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Recent Economic Analysis Meant Ramification of Covid-19 on Indian Pharmaceutical Sector - Short Review

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ABSTRACT

The unexpected outbreak of covid-19 from Wuhan, Hubei district, china to all parts of the world has demonstrated its impact on every division, for instance, trade, adventures, human administrations portion, and various others and taking into account that those countries which were outstandingly depended upon china concerning rough material for the collecting of product may persevere through an exceptional setback is not all that far off future. The Indian pharmaceutical sector is one of those sectors which are at such high risk as most of the raw material for the production of generic drugs used to come from Chinese traders. Because of that the trade turnover or the residential turnover of these organizations may confront an extreme drop. Be that as it may, the Indian government consistently attempted to inspire the pharmaceutical area by taking various approaches, what's more, making systems. This review will highlight and give insight into the history and the ramification of covid-19 on Indian pharmaceuticals firms.

INTRODUCTION

The Indian pharmaceutical sector is the largest sector which employs around 2.86 million people via direct or indirect way[1]. In 2019 the domestic turnover of this sector was approximately US$20.03 billion. Globally the Indian pharmaceutical sector is one of the largest providers of generic medicines and accounts for 20% of the generic medicine globally[2]. As per data, this sector fulfills the demand of around 40% of generic medicine in the US and 25% of generic medicine in the UK. Interestingly 80-90% of antiretroviral drugs which are used to treat AIDS are globally supplied by Indian companies[3,4,5]. Also, around 60% of the world vaccine productions are done by India only and around 40-70% of vaccine demands made by WHO for different diseases like Diphtheria, Tetanus, and Pertussis (DPT), and Bacillus Calmette–Guérin (BCG) are also fulfilled by Indian only[6].

However, the recent outbreak of the novel coronavirus also known as covid-19 which was first appeared in Wuhan, Hubei province, china in the late December of 2019 has now spread around the whole world[7,8]. As a result of that, not only the lives of people but also the economy of the nations has suffered a lot and still suffering. The virus outbreak had made its impact on different sectors of India also in which of them is the pharmaceutical sector[9]. As this sector is one of the important sectors in terms of market size, revenue, and healthcare from which the export revenue was of around Rs.12000 Cr per month has now faced some trouble because of the impact of covid-19[4,10].

History

The history of the Indian pharmaceutical sector can broadly divide into four parts:-

1) The first epoch (1805-1945) also termed as pre-independence phase
2) The second epoch (1945-the 1970s) also termed as post-independence phase
3) The third epoch (the 1980s to early 1990s)
4) The fourth epoch (the 1990s- to present time)

I. Pre-Independence Phase

The history of the Indian pharmaceutical industry finds its roots before the independence of India where the indigenous forms of medicine like Ayurvedic and Unani were used. It was the central government of British India that first introduced allopathic medicines in the country. However, the country did not have any production unit during that period on the contrary the raw material was used to be exported to foreign firms and the finished product was used to be imported.[11] In 1892 through the vision and enterprise of Dr. Prafulla Chandra Roy established the Bengal chemical and pharmaceutical work which in 1901 became a public sector. Along with that other firms like Bengal Immunity Company, limited and company's chemical work, and many other companies were also established during that phase[9]. However, these companies' production capacity was very less and were hardly able to meet 13% of the country's needs. This situation was changed when the Second World War happened as during that phase the drug supply from the foreign firms dropped drastically which act as a boost for the Indian firms. Also during that phase, many new Indian companies like Unichem, Chemo Pharma, Zandu Pharmaceutical Works, Calcutta Chemicals, Standard Chemicals, Chemical Industrial and Pharmaceutical Laboratories (now known as Cipla), East India Pharmaceutical Works, and others were established as a result of which the production of drug rapidly increased and was able to meet the 70% of the country demand. During this phase, the companies were involved in related activities but the value of R&D was still not discovered by them it was only the scientists who invented the drug the companies don't play any role in that[12].

