Export Authority Act, 1969 (NLCD 396).

GHANA FREE ZONES BOARD (GFZB)

The Ghana Free Zones Board was established by an Act of Parliament, Act 504 in 1995, to establish free zones in Ghana for the promotion of economic development and to provide for the regulation of activities in free zones and for related purposes, and has as at first quarter

2017, two hundred and one approved Free Zone Companies and five designated export processing zone areas. These are: the Tema Export Processing Zone with a total of 1,234.11 acres which has been developed to some extent under the Gateway project, the Sekondi Export Processing Zone with a total of 2,512.82 acres; the Ashanti Technology Park with a total of 1,090 acres; the Shama Export Processing Zone with a total of 3,238 acres; and the Community 21 residential area with a total of 152 acres all of which are yet to be developed. The main Free Zones Enterprises are into: Shea butter processing, development of computer software, wood processing, cocoa processing, ICT, consumer goods and flight catering. The total number of employees directly employed in the Free Zones is 27,971. The total capital invested in Free Zones Enterprises over the period since its establishment is approximately US$3 billion while the total value exported is US$ 5.8 billion.

GHANA STANDARDS AUTHORITY (GSA)

The Ghana Standards Authority (GSA) is responsible for the nation's quality infrastructure and conducts its activities on the four pillars of metrology, standards, testing and quality assurance. It is also the custodian of the Weights and Measures Decree (NRCD 326, 1975). It has regional offices located in the regional capitals with the headquarters in Accra near Gulf House, Okponglo. The national standards infrastructure is critical to the growth of industry and promotes standards in public and industrial goods, welfare, health and safety. Currently three of GSA's Laboratories have received and maintained international accreditation in the areas of mass, temperature and pressure. A national enquiry point has been strengthened to serve as the National Standards Information Centre relating to Standards, Technical Regulations, Conformity Assessment Procedures, Import-Export procedures and is serving as a reliable information source for both local and foreign import/export demands. The testing laboratories are currently preparing towards international accreditation on the requirements of ISO/IEC 17025. This will ensure that the GSA labs will be in a position to certify that exporters meet specific export standards and requirements.

NATIONAL BOARD FOR SMALL SCALE INDUSTRIES (NBSSI)

The National Board for Small Scale Industries is the Government organization responsible for the promotion and development of micro and small enterprises in Ghana. It was established in 1985 by an Act of Parliament (Act 434 of 1981). It is a key institution that has the potential to assist in the reduction of unemployment and facilitate the growth and development of the SME sector. NBSSI has its head office in Accra, Ten Regional Offices and 216 District Offices known as Business Advisory Centres. Over 2,750 entrepreneurs have benefited from counselling and advisory services offered by the Business Advisory Centres in 2010. Extension services have been provided to 1,559 entrepreneurs while 40 associations have received training in leadership and group dynamics.

GRATIS FOUNDATION

The Ghana Regional Appropriate Technology Industrial Services (GRATIS) evolved from a project-based activity in 1987 with support from the European Union and the Canadian International Development Agency to promote small-scale industrialization in Ghana. It seeks to develop, promote and disseminate marketable technologies and skills for the growth of industry, particularly, micro, small and medium scale enterprises in Ghana and the West African sub-region. GRATIS operates through a network of 10 regional centres and 3 District Rural Technology Service Centres.

Other facilitators

There are several other institutions rendering support services to the manufacturing sector. These, among others, include: The Association of Ghana Industries (AGI), The Ghana National Chamber of Commerce and Industry (GNCCI), the Private Enterprise Foundation (PEF), Food and Drugs Authority (FDA), Pharmaceutical Manufacturers Association of Ghana (PMAG) and the Federation of Association of Ghanaian Exporters (FAGE).

GOVERNMENT POLICY DIRECTION AND SECTORAL DEVELOPMENTS

The Government through its 2017 budget outlined its policy direction which suits the manufacturing business environment. The government seeks to achieve these objectives in the short-medium term:

- Build the most business-friendly and industrialized economy in Africa, capable of creating decent jobs and prosperity for all Ghanaians
- Promote sustainable and integrated infrastructure development across the country
- Shift the focus of economic management from taxation to production
- The implementation of the “One District One Factory “initiative

In addition, the government, reviewed some of the taxes affecting the sector and these are

- Abolishing 5 % VAT/NHIL on Real Estate sales
- Abolish excise duty on petroleum
- Abolish the 1% Special Import Levy
- Reviewing Import duties on raw materials and machinery in context with ECOWAS-CET Protocol

LATEST DEVELOPMENTS AND TRENDING ISSUES

- The One District One Factory initiative was officially inaugurated by the President in August 2017 with a sod cutting ceremony for the construction of the Ekumfi Fruits and Juices Company Limited, the first factory to be established under the initiative.

