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# Mizuho Economic Outlook & Analysis

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December 22, 2021

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## *Production-linked incentive (PLI) schemes in industrial policy boosts manufacturing investment in India*

*Highly likely to drive medium-term economic growth*

### < Summary >

- ◆ India's manufacturing sector as a percentage of national GDP is the lowest among major Asian countries. However, recently, capital investment in the manufacturing industry appears to have gained momentum due to the subsidy policy known as "production-linked incentive" (PLI) schemes.
- ◆ Before PLI schemes, India's industrial policies were in line with market principles at first, such as deregulation, and later became more protective in trade. Although cellular phone-related industries have clustered to some extent, the previous measures alone have had limited effect.
- ◆ That is where PLI schemes came in. In the IT industry, PLI schemes are expected to promote the clustering of a wide range of industries, including parts/components manufacturers in addition to leading end-product manufacturers such as Samsung Electronics and major electronics manufacturing services (EMS) companies from Taiwan.
- ◆ Against the backdrop of difficulties in importing certain parts due to the COVID-19 pandemic and the re-emergence of border conflicts with China, on which India heavily depends for important parts/components such as semiconductors, the government has recently been accelerating its efforts to promote PLI schemes.
- ◆ PLI schemes will continue to be promoted and are expected to be a factor in boosting the Indian economy in the medium term. However, this is subject to the Indian government's efforts to improve the surrounding business environment.

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## 1. Introduction

Of all the major Asian countries, India is known for its underdeveloped manufacturing sector and for having been evolved into a highly service-oriented economy without going through industrialization. The current Modi administration has been trying to remedy this situation and has been fostering the growth of the manufacturing sector. However, on a macro level, there seem to be no significant results so far. As discussed in the next section, although the government has made efforts to increase the proportion of the manufacturing sector in the national GDP, it has instead declined and is now the lowest among major Asian countries (**Chart 1**). In terms of inward direct investment, although there has been a dramatic increase in the service sector, investment in manufacturing has remained stagnant for a long time (**Chart 2**).

Recently, however, investments in the manufacturing sector—electronics, in particular—seem to be gaining substantial momentum. The direct trigger is a subsidy policy known as PLI.<sup>1</sup> Although we had expected that it would be difficult to assess how far such policies would progress in India, which does not have much financial surplus, the trend accelerated in FY2021 (April 2021–March 2022), and it appears to be making significant progress up to now at least. PLI schemes are much discussed, and there are too many government announcements and media reports on such schemes to follow.

One of the underlying reasons for the emergence of PLI schemes is the limited effectiveness of the industrial policies that were previously implemented. In this paper, we will first briefly review the industrial policies prior to PLI schemes and will discuss what results they have achieved. Then, we will summarize the current status of PLI schemes and will finally discuss the future of PLI schemes as well as their implications for the economy.

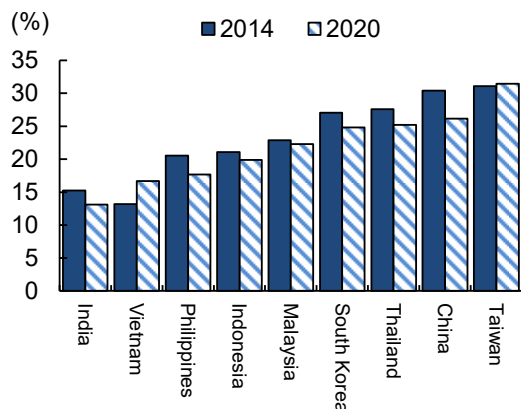
In India, the fiscal year starts in April of the current year and ends in March of the following year, so when we refer to FY2021 in this report, it refers to the period from April 2021 to March 2022.<sup>2</sup> One rupee is calculated at about 1.5 yen.

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<sup>1</sup> Production-linked incentive

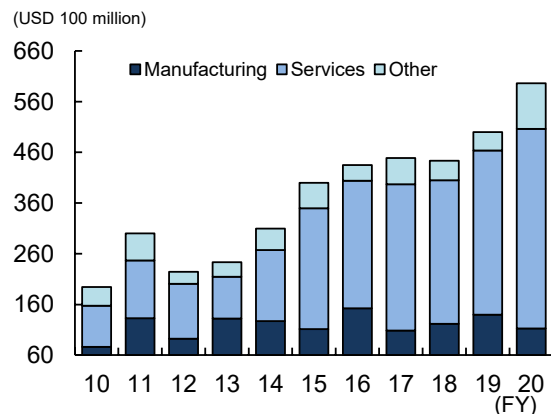
<sup>2</sup> In India, the term “FY2021” usually refers to the period from April 2020 to March 2021, but in this report, the terms are used in accordance with common usage in Japan.

**Chart 1: Manufacturing as a percentage of national GDP**



Source: Made by MHRT based upon data disclosed by ADB

**Chart 2: Inward direct investment**



Note: "Other" includes agriculture and construction.  
Source: Made by MHRT based upon data disclosed by the Ministry of Commerce and Industry of India

## 2. Industrial policies before PLI schemes

It was in May 2014 that the Indian People’s Party prevailed in the general election and that the Modi administration came to power. It was expected that the new administration would push market-based reforms more aggressively than the previous leftist government dominated by the Indian National Congress. While this was basically true, the country later turned to protectionism in the field of electronics. In the section below, we will look at these situations in detail.

### (1) Early industrial policies: Measures in alignment with market principles

In September 2014, the government launched a package of industrial promotion measures known as “Make in India” (**Chart 3**). This was a reform based on orthodox market economy concepts such as fewer requirements for permits/approvals and regulations, the protection of intellectual property rights, the enhancement of labor skills, and changes in administrative awareness. Although the service sector had been included in the target of this policy from the beginning, and as the focus on the service sector has become stronger after the revision of the policy in July 2018, the primary objective of the policy, as indicated by the name itself, is to promote the manufacturing sector. The goal was set to increase the share of the manufacturing sector in national GDP to 25%.

