US 100-Day Reviews under Executives Order 14017: A Critical Evaluation in the Context of India

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US 100-Day Reviews under Executives Order 14017: A Critical Evaluation in the Context of India

Arghya Nandi[1] and Badri Narayanan[2]

Abstract:

We examine the critical issues regarding the new supply chain policy recommendations of the USA and discuss the potential impacts that India might be suffered from. First, we discuss all of the US government's recommendations given by the four different Departments (Department of Commerce, Department of Energy, Department of Defense, and Department of Health and Human Services). To develop a brief idea about the recent scenario of the US supply chain, we analyze the US data related to trade share concerning global trade and have discussed the recent statistics of the US balance of payment (BOP) account. Then we critically examine the US-India bilateral trade data to describe the policy recommendations' potential impacts. As the major dependency of the USA to India is in the pharmaceutical sectors, we have done a graphical analysis of this sector. The impacts can be classified into short-run and long-run impacts. The study concludes that even if India has a short-term comparative advantage over the USA because of the huge burden of debt of this global powerhouse, there might be a possibility that the white house can eliminate this dependency in the long run.

Keywords: Trade relations, bilateral, global crisis, India and USA, supply chain assessment.

Introduction and Motivation:

The India-US bilateral relationship has developed into a global strategic partnership. The value of this partnership is increasing day-by-day based on shared democratic values and increasing convergence of interests on bilateral, regional, and global issues. During the first two

[1] Research Assistant, Infinite Sum Modelling LLC, Seattle.
[2] Founder and Director, Infinite Sum Modelling LLC, Seattle.

summits of Prime Minister Modi and President Obama in September 2014 and January 2015, the Govt. of India has created an opportunity to reinvigorate bilateral ties and enhance cooperation under the motto --- "Sanjha Prayas, Sab ka Vikas" (Shared Effort, Progress for All) and “Chalein Saath Saath” (Forward Together We Go). Though the India-US bilateral relationship is smoothly increasing, the answer to the question of whether the recent supply chain policy recommendations strengthening the trade relations between these two countries is still interesting to find it out.

The ministry of external affairs (MEA), India has published a report (June 2017) where strategic relationships between these two countries like political relations, civil nuclear co-operation, defense cooperation, Counter-terrorism, internal security, and Trade and Economic relations has been discussed. The Ph.D. Research Bureau (July 2020) published an article “INDIA US TRADE: Renewed and Resilient Relationship” where they concluded, “The renewed relationship of India and the USA under the aegis of Prime Minister Shri Narendra Modi and President Donald Trump, will surely move towards an augmented trade future between India and USA.” The situation has changed as the recent presidential election result of the USA shifted its fate from Donald Trump to Joe Biden and the democratic party came in power. The recently announced supply chain policy surely has the potential to deviate from the conclusion made by the previously stated article.

Another source of deviation may come from the recent global crisis made by the coronavirus. COVID-19 has taught the world a lesson about the importance of a resilient supply chain. The global pandemic has disclosed the vulnerability of each country despite their pride in nationalism. Biden administration’s recently announced supply chain policies can be viewed as a silver lining for the USA, but these policies’ exact effect remains unknown. The pharmaceutical sector has been chosen as a typical case to be examined to analyze the possible impacts of the recommended supply chain policies.

In this paper, the graphical analysis of yearly trade statistics has been done to find the potential scope and possible impacts in bilateral trade relations for both countries.
Firstly, we have described the policy recommendations from the four departments of the US government namely, the Department of Commerce, Department of Energy, Department of Defense, Department of Health and Human Science.

In the next section of our analysis, we have analyzed the dependency of the USA on global trade, especially the dependency of pharmaceutical products on India’s export. We have shown the recent trade statistics of the USA for the volume of global trade. The trend of the balance of trade data of US-India bilateral trade has been critically analyzed. We have segregated different kinds of pharmaceutical products and have shown the volume of imports of the USA for the same. The concluding section of our analysis covers the answer to our research question where we have tried to discover the potential for both the countries and the future of the bilateral trade between these two global markets.