- Ghana and Iran are building a 0.6 metric ton (mt)/yr cement plant at the Dawa Industrial Enclave near Tema in Ghana. Vice President Mahamadu Bawumia commissioned construction work at the project, according to the Ghana News Agency. The plant is scheduled for completion in late 2019. The project is a joint venture between the two countries.

- Diamond Cement has signed a memorandum of understanding (MOU) with the Ghana Ports and Harbours Authority (GPHA) to build a port at Kedzi in the Keta Municipality of the Volta Region. The site is being developed to help the cement producer import raw materials, according to the Ghanaian Times. At present it uses the port of Lome in Togo.

- In December 2016, a new cement plant with the capacity to produce 1,000,000 metric tonnes per annum was commissioned. Known as CIMAF Ghana Limited, the plant was established by Ciments de L'Afrique (CIMAF), a subsidiary of Morocco's Addoha Group, at the cost of €60 million. About 1,000 Ghanaians were engaged to work on the construction of the plant, while about 200 are currently employed on a permanent basis.

- In August 2017, the President laid the foundation stone for a new cement plant in the Tema Free Zones near Accra. The US$55m grinding plant, to be operated by CBI Ghana, will take a year to complete. It will produce and supply premium cement under the brand name Supacem. The company is expected to employ some 400 staff when it commences operations.

- Tema Oil Refinery (TOR) projected refining 16 to 18 million barrels of crude oil in 2017, following the inauguration of its new 45,000 capacity furnace (crude oil heater) at the Crude Distillation Unit (CDU). The refinery successfully processed seven million barrels of crude oil in the 2016 fiscal year, thereby reducing the import margin of finished petroleum products, a feat its management attributed to policy reforms and the commitment of the workers. According to TOR officials, the inauguration of the expanded heater (furnace) capacity had made it possible to revert the CDU's processing unit to 45,000 daily production capacities from the present 28,000 barrels per stream a day (bpd).

- The top steel producers in the country are Sentuo Steel, which is a joint-venture between the Ghanaian government and Chinese actors and has an annual capacity of 25,000 tonnes; the Lebanese company United Steel, with capacity of 25,000 tonnes; Jordanian-owned Rider Steel, with 5,000 tonnes; India's Tema Steel, with 4,500 tonnes; Chinese-owned Ferro Fabrik, with 4,000 tonnes; and local firms Special Steels, with 3,500 tonnes and Western Castings, with 2,000 tonnes. Domestic steel factories are said to employ around 9,000 workers, including 3,000 direct workers in the mills and 6,000 indirect workers, including scrap collectors, dealers and transporters, among others.

INVESTMENT INCENTIVES AND GUARANTEES

Ghana is a safe investment destination. Guarantees against expropriation of private investments provided under law are buttressed by the Ghanaian Constitution. Some investment guarantees are detailed below:

- Free transferability of capital, profits and dividends.
- Insurance against non-commercial risks – Ghana is a signatory to the World Bank's Multilateral Investment Guarantee Agency (MIGA) Convention.
- Double Taxation Agreements (DTAs) – to rationalize tax obligations of investors in order to prevent double taxation. DTAs have been signed and ratified with France and the United Kingdom. DTAs have been signed with Germany, Mauritius and concluded with Belgium, Italy and Yugoslavia.

Registration with GIPC then entitles the Company to enjoy benefits such as:

- Expatriate Quota support to the Ghana Immigration Service
- Import duty exemption on certain equipment and machinery
- Assistance in getting certain utilities such as: electricity, water, telephone connected
- Assistance in getting land
- Other support and recommendation to relevant Government Agencies and Departments for the required permits.

Manufacturing companies also enjoy some benefits based on their location under Income Act, 2015 (Act 896):

LOCATION	RATE OF INCOME TAX
Manufacturing business located in the regional capitals of the country	75 percent of the rate of income tax (25%)
Manufacturing business located elsewhere in the country	50 percent of the rate of income tax (25%)

Table 1: Manufacturing Company's location and rate of income tax.