II. Post-Independence Phase

This phase was also called the therapeutic revolution which was started in 1945 to approx. The 1970s. In this phase, there was a shift that took place that was from treating the symptoms to directly treating the disease itself because of this the companies around the globe went through changes from being only a production unit to investing in R&D was done during this phase. However, the Indian firms were untouched by this revolution because of the lack of technology, capital, and support from the government[12].

The two important growth components during that phase for the Indian pharmaceutical firms were the manufacturing facilities and foreign technology. By taking those things into account in 1948 government of India in its industrial policy statement decided to act liberal towards the MNCs and also permitted the grant to establish plant without facing and difficulty for licensing agreements. As a result of such decisions, the sector witnessed exponential growth. In 1947 the drug production was just Rs.10 crore which by the end of 1952 reached Rs.35 crore showing the growth of 3.5 times[12].

Despite taking such a decision the MNCs didn't establish any production plants in India. However, they made India their assembling ground where the bulk drugs were assembled.

The reason for such activities was because of the investment in plant and machinery whereas importing and processing bulk drugs into formulation was a much more profitable business[12].

To succeed in that problem the government of India in its industrial licensing policy of 1956 made it necessary that the MNCs must set up their production unit in India and manufacture the drug from the basic level. Hence to meet the regulatory requirements many MNCs established their production unit in India. This policy also helped domestic companies to enter the market and produce a wide range of products.

As a result of such policy from 1952 to 1962, the drug production in industry hiked up from Rs.35 crore to Rs.100 crore also the capital investment which was Rs.23 crore in 1952 hiked up to Rs.56 crore in 1962[12].

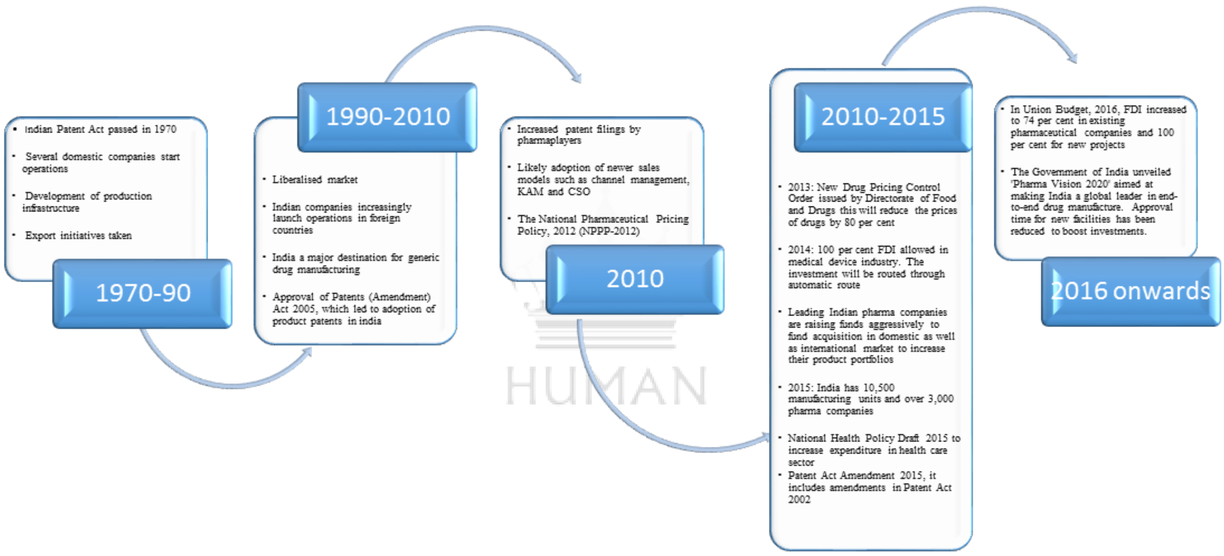

Figure No. 1: Timeline presentation of the evolution of the Indian pharmaceutical sector[4].

The Global Market Statics

The trade barriers were one of the important parameters which hindered the growth of the Indian pharmaceutical sector as these barriers made the export restricted and also causing the problem to set up the production unit on foreign land.