In line with these basic policies, the Modi administration has pursued a variety of structural reforms. The most-important ones involve the enforcement of the *Insolvency and Bankruptcy Code, 2016* and the introduction of the Goods and Services Tax (GST) in 2017. The former aimed to resolve the persistent structural issue of non-performing assets suffered by state-owned banks by consolidating complex relevant legislations for

bankruptcy procedures, while the latter intended to consolidate the complex indirect taxes that differed from state to state. These goals were accomplished and highly evaluated both at home and abroad. As a result of a number of other reforms, the country advanced from 134th place in 2014 to 63rd place in 2020 in the World Bank’s “Ease of Doing Business” rankings (**Chart 4**).

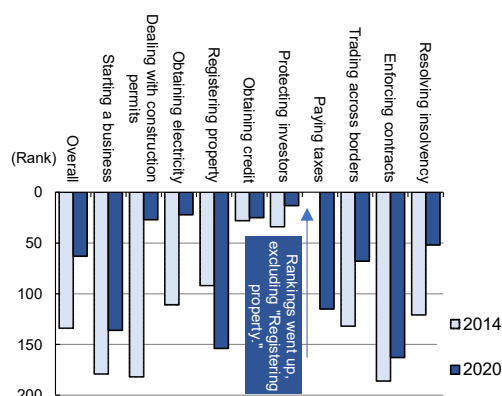
**Chart 3: Overview of “Make in India”**

I	New processes: Fewer requirements for permits/approvals and regulations, improvement of business environment	
II	New industrial infrastructure: Providing state-of-the-art infrastructure, protection of intellectual property rights, improvement of labor skills, etc.	
III	New industrial sectors: 25 industries specified from manufacturing, infrastructure, and services (increased to 27 industries in July 2018); liberalization of inward direct investment	
Manufacturing	(1) Aerospace and Defense	(16) Information Technology and Information Technology-enabled Services
	(2) Automotive and Auto Components	(17) Tourism and Hospitality Services
	(3) Pharmaceuticals and Medical Devices	(18) Medical Value Travel
	(4) Bio-Technology	(19) Transport and Logistics Services
	(5) Capital Goods	(20) Accounting and Finance Services
	(6) Textile and Apparels	(21) Audio Visual Services
	(7) Chemicals and Petro Chemicals	(22) Legal Services
	(8) Electronics System Design and Manufacturing	(23) Communication Services
	(9) Leather and Footwear	(24) Construction and Related Engineering Services
	(10) Food Processing	(25) Environmental Services
	(11) Gems and Jewelry	(26) Financial Services
	(12) Shipping	(27) Education Services
	(13) Railways	(1) Roads and Highways
	(14) Construction	(2) Mining
	(15) New and Renewable Energy	(3) Thermal Power
IV	New values: Government abandons perception of being a “regulator” and works with industry as an “industry-promoting authority.”	

Note: “Excluded” are industries that were removed from the list when eligible industries were changed in July 2018.

Source: Made by MHRT based upon data disclosed by PMINDIA, etc.

**Chart 4: World Bank’s “Ease of Doing Business” rankings**



Note: The number of countries/regions covered by the rankings is 190 in the 2020 version, whereas it's 189 in the 2014 version—but without any special adjustments by MHRT. There is no “tax payment” in the survey items as of 2014.

Source: Made by MHRT based upon data disclosed by the World Bank

The OECD’s FDI Regulatory Restrictiveness Index shows that the liberalization of inward direct investment has also been growing, especially in the non-manufacturing sector (**Chart 5**). On the other hand, the outward opening of the manufacturing sector is not noteworthy, as it had already progressed before the reform. However, the accessibility to advanced services of foreign non-manufacturers in India could further encourage direct investment in the manufacturing sector, albeit indirectly.

The Trade Freedom Index calculated by the Heritage Foundation based on custom duties and non-tariff barriers (the larger the index is, the more advanced the trade liberalization is) shows that trade liberalization had advanced at least until 2019 (**Chart 6**). To stimulate the domestic production of cellular phones, in particular, the government introduced a system called “PMP”<sup>3</sup> in FY2015. This system provided the exemption of custom duties<sup>4</sup> for the import of parts/components so as to promote the production

<sup>3</sup> Phased Manufacturing Programme

<sup>4</sup> Exempt from basic custom duties, countervailing duties, excise duties, and additional custom duties or special countervailing duties

activities of companies that assemble end products and parts/components for cellular phones in India. Incidentally, as mentioned in the next section, this was the first round of PMP for cellular phones, and the second round was later launched. The second round of PMP for cellular phones—and the PMP for X-ray products and electric vehicles that were introduced after that—were both measures to promote domestic production by increasing custom duties. For the first round of PMP for cellular phones, it was probably assumed that reductions of custom duties would have a greater effect than increase, as the domestic parts/component industry for cellular phones was very immature.

## **(2) Policies with a protectionism nature**

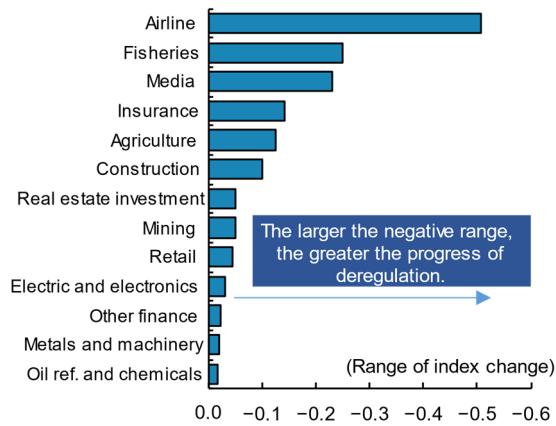
As mentioned above, national industrial policies were mainly focused on deregulation and institutional improvements in the initial phase and were generally in alignment with market principles. However, protectionist trade policies were gradually given more emphasis.