In The Plate of 100-Days Supply Chain Review:

The comprehensive 100-days’ supply chain assessment critically evaluated the state of the four critical products namely semiconductor manufacturing and advanced packaging, large capacity batteries, critical minerals and materials, pharmaceutical and active pharmaceutical ingredients. The review has been given by the four different departments of the US government as follows. The review on semiconductor manufacturing and advanced packaging has been given by the Department of Commerce. The Department of Energy reviews the sector of large-capacity

batteries whereas the Department of Defense has reviewed the critical minerals and materials. pharmaceutical and active pharmaceutical ingredients have been reviewed by the Department of Health and Human Science.

The first section of the review covers semiconductor manufacturing and advanced packaging. It has been mentioned that the US semiconductor industry accounts for nearly half of global semiconductor revenue but the share of semiconductor manufacturing capacity on U.S. soil has fallen from 37 percent to 12 percent of global production in the last 20 years. The review indicates that the cause of their worry is the geographical concentration of semiconductor manufacturing, especially in Asia. This report examines the semiconductor supply chain through five related essential segments: (1) design; (2) fabrication; (3) assembly, test, and packaging (ATP) and advanced packaging; (4) materials; and (5) manufacturing equipment where the high dependency on sales to China for continued profit growth and domestic research and development (R&D) investment, Taiwan for leading-edge logic chips, Taiwan, South Korea, and China to meet the demand for mature node chips and the concentration of lithography production sector in the Netherland and Japan has been taken into account. This review has mentioned eight cross-cutting risks to semiconductor supply chains namely fragile supply chains, malicious supply chain disruptions, use of obsolete and generations-old semiconductors and related challenges for continued profitability of companies in the supply chain, customer concentration and geopolitical factors, electronics production network effects, human capital gaps, IP theft and challenges in capturing the benefits of innovation and aligning private and public interests. To eliminate these kinds of risks, the department of commerce has recommended promoting long-term US leadership by the process of full funding towards the CHIPS for America and strengthening the domestic semiconductor manufacturing sectors through the support towards key upstream—including semiconductor manufacturing equipment, materials, and gases—and downstream industries to offset high operational costs in the United States. Protection of the U.S. Technological Advantage in Semiconductor Manufacturing and Advanced Packaging by ensuring that export controls support policy has also been taken into account. The foreign collaboration and investment for semiconductor sectors have been highly welcomed in this report.

The second section of this report covers large-capacity batteries. The department of energy stated that China and the European Union, in contrast to the US approach have developed and deployed various government-led industrial policies that are supporting their success story across the battery supply chain. Critical materials for high-capacity lithium-ion batteries – particularly Class I nickel, lithium, and cobalt – as primary upstream supply chain vulnerabilities have been highlighted in this report. A bunch of ideas has been developed where the major focus is on stimulating the demand for the end products using domestically manufactured high-capacity batteries and strengthening the supply chain of advanced battery minerals through investment towards nickel refining and global cooperation. One lucrative idea of this report is to maintain the sustainable domestic extraction of minerals and promote sustainable domestic battery materials, cell, and pack production by catalyzing the investment and introducing supportive tax credit. Increased funding for R&D to expand uptake and reduce supply chain vulnerabilities has also been recommended. It has been estimated that EV battery recycling alone can reduce cumulative cobalt demand for global EV fleets through 2050 by 26-44 percent.