To remove such trade barriers the government of India made some liberal policies that supported and opened new opportunities for a large number of firms and industries. These policies helped the pharmaceutical sector to export and set up production units on foreign land flexibly. Hence, because of such decisions, a marked growth of internationalization of Indian pharmaceutical companies was observed in fig.1, the graph depicts the average export and import intensity of the Indian pharmaceutical sector[12].

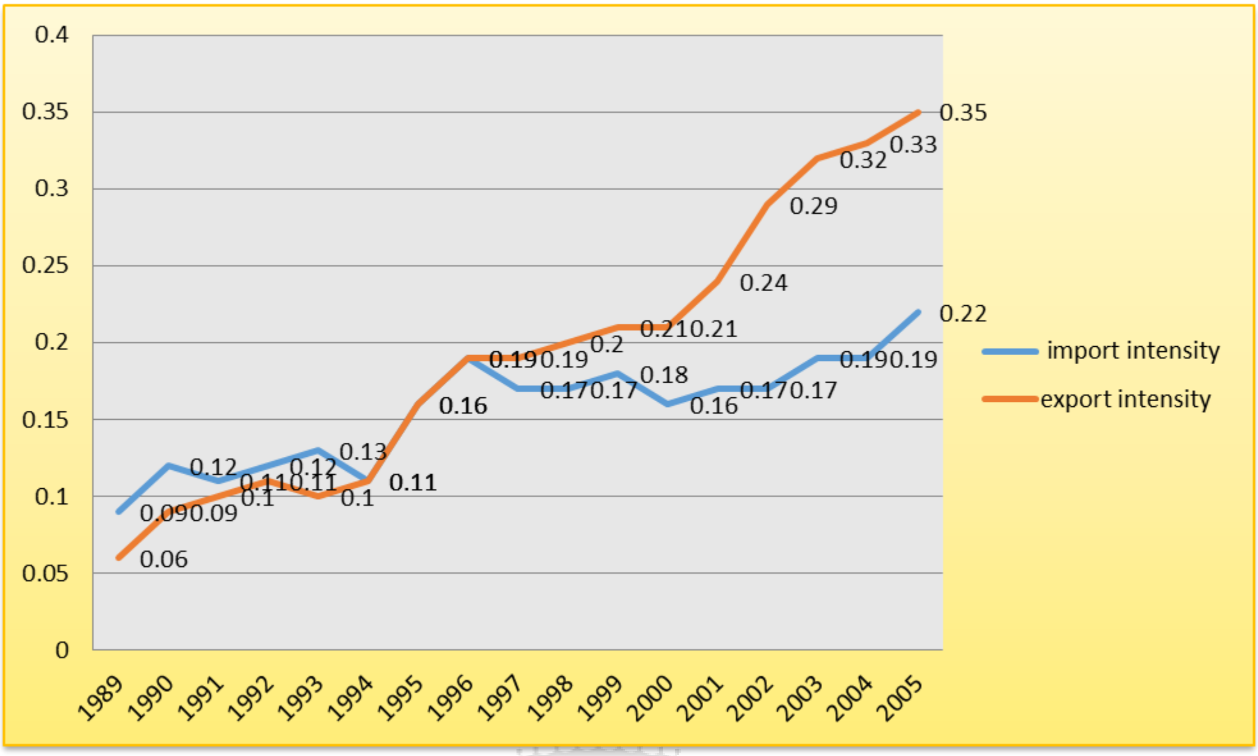

Figure No. 2: Import-export intensity of pharmaceutical sector of India during 1989-2005[12].

API Dependence on China

API that is active pharmaceutical ingredients are those chemical ingredients that have their use in the finished or final dosage form[13]. They are the key element in the manufacture of any drug. Most of the APIs are produced and sold by china as the cost of APIs is low compare to the other nations. Interestingly the Indian pharmaceutical companies obtain almost 70% of the APIs from China. However, this dependence on APIs came because the Indian drug makers moved into formulation production and also because of the low-cost APIs produced by china which causes disturbance in the market[14-16].