The purpose of the second round of PMP for cellular phones introduced in FY2017 (**Chart 7**) was to encourage domestic production by imposing custom duties on electronic parts/components, which previously were tariff-free. Although this PMP was officially introduced in FY2017, its real start was in FY2016, as the custom duty increase in FY2016 was later included in the package. As for the items selected for FY2019, the custom duties were not actually increased until the beginning of FY2020.<sup>5</sup> Incidentally, in FY2017, custom duties on main units of cellular phones (feature phones and smartphones) not subject to the second round of PMPs were also increased.

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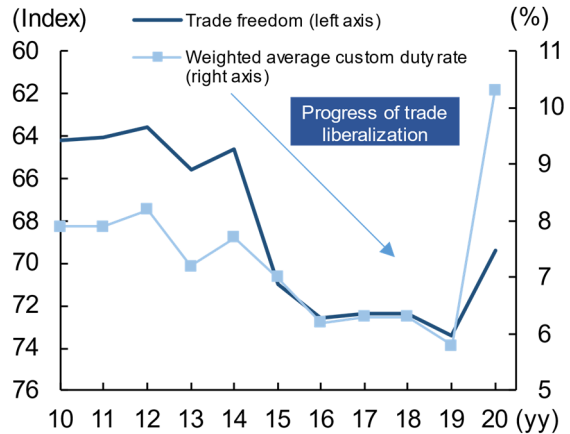
<sup>5</sup> As discussed in detail below, custom duties were also raised on other items. As a result, the weighted average custom duty rate in 2020 increased significantly, as shown in Chart 6.

**Chart 5: OECD's FDI Regulatory Restrictiveness Index (change from 2014 to 2020)**



Source: Made by MHRT based upon data disclosed by the OECD

**Chart 6: Trade Freedom Index and the average custom duty rate**



Note: The Trade Freedom Index indicates that the larger the index is, the more advanced the trade liberalization is. As the source materials generally cover the first half of the year before the year of publication, figures in this chart are shifted one year backward (e.g., data for 2021 in the material is shown as the 2020 figure in the chart).

Source: Made by MHRT based upon data disclosed by the Heritage Foundation

In response to such movement, the Japanese government requested the World Trade Organization (WTO) to establish a panel to review the custom duties imposed by the Indian government on particular electronic products (i.e., whether or not they are included in the PMP), claiming that such tariff increases violate WTO agreements (**Chart 8**). When looking at the items subject to the custom duties, although the custom duty hikes on some items dated back to July 2014, the majority of the hikes started in FY2017 or later, suggesting that the trend toward protectionism gained momentum around that time. The Indian government, on the other hand, insisted that the custom duty hikes were not a violation of WTO agreements. The controversy is still ongoing.

Then, India withdrew from negotiations for the Regional Comprehensive Economic Partnership (RCEP) Agreement, which is a multilateral free trade agreement (FTA), just before the COVID-19 pandemic in November 2019. As a result, RCEP negotiations were concluded by 15 countries/regions without India, namely: Japan, China, South Korea, ASEAN countries, Australia, and New Zealand. The reason for the withdrawal is believed to be the Indian government's decision that concluding an FTA with China, with whom India is running a huge trade deficit, would have little benefit other than limiting its tariff policy and would have negative impact on the drive for the soon-to-be introduced PLI schemes. Regardless, the RCEP Agreement is open to India's reversion, as it provides that "the Agreement shall remain open for admission by India, the original negotiating party,

from the date of enforcement.”

### (3) Assessment of pre-PLI industrial policies

As mentioned at the beginning of this paper, the development of the manufacturing sector has not been successful from a macro perspective, and it should be noted that the industrial policies implemented prior to PLI schemes alone have not delivered the expected results. However, the following two points should be emphasized.

**Chart 7: Increase in basic custom duties due to the second PMP scheme for cellular phones**

FY	Item	Tax rate (%)
2016	Battery chargers and adapters	15→20
	Battery packs	15
	Wired headsets	15
2017	Mechanics	15
	Die-cut parts	
	Microphones and receivers	
	Key pads	
2018	USB cables	10→20
	Printed circuit board assemblies	
	Camera parts	
2019	Connectors	10
	Display parts	
	Touch panels and cover glass parts	
	Vibrator motors and ringers	10

Note: Refer to the notification of the Ministry of Electronics & Information Technology of India for details on mechanics and die-cut parts (File No.4(8)/2016-IPHW).

Source: Made by MHRT based upon data disclosed by the Ministry of Electronics & Information Technology of India

**Chart 8: Increase in custom duties on main items in request for panel establishment**

Main subject items	Time of raising	Tax rate (%)
(1) Feature phones	Jul. 2017	10
	Dec. 2017	15
	Feb. 2018	20
(2) Smartphones	Jul. 2017	10
	Dec. 2017	15
	Feb. 2018	20
(3) Base stations for cellular phones	Jul. 2014	10
	Oct. 2018	20
(4) Digital microwave communication devices	Jul. 2014	10
	Feb. 2018	20
(5) Printed circuit board assemblies	Apr. 2018	10
	Feb. 2020	20
(6) LCD modules for smartphones	Jul. 2014	10
	Feb. 2018	15

Source: Made by MHRT based upon “Unfair Trade Report 2021” by Japan’s Ministry of Economy, Trade and Industry and data disclosed by EximGuru

First, although the government’s structural reforms did not bring about the development of the manufacturing sector by themselves, they did help to bolster the Indian economy. Policies such as the introduction of the GST, the enactment of the *Insolvency and Bankruptcy Code*, and the streamlining of permits and approvals are considered to be substantial steps toward this purpose. If such fundamental conditions of the economy had not changed, the effectiveness of other policies such as PLI schemes would have been reduced.