The third section of this review covers the review on critical minerals and materials given by the Department of Defense. This report entails the concerns of sustainability in the era of trade liberalization. The Department of Defense mentioned, **"Economic efficiency took priority over diversity and sustainability of supply—made manifest in the slow erosion of manufacturing**

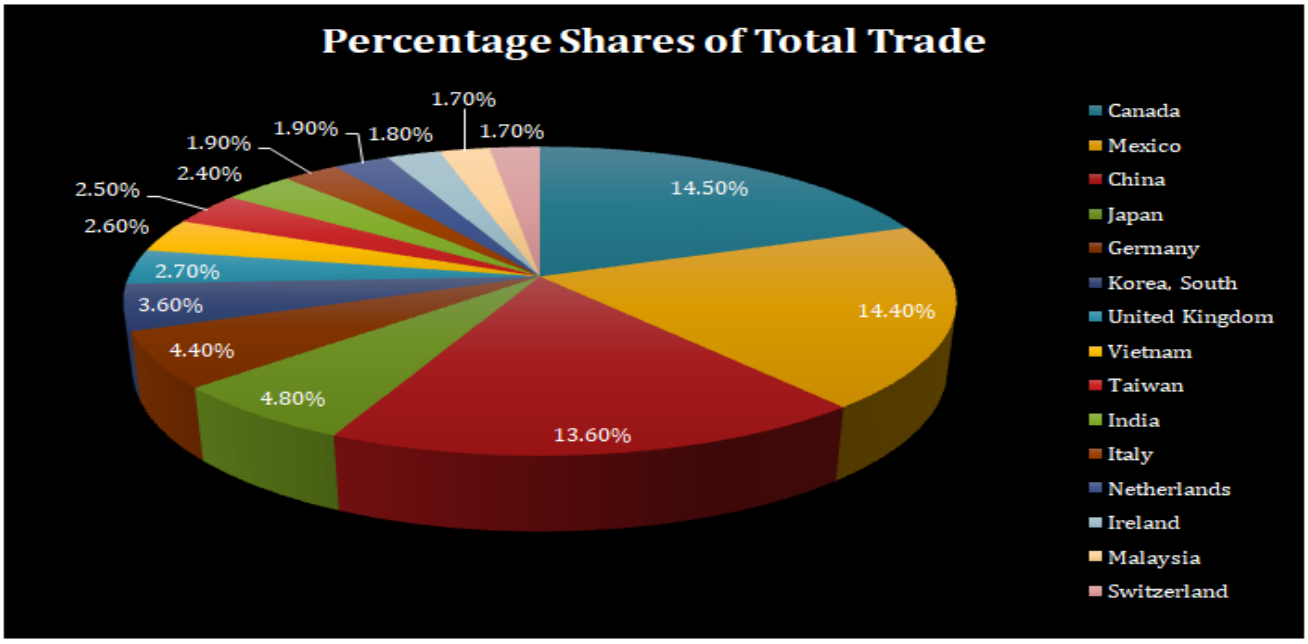
capabilities throughout the United States and many other nations. In addition, as the point of consumption drifted further and farther from the point of production, U.S. manufacturers increasingly lost visibility into the risk accumulating in their supply chains."

The report has recommended driving a global market change towards the value of environmentally and socially responsible production. Collaboration with the states, tribal nations, and non-governmental organizations has been suggested. This report has mentioned that National Minerals Information Centre (NMIC) funding has declined by 37 percent in real dollar over the past 25 years and has suggested establishing a new interagency task force to develop a material-by-material plan to identify specific locations of key strategic and critical materials in the United States that could be sustainably produced domestically. It has also included the deployment of DPA and other programs to incentivize production across the supply chain, including downstream, high value-added manufacturing such as new magnet capabilities and advanced electric motor designs.

The last section of 100 days reviews consists of the report of pharmaceuticals and pharmaceuticals ingredients by the Department of Health and Human Services. The major focus of this section is to improve transparency and increase the economic sustainability of the U.S. and allied drug manufacturing and distribution. The report also suggested boosting local production and fostering international cooperation. In addition to this, the report recommends various investment and financial incentives to boost production.

The Current State of Global Trade

According to the Trade Statistics for International Business Development the USA has exported 17,142,104,584 USD whereas the volume of imports is 17,469,276,741 USD. The major participants of this bilateral trade were Canada (14.5%), Mexico (14.40%), and China (13.60%). The trade balance is continuously worsening off with China, European Union, India, and some of the other countries.