Incentives enjoyed by registering with Ghana Free Zones Board: There are monetary and non-monetary incentives.

- ***The monetary incentives offered include:***
    a. 100% exemption from payment of direct and indirect duties and levies on all imports for production and exports from free zones.
    b. 100% exemption from payment of income tax on profits for 10 years which will not exceed 8% thereafter.
    c. Total exemption from payment of withholding taxes from dividends arising out of free zone investment.
    d. Relief from double taxation for foreign investors and employees where Ghana has a double taxation agreement with the country of the investors or employees.

- ***Non-monetary incentives include:***

a. No import licensing requirements.
b. Minimal customs formalities.
c. 100% ownership of shares by any investor – foreign or national in a free zone enterprise is allowed
d. There are no conditions or restrictions on repatriation of dividends or net profit, payments for foreign loan servicing, payments of fees and charges for technology transfer agreements and remittance of proceeds from sale of any interest in a free zone investment.
e. Free Zone investors are permitted to operate foreign currency accounts with banks in Ghana.
f. At least 70% of annual production of goods and services of Free Zone Enterprises must be exported, consequently up to 30% of annual production of goods and services of a free zone enterprise are authorized for sale in the local market.
g. Free Zone investments are also guaranteed against nationalization and expropriation

GLOBAL IDEAS/TRENDS

The AFRICA CONTINENTAL FREE TRADE AGREEMENT (AfCFTA)

African heads of government agreed to establish a continental free trade area in 2012 and started negotiations in 2015. The agreement has been signed by most African countries with the exception of Nigeria and South Africa who are big economies in the region. Once signed by all 55-member states of the AU, there will be 1.2 billion people with a combined gross domestic product (GDP) of more than $2 trillion. Within Africa, 43 percent of goods traded are manufactured products. The UN Economic Commission for Africa (UNECA) has estimated the agreement's implementation could increase intra-African trade by 52 percent by 2022, compared with trade levels in 2010. The draft agreement commits countries to removing tariffs on 90 percent of goods, with 10 percent of "sensitive items" to be phased in later. The agreement after ratification, will also liberalise services and tackle so-called "non-tariff barriers" which hamper trade between African countries, such as long delays at the border. Eventually, free movement of people and even a single currency could become part of the free trade area.

3D PRINTING

Also known as additive manufacturing, 3D printing technology produces solid objects from digital designs by building up multiple layers of plastic, resin, or other materials in a precisely determined shape. Early adopters among industrial manufacturing companies are using 3D printing to manufacture parts in small lots for product prototypes, to reduce design- to-manufacturing cycle times, and to dramatically alter the economics of production.

This technology will be more widespread and accepted; while this means the hype will slow down, it also signifies that 3D printing will enter a more established phase. With the number of companies that use this technology growing every year, such as Boeing, Airbus and Ford, 3D printing is likely to be accelerated and applied to many other businesses as well.

The aerospace industry is a leader in the 3D printing technology field; for example, more than a third of the GE turboprop ATP Engine was 3D-printed, meaning it is built of fewer parts than if it wasn’t created through additive manufacturing. The end result is an engine that burns 15% less fuel and delivers 10% higher cruise power compared to others.

ROBOTICS

Over the last decade, China emerged as an automated manufacturing powerhouse, as increased labor costs and booming industrial demand drove tremendous growth in industrial robotics. Since 2013, the number of shipments of multipurpose industrial robots in China roughly doubled to an estimated 75,000 in 2015, with that number forecast to double yet again to 150,000 by 2018, according to the International Federation of Robotics. Yet although a Chinese company recently broke ground on the world's first fully automated factory, in Dongguan, the widespread use of robotics and unmanned control technologies may not address all productivity concerns. Indeed, some manufacturers believe that greater automation is harmful, resulting in less innovation because only people can develop ideas to improve processes and products. Consequently, robotic implementation is evolving on a different path in the U.S. and other mature economies. In many cases, robots are employed to complement rather than replace workers. This concept, known as "cobotics," teams operators and machines in order to make complex parts of the assembly process faster, easier, and safer. Cobotics is rapidly gaining momentum, and successful implementations to date have focused largely on specific ergonomically challenging tasks within the aerospace and automotive industries. But these applications will expand as automation developers introduce more sophisticated sensors and more adaptable, highly functional robotic equipment that will let humans and machines interact deftly on the factory floor.