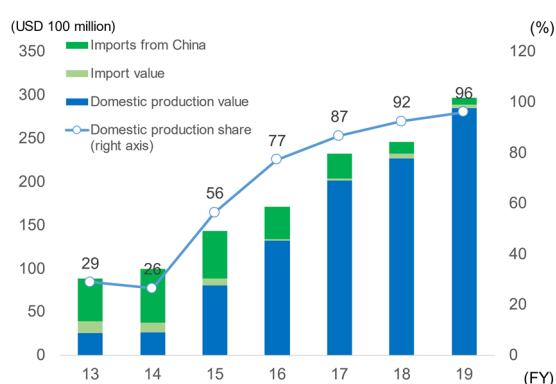
Second, although there was no macro development in the manufacturing sector, cellular phone production in India made rapid progress (**Chart 9**). It should be said that the first PMP for cellular phones and other relevant measures have had certain effects. For example, cellular phone manufacturer Lava International, which had been producing in China despite being an Indian company, gradually moved its production base to India since



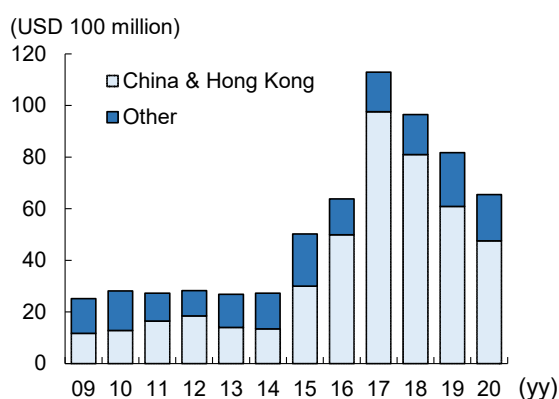
2016.<sup>6</sup> Around the same time, some companies, including Foxconn (Taiwan), Samsung Electronics (South Korea), Xiaomi, Oppo, and Vivo (all in China), announced plans to establish manufacturing plants or enhance production in India.

At first, imports of cellular phone parts/components increased rapidly, reflecting custom duty reductions via PMP schemes and an increase in domestic production. However, due to the effect of the second PMP scheme for cellular phones, imports have declined sharply since 2018 (**Chart 10**). In this regard, industrial policies consisted of structural reform and tariff hikes have achieved a certain degree of success.

**Chart 9: Cellular phone production and import**



**Chart 10: Import value of cellular phone parts/components**



Note: Because the value of imports is not published on a fiscal-year basis, the value of imports of each fiscal year is simply calculated by totaling 75% of the current year's imports and 25% of the following year, on a calendar-year basis.

Source: Made by MHRT based upon data disclosed by India Cellular & Electronics Association (ICEA) and UN Comtrade

Source: Made by MHRT based upon data disclosed by UN Comtrade

### 3. Commencement of PLI schemes

PLI schemes, as a policy of subsidies, were formulated by the government as a key strategy for the further development of the cellular phone industry and for the expansion of the production in the non-cellular phone industry. The following is a detailed look at this policy.

#### (1) Overall perception

The PLI was announced in February 2020 as part of the budget proposal for FY2020. As the name in the “PLI” acronym (i.e., “production-linked incentive”) suggests, subsidies are provided under the policy on the premise that production in India will increase. The

<sup>6</sup> “Cellular phone maker Lava to transfer production from China to India: development and part/component manufacturing to be also transferred in two years” (NNA, February 22, 2016)

background to implementing such a policy is the reality that China and Vietnam—India’s strongest rivals in attracting manufacturers and exporting products—are both maintaining their competitiveness through government subsidy policies. In terms of cellular phone manufacturing, approximately 20% of costs in China and 10% in Vietnam are reduced via subsidies (**Chart 11**).

Then, in March 2020, three products: (1) cellular phones and specific electronic parts/components, (2) pharmaceuticals, and (3) medical devices, were selected for PLI schemes, and a five-year subsidy of about Rs. 510 billion was made available (**Chart 12**; numbers correspond to those in the chart).

In November 2020, 10 products, including (6) automobiles and auto parts/components, were added to the scope of PLI schemes, and a five-year subsidy of about Rs. 1.46 trillion was made available. The total subsidy for the 13 products amounted to about Rs. 1.97 trillion (about JPY 3 trillion). These subsidy amounts are as of the time of announcement and have changed since then for some products. Also, as we will discuss later, some products have been added to PLI schemes list on a one-off basis since then. The background to such growing emphasis on PLI schemes includes the following.

First, as mentioned below, PLI schemes for cellular phones and specific electronic parts/components, in which the companies to be subsidized were selected first, has been very successful in terms of attracting companies and increasing investment. It seems that the government has seen the impact of subsidies and has thus decided to adopt the policy to other industries as well.