Source: Trade Map- Trade statistics for international business development

US semiconductor industry is a major source of export with $47 billion in export sales in 2020. Semiconductor Industry Association has estimated that the global semiconductor market will reach $726 billion in annual sales by 2027 with a compound growth rate of 4.7%. The major problem lies in losing the market share of semiconductors from 37% in 1990 to only 12% in 2019. Taiwan subsidy policies towards fabrication facilities for semiconductor chips give 50% subsidy for land cost, 45% for construction and facilities, and 25% for semiconductors, in addition to R&D investments and other incentives. As a result, Taiwan (20%) accounts as the global leader in semiconductors' global installed capacity followed by South Korea (19%), Japan (17%), and China (16%).

	Balance			Exports			Imports		
	Total	Goods (1)	Services	Total	Goods (1)	Services	Total	Goods (1)	Services
2019 (Jan. - Dec).	-5,76,34	-8,61,51	2,85,174	25,28,36	16,52,07	8,76,295	31,04,70	25,13,58	5,91,121
2020 (Jan. - Dec.)	-6,76,68	-9,22,02	2,45,342	21,34,44	14,28,79	7,05,643	28,11,12	23,50,82	4,60,301
2021 (Jan. - May)	-3,53,07	-4,44,50	91,434	9,95,172	6,99,196	2,95,976	13,48,24	11,43,70	2,04,542

Source: Trade Map- Trade statistics for international business development

Coming to the statistics of large-capacity batteries, total global nickel reserves are estimated at approximately 94 million metric tons whereas Australia and Indonesia share around 20 million metric tons each followed by Brazil (16Mt). The USA has a very small deposit of nickel with a volume of production of only 0.016 million metric tons in 2020. The department of energy has expressed their worry about the critical vulnerability to the future of the U.S domestic auto industry by stating China's global share in refining lithium (60%) and cobalt (80%). In the case of pharmaceutical products, India accounts for the largest share (29%) of active pharmaceutical ingredients (API) followed by the EU (27%) and China (16%). The USA has a huge trade deficit of $85millions with the resort of the world.

Impacts on Global Supply Chain:

A. **Climate Risks and Sustainability:** Any country's resilience to climate change depends on its risk management approach, business plan, and the structure of the governance. Convening industry stakeholders to expand production and developing new sustainability standards for domestic production simultaneously may lead to nothing.

   A report published by Mckinsey & Company has found that the probability of a hurricane of sufficient intensity to disrupt the semiconductor supply chain may grow two to four percent by 2040 and disruption of the heavy rare earth production from extreme rainfall may increase 2 to 3 times by 2030. The recently recommended policies for semiconductor manufacturing and resilience do not take into consideration these analyses. Promotion of investment with transparency and collaboration and funding the CHIPS for America provision to promote long-term US leadership can be pointed out as major advancement but one can't ignore the vulnerabilities of upcoming future.

B. **Long Term Resilience:** Typically, a more specialized supply chain may lead to the severity for a downstream player as the supply of critical input may only be available from the source that has been disrupted. The USA has successfully responded to this issue. The planning for deploying the DPA and other programs (DPA gives the President the authority to issue grants, loans, loan guarantees, and other economic incentives to establish industrial capacity, subsidize markets, and acquire materials) is one of the most attractive parts for the same. The policies related to infrastructure development are great initiation towards resilience and the idea of the development of the rating system has the potential to increase the quality and global competitiveness. Improvement of supply chain transparency is a good policy measure in pen and paper but the exact implementation of these rules is hard to find in reality. Especially in the era of globalization, where the countries and the companies are solely motivated for market capitalization, the chance of coalition game is hardly possible. The report has also cited the threat of geographic concentration of key supply chains in the world. The recommendation of 50 billion USD investment in advance domestic manufacturing of leading age semiconductors and to support critical manufacturing industries may sound good on paper but neutralize the 92% dominance in Taiwan's global market and geographical advantages for semiconductor production between rock and a hard place. The supply chain policies have a clear motive for tackling down this dominance but the policymakers should think outside the box to get a certain result.