LEVERAGE DATA AND ANALYTICS IN A NEW BUSINESS MODEL

By upgrading their technical capabilities, industrial manufacturers can bundle a variety of services enabled by connectivity and data, replacing the increasingly outmoded model of selling one big complex machine under warranty and a service agreement for maintenance and repair. These new services can include condition-based maintenance, which involves ongoing real-time monitoring of equipment to determine its maintenance needs; collaboration with customers on a day-to-day basis to customize asset optimization; and predictive performance management for large and small projects and equipment. With this approach, the breadth and value of the services provided by the industrial manufacturer can enhance customer retention and lead to deeper and more lucrative commercial engagements.

INNOVATIVE PRICING

As technology begins to alter the relationship between industrial manufacturers and their customers, the traditional pricing model for the service contract must be changed as well, from pay-for-product to pay-for-performance. This would translate into fewer visits from repair technicians. As a result, customers will naturally expect more favorable terms, which can be facilitated by sharing risk. Instead of basing equipment pricing on products and fixed maintenance or warranty costs, industrial manufacturers should establish fee structures tied to outcomes. For example, the industrial manufacturer may be paid more if equipment downtime is reduced or if an upgrade improves productivity. Some industrial manufacturers — flinching at this drastic shift in pricing structure — will adopt a blended approach, with fixed fees to cover some costs and a variable component based on efficiency and productivity gains realized by the customer.

INTERNET OF THINGS (IOT)

If connected machines — the primary components of the Internet of Things (IoT) — are to be the backbone of industry in the near future, industrial manufacturers will have to figure out how to manage the data coming from an avalanche of sensors, integrated equipment and platforms, and faster information processing systems. There is a critical need to hire people who can mine these bits and bytes of information and work more closely with customers to use the data to improve equipment performance and open new revenue streams. Indeed, the anticipated efficiency returns from digitization over the next five years across all major industrial sectors are substantial: nearly 3 percent in additional revenue and 3.6 percent in reduced costs per year, according to a recent PwC survey of companies. Stanley Black & Decker has adapted the Internet of Things in a plant in Mexico to monitor the status of production lines in real time via mobile devices and Wi-Fi RFID tags. As a result, overall equipment effectiveness has increased by 24 percent, labor utilization by 10 percent, and throughput by 10 percent. By proactively leading the digitization effort, industrial manufacturers can earn a growing portion of these gains. Facing a climate of depressed prices, oil and gas companies are good illustrators of the potential for these improved returns. Instead of building a new well — not viable in the current market — they can squeeze greater production out of existing sites by using more efficient digital control systems and sensor-fed data (such as data on pressure, temperature, and flow rates) to manage the wells more effectively.

DEVELOPING STRATEGIC PARTNERSHIPS — CAREFULLY

Industrial manufacturers must become more active players in the technology ecosystem, seeking expertise outside the industry in order to develop equipment connectivity, data analysis, and software that are beyond their current abilities. For example, recognizing that it cannot grow the ecosystem alone, at least one major industrial company has aligned with a wide range of technology firms to create a dedicated cloud-based platform that can run industrial workplaces. These joint arrangements are necessary because startup technology companies have begun to whittle away at bits and pieces of the Internet of Things' corner of the industrial manufacturing market. But these alliances are not without risk. Leaders have to balance the practice of close collaboration with strategic partners against the need to stay flexible in contracting and partner selection, all while maintaining their hold on their markets. Given the rapid advances of technology, it is possible that a partnership will fall apart because two collaborating companies suddenly realize that their customer base, once distinct, has morphed and they have become direct competitors, vying for the same customers with the same product.