As most of such APIs are primarily manufactured in the Hubei province of china whose capital city Wuhan was the epicenter of the covid-19 outbreak because of which the trade of APIs got hindered a lot which directly impacted the Indian pharmaceutical firms as most of the starting materials was used to obtain from china. The dependency of Indian pharmaceutical firms on china was highly in the limelight because India uses Chinese raw material to produce one-fifth of medicines that were supplied to the world[14]. However, it was not always that India was that much dependent on china as in 1991 only 0.3% of APIs were imported from china[16].

Decision and Strategy of Indian Government and Pharmaceutical Firms

The dependence of Indian pharmaceutical firms on Chinese APIs was seen as an increasing matter of health security and therefore to reduce this dependency in 2018 the government of India made a task force whose work was to revive the API sector of India. Hence, over the period the Indian government had many high-level meetings with the key representative of India's pharmaceutical industry to establish the API manufacturing capacity in India. However, the suggestions like speeding up approvals for building factories, including the important clearance from the environment ministry, giving some relaxation on electricity, and promoting the pharmaceutical manufacturing hubs were some suggestions given by the Indian think tank during the one meeting conducted by NITI aayog[16].

Since most of the APIs were used to supply by china but due to the recent outbreak of covid-19, there was a shortage of Chinese raw material in the market. The suggestion to use this situation as an advantage was suggested by many Industry experts. The Indian government also started to take some materialize policy so the production of raw material can be increased in Indian. These decisions can eventually help India to become an alternative supplier of raw materials in the world[14].

However, the positions of Indian API companies are in such a position that they can leverage the situation and can also enhance their standing in the API industry. One such company is Divis laboratories which are recognized by financial markets because of its trading market capitalization which is 10X times higher than the generic companies. Along with Divis laboratories, many other upcoming Indian API suppliers which are led by MSN labs are also there whose focus is to develop a large number of niches and also to supply low competition APIs to the regulated market. Also in India, the cost of operation is 10-20% higher than in china it is expected that there will be a rise in the price of APIs and their intermediates[15,17,18].

Figure No. 3: Decision which could be taken to promote Indian API sector[19].

Generic Drug

The generic drugs are identical and bioequivalent to the branded dosage forms, safety, strength, quality, route of administration and are marketed when the patent of a drug expires or when the marketing rights of the patent drugs are expired. However, the generic drug also needs approval from the different controlling authorities of a country[20].

The main advantage that generic drugs have over the branded drugs is that they are cheaper compare to branded ones. The reason behind this cheaper cost is that a generic drug doesn't have to invest in the research and development of any new drug. It generally takes 10 to 12 years for the development of a new drug and the investment behind that development can be around $1.5 billion. Interestingly only 26 new drug entities come into the market every year and therefore to award that time given in the research and development the monopoly is allowed to them in the form of patent protection for a limited period. The low cost of the generic drug while maintaining the quality helps the patients to afford them. This factor about the generic drug is very crucial when we talk about a disease like AIDS or cancer which are widespread and too in developing nations where the treatment with patented drugs are highly charged[20,21,22].

As the Indian pharmaceutical sector is one of the largest providers of generic drugs and accounts for around 20% of the generic drugs globally and also fulfills the demand of 40% generic medicine in the US and 25% in the UK. Interestingly, the export of generic drugs from India was about $19 billion last year which clearly shows that the generic drug market is very important in terms of revenue also[2,3,4]. However, the recent outbreak of covid-19 which resulted in the shutdown of industries in china may affect this generic drug market as 70% of APIs which are used to produce drugs are imported from china[14,23]. To combat this problem Indian government tried to revive the Indian APIs industries by making some policies that may help to generic drug market to sustain and also to some extent make India self-efficient[15,16].