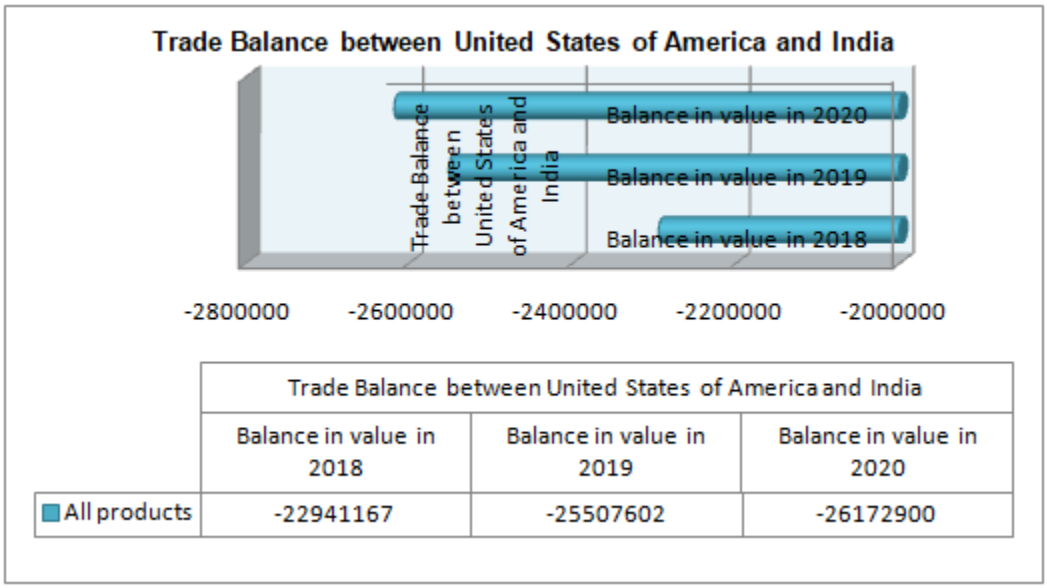
C. **The Risk of Inflation:** One major risk associated with this kind of policymaking especially in the time of the COVID-19 crisis is the risk associated with inflation. As the government has already been launched various relief package to deal with the recent crisis, the expected inflation rate may already in an upward trend. As a result, the package to implement various kinds of demand-side policy measures to develop supply chain resilience may incentivize the existed risk.

Research And Development: Improvement of R&D to develop a sustainable economy is one of the Nobel approaches of the report. Research and development are the fuel to drive an economy. Suggested tax incentives, conditional loans, and loan guarantee schemes can incentivize the producers to achieve the target labels. R&D investment can mitigate the

negative effect of supply chain disruption but one thing the manager should keep in mind is that supply chain disruption has different impacts on supply chain performance and firms' performance outcomes. The negative impacts of misinterpretation of the weightage for a particular type of outcome can outperform the positive impacts of R&D investments. So, to what extent the positive impacts will be spread is somehow not only dependent on the policy implementations but also the managerial efficacy.

In The Plate of India:

The recent statistics of India-USA bilateral trade entails that India has a positive trade balance with the USA and the major source of gains from trade is coming from the pharmaceutical industries.