GLOBAL PLAYERS

Table 2: Some leading global players in heavy manufacturing

Company	Description
Caterpillar International	Caterpillar Inc. (NYSE: CAT) is an American corporation which designs, develops, engineers, manufactures, markets and sells machinery, engines, financial products and insurance to customers via a worldwide dealer network. Caterpillar is a leading manufacturer of construction and mining equipment, diesel and natural gas engines, industrial gas turbines and diesel-electric locomotives. With more than US$89 billion in assets, Caterpillar was ranked number one in its industry and number 44 overall in the 2009 Fortune 500. In 2016 Caterpillar was ranked #59 on the Fortune 500 list and #194 on the Global Fortune 500 list. With 2016 sales and revenues of $38.537 billion, Caterpillar is the world's leading manufacturer of construction and mining equipment, diesel and natural gas engines, industrial gas turbines and diesel-electric locomotives
JFE Holdings	JFE Holdings, Inc. (JeiefuīHōrudingusu *Kabushiki-gaisha*) is a corporation headquartered in Tokyo, Japan. It was formed in 2002 by the merger of NKK (*Nippon Kōkan Kabushiki Kaisha*) and Kawasaki Steel Corporation (KawasakiSeitetsu *Kabushiki-gaisha*) JFE's main business is steel production. It also engages in engineering, ship building, real-estate redevelopment, and LSibusiness. The company also operates several overseas subsidiaries, including California Steel Industries in the United States, Fujian Sino-Japan Metal in China, and Minas da Serra Geral in Brazil. Other than steel, they are also known for products such as the bicycle tree. JFE Holdings is the fifth largest steel maker in the world with revenue in excess of US$30 billion. JFE Holdings has several subsidiaries including JFE Engineering, JFE Steel and JFE Shoji.
Heidelberg Cement Group	Heidelberg Cement is a German multinational building materials company headquartered in Heidelberg, Germany. It is a DAX corporation. On 1 July 2016, Heidelberg Cement AG completed the acquisition of a 45% shareholding in Italcementi. With the acquisition, Heidelberg Cement became the number 1 producer of aggregates, the number 2 in cement and number 3 in ready-mixed concrete worldwide. The enlarged Group has activities in around 60 countries with 60,000 employees working at 3,000 production sites. Heidelberg Cement operates 139 cement plants with an annual cement capacity of 176 million tonnes, more than 1,500 ready-mixed concrete production sites, and over 600 aggregates quarries.

ArcelorMittal S.A.	ArcelorMittal S.A. is a Luxembourg-based multinational steel manufacturing corporation headquartered in Boulevard d'Avranches, Luxembourg. It was formed in 2006 from the takeover and merger of Arcelor by Mittal Steel. With annual achievable production capacity of approximately 114 million tonnes of crude steel, and some 210,000 employees across 60 countries, ArcelorMittal is the world's leading steel and mining company. With an annual achievable production capacity of approximately 114 million tonnes of crude steel in 2015. ArcelorMittal's steel shipments in 2015 totaled 84.6 million tonnes. It is ranked 108th in the 2016 Fortune Global 500 ranking of the world's biggest corporations
BASF SE	BASF SE is a German chemical company and the largest producer in the world. The BASF Group comprises subsidiaries and joint ventures in more than 80 countries and operates six integrated production sites and 390 other production sites in Europe, Asia, Australia, the Americas and Africa. Its headquarters is located in Ludwigshafen, Germany. BASF has customers in over 200 countries and supplies products to a wide variety of industries. At the end of 2015, the company employed more than 122,000 people, with over 52,800 in Germany alone. In 2015, BASF posted sales of €70.4 billion and income from operations before special items of about €6.7
Akzo Nobel N.V.	Akzo Nobel N.V., trading as AkzoNobel, is a Dutch multinational company, which creates everyday essentials. AkzoNobel is a leading global paints and performance coatings company and major producer of specialty chemicals, supplying essential ingredients, essential protection and essential colour to industries and consumers worldwide. Headquartered in Amsterdam, the company has activities in more than 80 countries, and employs approximately 46,000 people. Sales in 2016 were $16.33 billion

GHANA'S UNIQUE ATTRACTION AND COMPETITIVE ADVANTAGE

- **Stable Political Environment**

  Ghana is a politically stable country. Ghana has one of the longest traditions of robust democracy on the continent. Ghana has experienced five successful elections in the fourth republic.

- **Macro-economic Policies**

  The Government of Ghana has initiated a number of sound macroeconomic policies designed to accelerate the process of growth and transformation of the economy under competitive conditions. The rate of inflation is relatively stable around 9.6% as at July, 2018. Management and access to foreign exchange in Ghana continues to get better.