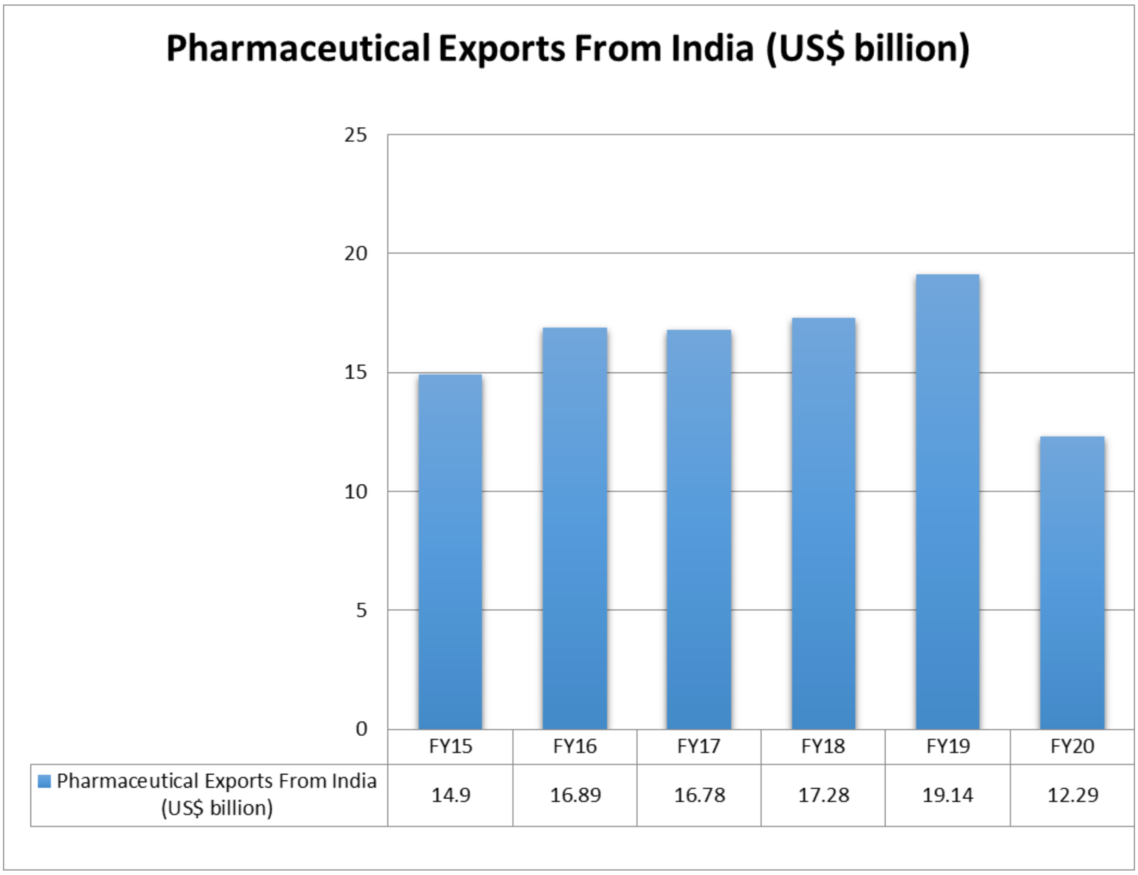

Figure No. 4: graphical representation of pharmaceutical exports from India (US$ billion) (note this data is up to January 2020)*[4]*.

SUMMARY

The policies taken by the government of India helped the pharmaceutical firms from the pre-independence era to develop and because of those policies only today, the Indian pharmaceutical firms are billion-dollar revenue contributors. The impact of covid-19 may have hampered this sector by hindering the trade of raw material from china as most drug makers in India use Chinese raw material but the counter strategies taken by the government like reviving the API sector by taking a decision and making policies that encourage them to expand their production will not only help the Indian drug makers but can also make India the alternative supplier of API or raw material to the world. This impact of covid-19 can make India self-efficient in terms of API production and will boast the health security of the nation and can also shift the dominance from Chinese pharmaceutical firms to Indian pharmaceuticals firms.

CONFLICT OF INTEREST: The authors have no conflicts of interest to declare.

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