**Chart 11: Percentage of cost reduction via subsidies in cellular phone production**

Subsidies, etc. that could help reduce costs	India	Vietnam	China
Reduction/exemption of corporate income tax	0.73-0.95%	1.5-2.0%	2.0%
Subsidies for machinery and equipment	None	0.2%	3.0%
Subsidies by Indian state governments for capital investment	0.6-1.2%	N/A	N/A
Electricity charges	0%	1.0%	1.0%
Interest support for working capital	0%	1.5-2.0%	3.0-3.5%
Subsidies for R&D	0.15%	0.4-1.0%	2.0%
Incentives for parts/components industry	0%	0.5-1.0%	0%
Reduction/exemption of land lease fees	0%	0.5%	0.6%
Support for development of industrial estates	0.4%	0.5%	0.6%
Building	Nearly zero	0.3%	1.0%
Subsidies for labor	Nearly zero	0.5%	2.0%
Logistics	0%	0.5%	1.0%
Factors affecting the "ease of doing business"	0%	1.5-2.5%	2.0-3.0%
For fixed capital or duty-free import of inputs that are not available domestically	0%	0.5%	0%
Production-linked incentives	4.0-6.0% of the imported value	0%	1.0-2.0%
<b>Total</b>	<b>5.88-8.7%</b>	<b>9.4-12.5%</b>	<b>19.2-21.7%</b>

Source: Made by MHRT based upon data disclosed by ICEA

**Chart 12: Products covered by PLI schemes and five-year subsidies**

		Product	Governing authority	Subsidy	
Existing categories	(1)	Cellular phones and specific electronic components	Ministry of Electronics & Information Technology	4,095.1	
	(2)	Important starting materials, drug intermediates, and active pharmaceutical ingredients	Department of Pharmaceuticals	694.0	
	(3)	Medical devices manufacturing	Department of Pharmaceuticals	342.0	
				Subtotal	5,131.1
New categories	(4)	Advanced chemical batteries	NITI Aayog, Ministry of Heavy Industries	1,810.0	
	(5)	Electronic and technical products	Ministry of Electronics & Information Technology	500.0	
	(6)	Automobiles and auto parts/components	Ministry of Heavy Industries	5,704.2	
	(7)	Pharmaceuticals	Department of Pharmaceuticals	1,500.0	
	(8)	Communication and network equipment	Department of Telecommunications	1,219.5	
	(9)	Artificial/industrial textiles	Ministry of Textiles	1,068.3	
	(10)	Foods	Ministry of Food Processing Industries	1,090.0	
	(11)	High-efficiency photovoltaic modules	Ministry of New and Renewable Energy	450.0	
	(12)	Home appliances (air conditioners, LED)	Department for Promotion of Industry and Internal Trade	623.8	
	(13)	Special steel	Ministry of Steel	632.2	
				Subtotal	14,598.0
				<b>Total</b>	<b>19,729.1</b>

Source: Made by MHRT based upon data disclosed by the press releases of the Indian government

Second, as the impact of the COVID-19 pandemic worsened in and after April, imports of some products became difficult due to lockdowns around the world, and the demand for goods increased, renewing awareness of the importance of domestic production. The share of imports from China and Hong Kong has been increasing year by year (**Chart 13**), and reliance on China is particularly high for electronics products.

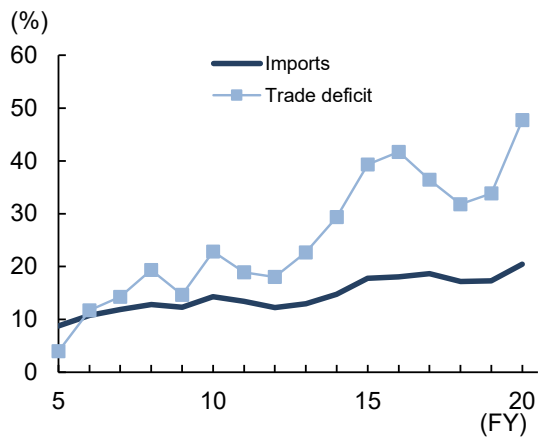
Third, as military confrontation with China has intensified, there is a growing consensus that India should not depend on China for the procurement of key parts/components and that the trade deficit with China should be reduced regardless. In the Ladakh region, which is direct union territory of Jammu and Kashmir, soldiers from India and China clashed in May 2020, resulting in deaths for the first time in 45 years. In the Arunachal Pradesh State, there were reports that China had expanded its territory of effective control in January 2021 and also that Chinese troops had invaded the area in September of the same year. In Sikkim state, there appears to have been a small military clash between India and China in January 2021.

## **(2) PLI schemes for IT-related products**

The first products for which specific companies were selected to receive subsidies in October 2020 were cellular phones and specific electronic parts/components, and a total of 21 companies were selected. Among them were three major Taiwanese EMS companies, namely, Foxconn, Wistron, and Pegatron, which are the main manufacturers of the iPhone, and Samsung Electronics—the world’s largest smartphone maker. On the other hand, companies in China, where conflicts at the government level have been deepening, were not on the list.

Under PLI schemes for cellular phones and specific electronic parts/components, the total investment for the 21 companies is expected to be Rs. 110 billion, while also creating 800,000 jobs (200,000 direct and 600,000 indirect), production value of Rs. 10.5 trillion (more than Rs. 9 trillion for high-value cellular phones, Rs. 1.25 trillion for local cellular phones, and Rs. 150 billion for specific electronic parts/components), and exports at Rs. 6.5 trillion over five years. The subsidy amount is 4–6% of the increase in sales relative to FY2019.