- **Foreign Ownership**
  In the on-going privatization program, hundred per cent (100%) foreign ownership is permitted.
- **Access to ECOWAS Market**
  Ghana is easily accessible to markets of all member states of the Economic Community of West African States (ECOWAS) with its population of approximately 300 million people.
- **Excellent Labour Force**
  There is a large human resource base of both skilled and unskilled labour which can be sourced at relatively low rates. The current minimum wage in Ghana is GH₵ 10.65
- **Good Physical Infrastructure**
  Ghana possesses well developed seaports, airports and road networks capable of meeting the needs of businesses in the 21^{st} century. There is an effort to upgrade rail network to make it easy to get to the ports from inland. Telecommunications facilities in Ghana are excellent with more private service providers offering telephone, internet and other telecommunication services. Basic utilities such as water and electricity are readily available at relatively affordable rates.
- **Access to International Markets**
  Ghana has easy access to the USA and European Union Markets. The flight time to almost all European Union countries is about 6 hours and 9 hours to the USA.
- **Availability of Fund Sources**
  Ghana has a large number of fast developing institutions available to raise long-term capital at competitive rates. These institutions include banks, insurance and venture capital companies and a stock exchange market (Ghana Stock Exchange).
- **High Safety Standard**
  There are high standards of health and safety measures in the country
- **Warm and Friendly People**
  Ghana is internationally acclaimed for her hospitality to her investors and foreigners as a whole.
- **Availability of Land**
  Ghana has a wide expanse of land that can be acquired with little difficulty through appropriate agencies and owners.

SOME INTERNATIONAL RANKINGS OF GHANA

Table 3: International rankings of Ghana

INTERNATIONAL RANKINGS	
INDEX/REPORT	**RANK**
Ibrahim Index of African Governance (IIAG) 2016	*-8th out of 54 countries in Africa* *And -6th out of 54 countries for Safety and Rule of Law* *-11th out of 54 countries for Human Development*
A.T. Kearney Global Services Location Index (GSLI), *2016*	*No. 1 destination in Sub-Saharan Africa, 2016*
RMB Global Market Research 2017	*4th Best Place to invest in Africa*

SPECIFIC INVESTMENT OPPORTUNITIES

Chemicals

Investment opportunities can be found in the production of Polyvinyl Chloride resin from ethyl alcohol, formaldehyde from methanol, melanine and urea, mixing and granulating of fertilisers, cuprous ox chloride for coffee bean disease, caustic soda and chlorine-based products, carbon black, activated carbon, precipitated calcium carbonate, textile dyestuff, ink for ball points and gelatin capsules, among other things.

Pharmaceuticals

The increasing access to healthcare in Ghana resulting from universal health insurance schemes coupled with improved distribution chain and other healthcare policies has resulted into high demand for pharmaceutical products. Most of pharmaceutical products are imported. Investment opportunities exist in the manufacture of drugs for the treatment of various tropical diseases, the provision of modern family-planning services, and the manufacture of medical equipment and sundries. The rich biodiversity of the country also provides an opportunity in the processing of herbal medicines. The processing of pyrethrum extracts and the production of vaccines, antibiotics and vitamins also offer investment opportunities.

Iron, Steel and other Metals

Opportunities exist in the development of nucleus foundry making precision castings that can then be processed into precision components, aluminum cans, high-strength reinforcement bars, ductile iron rolls, casting sand and moulding. Opportunities also exist for investment in the mining of iron ore to supply the existing steel mills, the production of sponge iron for steel mills and the production of steel products.

Construction materials:

Ghana's building and construction industry has rapidly grown in the past couple of years with both Government and private sector engaged in the construction of buildings and roads infrastructure. This has resulted into high demand for construction materials mainly: cement, electric cables, steel materials, Clay products (tiles, bricks, and paving blocks), float, glass and paints.

POTENTIAL SOURCES OF FUNDING

Viable companies and projects can easily attract financing both on the local and international financial markets. The main sources of funding are:

- 31 Licensed Banks
- 70 Non-bank Financial Institutions
- 140 Rural banks with 137 fully operational.
- The Ghana Stock Exchange – note that in the last four years, many issues of shares on the GSE have been oversubscribed by100% - 300%, meaning that there is a lot of money for investment purposes
- Ghana Venture Capital Fund
- International development finance institutions based in Ghana such as the International Finance Corporation (IFC) and the African Development Bank (AfDB)

A number of foreign financial institutions also provide off-shore financing directly to companies in Ghana.