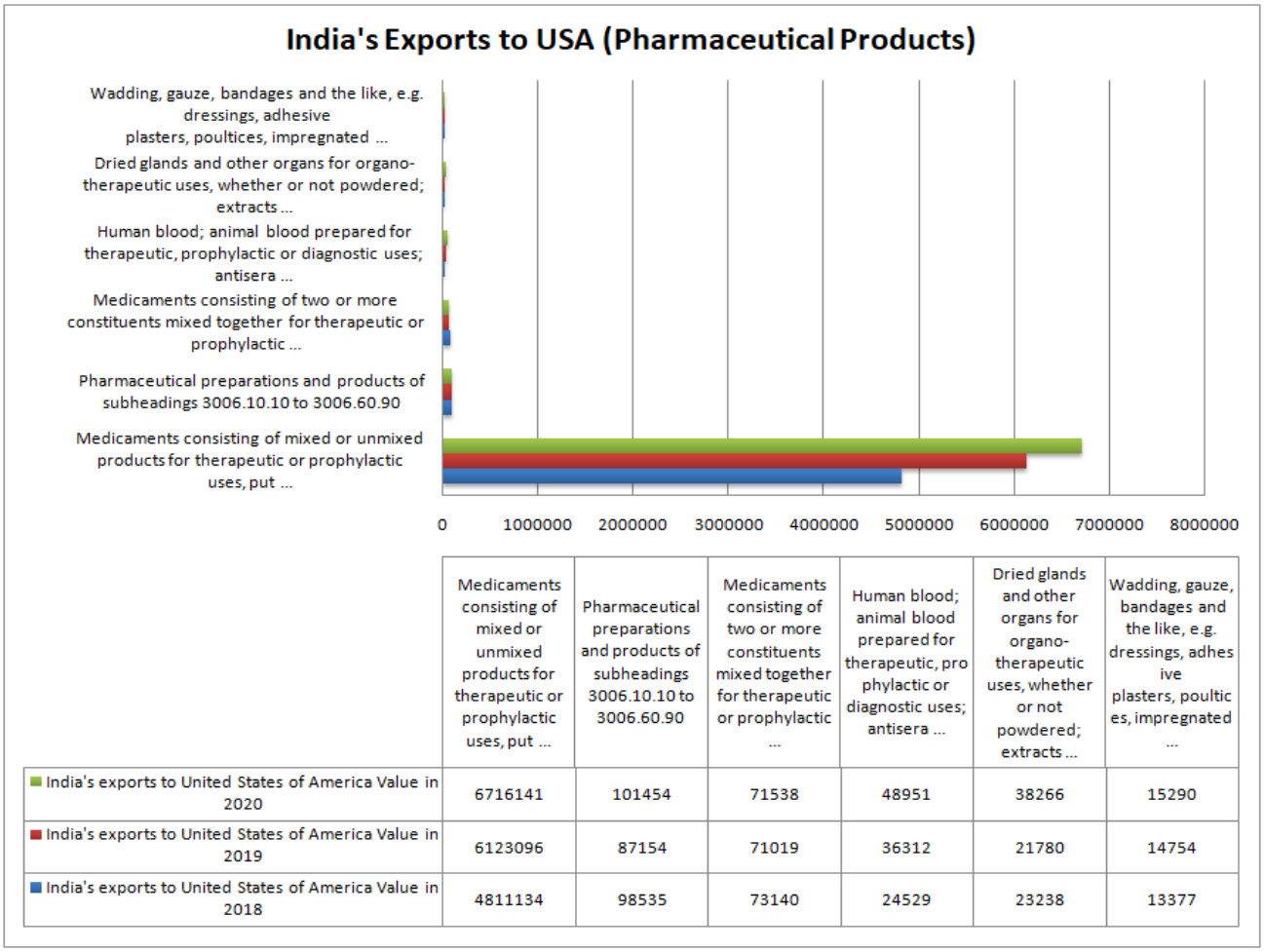
	Trade Balance between United States of America and India		
	Balance in value in 2018	Balance in value in 2019	Balance in value in 2020
All products	-22941167	-25507602	-26172900

Source: United States Census Bureau (Foreign Trade Data)

In the report of 100 days' supply chain review, it has been stated that for all FDA-regulated drugs, 73 percent of manufacturing facilities producing APIs are located outside the United States whereas, for generic drugs (approved under ANDAs), 63 percent of FDF manufacturing facilities are located outside the United States. On the other hand, India has 19% of the world's manufacturing facilities producing APIs and 26% of FDF manufacturing facilities for generic drugs.