**Chart 13: China and Hong Kong's share of India's customs-cleared imports and trade deficit**



Source: Made by MHRT based upon data disclosed by the Ministry of Commerce and Industry of India and the Reserve Bank of India

**Chart 14: Outline of measures to support semiconductor and display manufacturing**

Item	Policy details
Support for installation of two semiconductor factories and two display factories	Subsidized up to 50% of project costs
Support for 15 semiconductor parts/components companies	Subsidized 30% of the amount invested in a new establishment
Support for 100 fabless companies in India	(1) Subsidized up to 50% of disbursements that satisfy requirements as a product design-linked incentive; (2) Subsidized 4-6% of net sales for 5 years as product deployment-linked incentives
Reform of the semiconductor laboratories	Modernization and commercialization of semiconductor laboratories by the Ministry of Electronics and Information Technology
Establishment of the India Semiconductor Mission	Established as a specialized independent organization to formulate long-term strategies for the semiconductor and display ecosystems

Source: Made by MHRT based upon data disclosed by the cabinet of India

In July 2021, PLI scheme-eligible companies for IT hardware (as products in the electronics industry following cellular phones and specific electronic parts/components) were announced. “IT hardware” in this context refers to personal computers and other information devices. The PLI-eligible companies included leading companies in the industry, such as Dell and major Taiwanese EMS companies. The total investment for the 14 companies over four years is expected to be Rs. 25.17 billion, while also creating 36,000 jobs and a production value of Rs. 1.61 trillion. The total subsidy is Rs. 73.25 billion, which would correspond to (5) electronics and technical products in **Chart 12** and which has already exceeded the subsidy of the projected Rs. 50 billion. According to media reports and information obtained through interviews conducted by the author, additional PLI schemes are planned for electronics products. This will further increase the subsidies.

In October 2021, the companies eligible for PLI schemes for telecommunications equipment (parts/components) were announced, including Taiwan’s Foxconn and Finland’s Nokia. The total investment for the 31 companies is expected to be Rs. 33.45 billion over four years, creating more than 40,000 jobs and generating Rs. 1.82 trillion in production.

The fact that leading electronics end-product manufacturers such as Samsung Electronics, Taiwan’s major EMS companies, and Dell have decided to invest in and expand production in India could spur the clustering of parts/components manufacturers in industries other than telecommunications equipment parts/components. In response to this, the Indian government introduced a new subsidy scheme of Rs. 760 billion for

semiconductor and display manufacturers, in December 2021 (**Chart 14**).<sup>7</sup> The reason why it is a separate program from the PLI schemes is that the new scheme focuses on financial support for capital investment in addition to the subsidies linked to production activities.

As for displays, the India Cellular & Electronics Association previously (in May 2021) published a report requesting the government's support and promotion of the domestic production of displays,<sup>8</sup> and the new support measures will respond to this request. In the report, the association stated that the domestic production of displays will be started in 2023 and that it would target a production capacity of 360,000 to 420,000 sixth-generation panels and 560,000 to 730,000 8.5<sup>th</sup>-generation panels by 2025, aiming to become a net exporter of displays.

Other than the above, Tata, a major conglomerate, announced in August 2021 that it intended to enter the post-manufacturing process of semiconductors. It was also reported in September 2021 that TSMC in Taiwan, i.e., the world's largest foundry (contract manufacturer of semiconductors), would soon to sign an agreement to invest USD 7.5 billion in India.

In the IT industry, the government seems to be considering adding wearable devices<sup>9</sup> and gaming machines<sup>10</sup> to the scope of PLI schemes as well.

### **(3) PLI schemes for non-IT-related products**

Fourteen companies eligible for PLI schemes for medical devices were announced in February 2021, and eight companies were added in December 2021.<sup>11</sup> Production is expected to start in FY2022, and PLI schemes in this area will continue until FY2027. The total number of jobs to be created is 6,411.

In November 2021, PLI scheme-eligible companies for air conditioner parts/components and LED lighting parts/components, collectively referred to as "home appliances," were also announced. For the two industries, 44,000 jobs with an output of Rs. 810 billion is expected. Although the duration of the project was not indicated in the government's press release, it is expected to be four to five years, as is the case with PLI schemes for other industries.

Four Japanese companies were selected to be covered by the PLI schemes for air

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<sup>7</sup> Cabinet of India (2021)

<sup>8</sup> ICEA (2021); according to the context, it is assumed that liquid-crystal displays (LCDs) and organic light-emitting displays (OLEDs) are collectively referred to as "displays."

<sup>9</sup> "Production incentive program adds wearable devices" (*NNA*, August 24, 2021)

<sup>10</sup> "Government considers including gaming devices in PLI" (*NNA*, October 7, 2021)

<sup>11</sup> As shown in Chart 17, the total number of eligible companies should be 22 with a total investment of Rs. 11.34 billion, but the most-recent press release shows 21 companies with a total investment of Rs. 10.59 billion. This could be due to withdrawal, revocation of approval, or change in the investment amount, etc., but details have not been confirmed at the time of this report.

conditioner parts/components, and Daikin Airconditioning was the second-largest receiver of the investment amount. On the other hand, Chinese companies such as Midea, Haier, and Chenfeng were not selected due to their lack of approval for inward FDI.<sup>12</sup>

In October 2021, although an official announcement by the government has not been confirmed, 16 companies were selected for PLI schemes for solar power generation modules, of which 10 company names were disclosed, such as Coal India Limited.<sup>13</sup> Because the subsidies requested by the top three companies alone will exceed the originally planned subsidy of Rs. 45 billion, the government is reportedly considering increasing the amount to Rs. 240 billion.

In November 2021, an announcement was made that 55 companies had been nominated eligible for PLI schemes for pharmaceuticals. The format of the announcement was based on global sales, and the amount of individual investment was not disclosed. Then, later in December, it was announced that “eight more companies were added to the list, making a total of 50 companies.” The names of the eight companies were disclosed together with their investment amounts, but the other 42 companies were not mentioned. Although details are unknown, it is considered that some companies have withdrawn or that there was revocation of approval. A total investment of Rs. 44,983.8 million and employment of 10,743 people are expected for 50 companies in total.

In December 2021, 60 companies in the food processing industry were selected for a PLI scheme. Although detailed information other than the names of the companies has not yet been confirmed, Unilever and Nestle are among the eligible companies.

Regarding major developments in the non-IT sector, drones were first included in PLI schemes on September 15, and it was announced that Rs. 1.2 billion would be allocated as a subsidy. At the same time, although the reasons are unknown, it was also announced that the subsidy for PLI schemes for automobiles will be reduced from Rs 570.42 billion to Rs 259.38 billion. This is considered to be due to the increase in subsidies for other industries such as electronic products and solar power generation. Further, the government seems to be considering the addition of electrolytic devices<sup>14</sup> and power equipment<sup>15</sup> to the PLI schemes list.

#### **(4) Trade policy after the start of PLI schemes**

After the launch of the PLI schemes, India’s trade policy became more protective, in

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<sup>12</sup> Due to tighter restrictions on foreign investment in 2020, direct investment by companies of bordering countries requires prior approval. This is probably the impact of the military conflict with China.

<sup>13</sup> “Rs 4,500-crore scheme: Solar PLI: 16 companies make the cut” (*Financial Express*, 26 October 2021)

<sup>14</sup> “Electrolytic devices to be covered by the production incentive program to utilize hydrogen” (*NNA*, September 10, 2021); the device extracts hydrogen from water via electrolysis.

<sup>15</sup> “Government plans to add power equipment to PLI” (*NNA*, October 1, 2021)

order to facilitate and ensure the success of said scheme. First, in the FY2020 budget proposal, which launched the PLI schemes, a wide-ranging increase in custom duties was also announced. The items to be covered included two item categories, such as battery chargers/adapters (mentioned in the box of the dotted line in **Chart 7**) and three item categories such as display parts/components classified in FY2019, plus a wide range of additional items such as commercial vehicles, catalytic converters for auto parts/components, and chemicals.<sup>16</sup>

In October 2020, the government prohibited imports of air conditioners using refrigerants. The measure is aimed at increasing domestic production of end products and demand for parts/components before the introduction of the PLI scheme for air conditioner parts/components. Then, in January 2021, the PMP for X-ray products (“PMP” refers to the “progressive manufacturing program” shown in **Chart 7**) was introduced, and in March 2021, the PMP for electric vehicles was introduced, with a decision to raise custom duties on related parts/components. The former aims to provide indirect support for PLI schemes in the areas of medical devices, with the latter for automobiles.

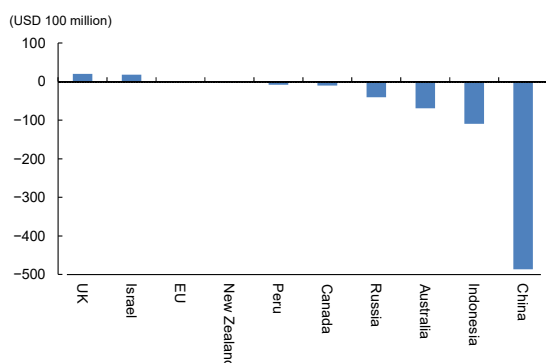
However, focusing only on protective trade could narrow the export opportunities of companies clustered by PLI schemes. For this reason, India is aggressively pursuing negotiations for bilateral trade agreements. It is highly feasible for India to conclude FTAs with the U.K. and Israel, with whom India has a trade surplus, and with the EU, New Zealand, Peru, and Canada, etc., with which India has been recording a very small trade deficit (**Chart 15**).

Regarding India’s return to the RCEP, from which the government withdrew from negotiations prior to the start of the PLI schemes, resumption is not likely for the time being, although this is possible in the future according to the outcome of the PLI schemes. The benefits of joining the RCEP will include opportunities for India to gain access to the markets of countries with which it has not signed an FTA, along with easier entry into complex supply chains involving multiple countries (**Chart 16**). In contrast, India’s competitor, China, is home to powerful export-oriented companies. Therefore, it is not realistic for India to join the RCEP, where China is a member, unless India confirms improvement in the competitiveness of its manufacturing sector as a result of the PLI schemes. Because PLI schemes themselves are primarily a five-year framework, it will at least take more than five years to start discussions on returning to the RCEP.

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<sup>16</sup> ASA & Associates LLP and Corporate Catalyst (India) PVT LTD (2020)

**Chart 15: Trade balance with major FTA negotiation counterparts (FY2020)**



Source: Made by MHRT based upon data disclosed by the Ministry of Commerce and Industry of India and JETRO

**Chart 16: Status of FTA signing and negotiations with RCEP member countries**

Signed	Under negotiation	Not under negotiation
Japan	China	Vietnam
South Korea	Australia	Philippines
Thailand	New Zealand	Myanmar
Singapore	Indonesia	Cambodia
Malaysia		Laos
		Brunei

Note: Aside from the bilateral FTA, an India-ASEAN trade agreement has been concluded that involves India and 10 ASEAN member countries.  
Source: Made by MHRT based upon various materials

#### 4. Future prospects

As discussed above, PLI schemes have progressed in a number of product categories, and this is likely to continue to occur in the future. Before concluding this paper, we would like to consider how PLI schemes will affect the economies of India and neighboring countries.

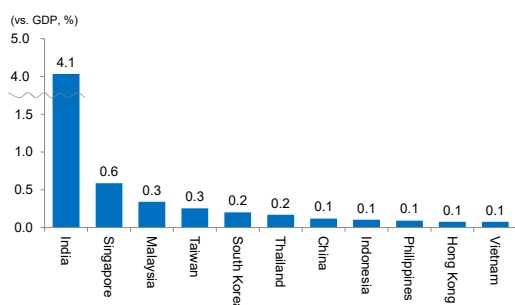
In this paper, we used the OECD Inter-Country Input-Output (ICIO) tables to estimate PLI scheme impact on India's domestic industry and the spillover effects on other countries and regions through supply chains. In this section, only the four products for which the government has already selected eligible companies and announced production value targets for the next five years (cellular phones and electronic parts/components, IT hardware, communication devices, and air conditioners/LEDs) are covered by the analysis, and the economic effects are estimated assuming that the eligible companies will conduct their production activities in line with the five-year targets.