The white house has expressed its concern regarding the fact that U.S. and allied drug manufacturing, especially for generics and common drugs, is often undercut by foreign competition, particularly from India and China. The report has recommended providing predictability in production cost, pricing and volume sold. An increase in government and private sectors' flexibility in contracting and sourcing finished drugs and raw materials and studying whether the current market for finished drugs supports diversification of supply instead of relying on one or two suppliers through preferred contractual arrangements has also been suggested.

India has a positive trade balance in terms of pharmaceutical industries where the export of Medicaments consisting of mixed or unmixed products for therapeutic or prophylactic uses occupies the largest share (6716141 USD in 2020) of total pharmaceutical products exported from India.



	Medicaments consisting of mixed or unmixed products for therapeutic or prophylactic uses, put ...	Pharmaceutical preparations and products of subheadings 3006.10.10 to 3006.60.90	Medicaments consisting of two or more constituents mixed together for therapeutic or prophylactic ...	Human blood; animal blood prepared for therapeutic, prophylactic or diagnostic uses; antisera ...	Dried glands and other organs for organo-therapeutic uses, whether or not powdered; extracts ...	Wadding, gauze, bandages and the like, e.g. dressings, adhesive plasters, poultices, impregnated ...
India's exports to United States of America Value in 2020	6716141	101454	71538	48951	38266	15290
India's exports to United States of America Value in 2019	6123096	87154	71019	36312	21780	14754
India's exports to United States of America Value in 2018	4811134	98535	73140	24529	23238	13377

Source: Trade Map- Trade statistics for international business development

Now, come to the part of the import statistics of pharmaceutical products - the import of Medicaments consisting of mixed or unmixed products for therapeutic or prophylactic uses shares around 59% of the total imports of pharmaceuticals followed by Human blood; animal blood prepared for therapeutic, prophylactic or diagnostic uses (37%). The amount of India's import of Human blood; animal blood prepared for therapeutic, prophylactic, or diagnostic uses to the USA is around 48951 USD which is quite high compared to other countries. Dependence on imports from China of active pharmaceutical ingredients and chemical intermediates has been created so many problems for India especially in the time crisis. Although India has improved its ease of doing business index in the time of the crisis, challenges remain on the market access front. The US resilient supply chain policies may make India's situation up in the air due to the double bites of market inaccessibility for API and disrupted supply chain during COVID-19.

A situation where all of the countries are in the discussion about how to increase resilience in the supply chain can create an opportunity to increase Europe-India collaboration. But India has been named as 'center of commercial piracy" by the USA. The collaborative approach of the Biden administration may come up with positive externalities for India. The US 100-days' supply chain review has suggested fostering international collaboration as the third and final pillar of strategy to strengthen the pharmaceutical industry which may be viewed as a silver lining for India. Besides, the over-dependency of the USA for the pharmaceutical products towards India can't be eliminated within the next 2-3 years. Although the exact effects or realistic implications of this strategy are still unknown and hypothetical.

Conclusion:

The world is going to look markedly different in the post COVID era. Manufacturers worldwide are going to be under greater political pressure to increase their domestic production. Yet there exist some irreparable difficulties regarding consumer behavior. Consumers will look for a low price (especially in a recession) and the domestic firm will be unable to sell their products on the desired price level initially because of operational inefficiencies and other constraints. Our study concludes that this kind of inefficiencies can't be eliminated immediately after the implementation of the policy recommendations but in the long run. On the other hand, we have come up with the conclusion that India might lose some market power in pharmaceutical exports but possibilities of gain can't be neglected because of the collaborative approaches of the newly formed Biden Administration. Although the exact effect will be witnessed three or four years after the policy implementation but the nobility of the ideas has the strong potential to drive the economy towards supply chain resilience.

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