In terms of estimated results (**Chart 17**), PLI schemes are expected to boost the growth rate of India by a total of 4.1 percentage points over five years. By industry (**Chart 18**), the impact is expected to spread not only to electronics (PCs and related products), which are the main target of the PLI schemes, but also to the retail and other service industries. Of these, the products that are expected to be most affected are cellular phones and specific electronic parts/components, for which massive production targets have been imposed. Cellular phone production in India in FY2019 is expected to reach 330 million units—the second largest in the world after China in terms of number of units—reaching USD 30 billion (about JPY 3.15 trillion) in terms of monetary value. Under the PLI schemes for cellular phones and specific electronic parts/components, the companies involved plan to



produce cellular phones and other relevant products worth Rs. 10.5 trillion (about JPY 15.75 trillion) over five years, which in simple terms means that it would produce more than twice as many cellular phones after five years as it did in FY2019. Further, as mentioned above, when selecting companies for PLI schemes, accompanying targets for export values are also assigned. Looking at the global exports of cellular phones (HS code 851712) in 2019 using the United Nations trade database (UN Comtrade) (**Chart 19**), China and Vietnam alone accounted for 87% of the total share, and India was far behind (1.8%). However, if the PLI scheme target of additional exports of Rs. 6.5 trillion (about USD 85.3 billion, or about JPY 9.75 trillion) is achieved, exports by India could expand to a size close to that of Vietnam today. Therefore, India’s manufacturing base could become an important player both domestically and in global markets in the future. According to the estimated results once again, other than India, Asian countries such as Singapore, Malaysia, Taiwan, and South Korea are likely to see positive impact. The relatively large impact on these countries and regions is due to their large supply of semiconductors and other electronics-related parts/components to India.

**Chart 17: Output induced by PLI scheme promotion in each country and region**



Source: Made by MHRT based upon data disclosed by the OECD, IMF, and various media coverage

**Chart 18: Induced output by industry**

	Total	Mining	Chemicals	Metals	PC & associated items	Electrical machinery	Services	Other
India	4.1	0.1	0.1	0.1	2.2	0.2	1.0	0.3
Singapore	0.6	0.0	0.0	0.0	0.2	0.0	0.3	0.0
Malaysia	0.3	0.0	0.0	0.0	0.1	0.0	0.1	0.0
Taiwan	0.3	0.0	0.0	0.0	0.1	0.0	0.1	0.0
South Korea	0.2	0.0	0.0	0.0	0.1	0.0	0.1	0.0
Thailand	0.2	0.0	0.0	0.0	0.1	0.0	0.1	0.0
China	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Indonesia	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Philippines	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hong Kong	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Vietnam	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

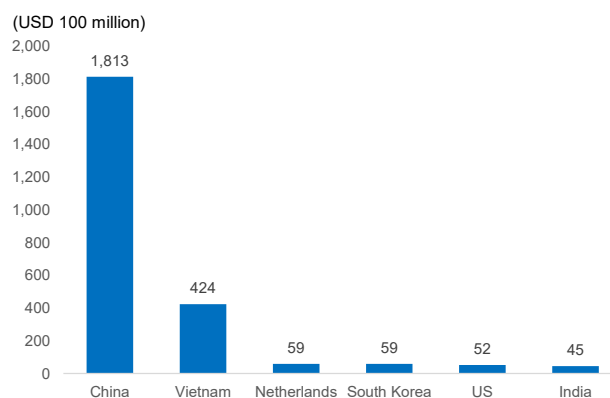
Source: Made by MHRT based upon data disclosed by the OECD, IMF, and various media coverage

Although only four products for which the subject companies have already been announced are covered in this analysis, companies in other industries subject to PLI schemes are scheduled to be announced in the future, and the economic impact is likely to be even greater. In particular, although the amount of subsidies for automobiles and their parts/components has been significantly reduced from the original plan, it is still expected to generate a reasonable economic benefit, given that the amount of subsidies is the second largest after cellular phones and specific electronic parts/components. In terms of the impact on the Japanese economy, about half of automobile production in India is currently

dominated by Japanese companies, including Maruti Suzuki. The economic benefits of PLI schemes could provide further investment opportunities for Japanese companies, but attention should be paid regarding which companies will be selected for the program, as this could help non-Japanese competitors advance into the region.

We also need to consider the risk that the companies involved might not achieve their output targets under the PLI schemes, and thus the outcome of the program might not be as good as estimated. As PLI schemes are simply a subsidy program, there are still issues existing that have previously hindered investment in India, such as procuring local electricity and securing human resources. In the second half of 2021, India experienced a shortage of coal due to the global rise in coal prices and disruptions in the coal supply chain from heavy rains. This caused power shortages in some areas and affected the manufacturing activities of companies. Such infrastructure vulnerability can be an important factor that determines a company's performance. In fact, there have been cases where companies have failed to meet the targets of the PLI schemes. With regard to the PLI scheme for cellular phones, which is already under operation, only one company, Samsung Electronics, achieved its sales target among the eligible companies in the first year (April 2020 to March 2021), in part due to the spread of COVID-19. Although the PLI scheme implementation period was extended by one year as a remedy for the COVID-19 pandemic, it is unclear whether such remedies will be provided in the future and what types of events will be subject to such remedies. The Indian government will need to keep improving the business environment to help companies achieve their goals—not to mention taking measures to control the spread of the disease.

**Chart 19: Export value of cellular phones (2019)**



Source: Made by MHRT based upon data disclosed by UN Comtrade

## Reference

**Refer to the original Japanese report by clicking the URL below for the reference material.**  
<https://www.mizuho-ir.co.jp/publication/report/2021/pdf/report211222.pdf>