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Ashdod Port Company

The Ports Sector in Israel and Aspects of Operation and Service at Ashdod Port



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Background

Israel's seaports are strategically crucial to the country's international trade. The fact that about 99% of Israel's total export and import cargo (in tons) passes through these ports indicates the high dependence of Israel's international trade on seaports. This dependence stems primarily from its source and destination markets not being adjacent to it due to its geographic location and geopolitical situation. In addition, the scarcity of natural resources requires an open economy with a high rate of import that meets all market needs.

Regular activity at the seaports is essential in light of their importance to Israel's economy. Ships delayed at Israel's ports create a bottleneck in Israel's economic activity, reduce market productivity, and harm export and import components used for investment products. Beyond that, as long as the damage to exports and imports continues, it may harm employment in industries directly affected by the import of inputs (industry, trade, construction, and agriculture) and the cost of living.

There are several types of cargo ships. The main ones are container ships, general cargo ships, bulk carrier ships, and automated facilities ships. A container is a steel box designed to store cargo for its transport; general cargo is not packed in a container, and it might refer to units (such as vehicles) packed in packages, boxes, and the like; bulk cargo – general cargo that is not packed but loaded on a ship in bulk, such as grains, coal, cement, and metal ore; automated facilities used to transport cargo such as cement, phosphates, chemicals, fuel, and grains. The level of service in cargo handling is affected by many factors – endogenous (related to the conduct of the port) and exogenous (which do not depend on the conduct of the port).

During the audit, the Ashdod Port Company was the only port left still owned by the state. In its reply to the State Comptroller's Office in July 2023, it stated that in 2005–2018, it transferred NIS 733 million to the state as dividend and is supposed to transfer another NIS 90 million for 2019–2020. It also noted that in 2011–2022 it transferred NIS 591.4 million to the state as royalties.



Key Figures

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commercial ports operating in Israel¹: Port of Haifa, the Bay Port, Israel Shipyards Port, Port of Ashdod, the South Port and the Port of Eilat²

60,713

thousands of tons of cargo passed through Israel's ports in 2022 – a 70% increase compared to 2000 (in which 36,098 thousand tons passed)

about 80

the record number of ships waiting in Israeli ports (The peak months are May 2021 and May 2022)

26%

the decrease in output per work hour at Ashdod Port in bulk cargo in 2017–2022

13 out of 14

the Port of Ashdod rank out of 14 comparable ports worldwide in terms of container ships' dwell time (second to last), according to the World Bank inspection, processed by the State Comptroller's Office

2.7 days

the median dwell time at Israel's ports for bulk carriers in 2021 compared to 1.7 days on average in ports of comparable countries around the world. This is the longest dwell time among the ten inspected countries

70%

the decrease in the work team responsiveness ("hands") in the bulk cargo at the port of Ashdod in 2017–2022. As for containers and general cargo, the decrease in those years was 24% and 60% respectively

NIS 5.1 billion

estimated damage to export in 2021, according to the Chief Economist Division at the Ministry of Finance inspection, processed by the State Comptroller's Office. The estimated damage to import in 2021, in investment products and final goods, was NIS 3.9 and 4.8 billion respectively. In that year, the addition to inflation was estimated at 0.1%

¹ Ashdod Port is operated by Ashdod Port Company Ltd., which is a governmental company. The rest of the ports are operated by private companies.

² In addition, there are also several specialized terminals relatively small Compared to the mentioned above, including the Haifa Granaries; the South Gadot Terminal; Northern Chemicals Terminal and the Petrol Port.



Audit Actions



From August 2022 to April 2023, the State Comptroller's Office audited the ports sector in Israel and the service level at Ashdod port. The audit included, among other things, an analysis of the activity of the ports in Israel in 2021, which was affected by damage to the global supply chain following the Covid-19 crisis. Moreover, the level of service provided by the Administration of Shipping and Ports (the body that regulates the port sector), the Israel Ports Company Ltd. (the ports' property company), and the Ashdod and Haifa Ports, until 2022, were examined. The audit was conducted at Ashdod Port Company Ltd., Israel Ports Company Ltd., and the Administration of Shipping and Ports. Supplementary audits were conducted at the Ministry of Transport and Finance. On January 10th, 2023, the privatization process of Haifa Port Company was completed, and 100% of its shares were transferred from the state to a private investor.

Key Findings



The Impact of Ports' Congestion on the Cost of Living and of Importers' in 2021 Following the Covid-19 Crisis – ports' congestion has significant economic consequences, including among other things, damage to the GDP due to loss of exports; disruptions in inputs' supply followed by a decrease in output in the industry, construction, and agricultural sectors; damage to private consumption as a result of the rising prices of products; potential damage to employment as trade, export, and production branches are affected; damage to the reputation of Israeli exporters and importers; imposing additional costs on importers and exporters. According to the Chief Economist Division at the Ministry of Finance calculations and additional State Comptroller's Office calculations, the estimated annual damage to export as a result of ports' congestion in 2021 in GDP terms was about NIS 5.1 billion; the estimated annual damage to import of investment products was about NIS 3.9 billion; the estimated annual damage to import of final goods in terms of GDP was about NIS 4.8 billion; and an addition of 0.1% to inflation for an entire year. It should be noted that the inflation rate in 2021 was 2.8%.



The Number of Ships Waiting Outside Israel's Port – at the beginning of 2021, there was a steep increase in the number of ships waiting at the ports' gates, up to a peak of 77 ships in May 2021. In the second half of 2021, a downward trend was recorded, but at the end of this year, an upward trend began again, reaching a peak of 82 ships in May 2022. The highest number of ships waiting in 2021 and 2022 was mainly evident outside the Port of Ashdod.





The Reasons for the Formation of Queues of Ships in the Ports in Haifa and Ashdod

– all four service indicators tested in the Port of Ashdod, the Port of Haifa, and the Israel Shipyards Port – the average ship's waiting time, the average ship's dwell time, the average output per hour of work, the level of responsiveness to the demand for working hands – worsened in 2018–2022, compared to 2017, negatively affecting the quality and level of service and raises the price of shipping, which means that end consumers pay more and that the cost of living is higher. It was also found that the deterioration of service indicators had already begun in 2018, about two years before the outbreak of Covid-19 in early 2020. This finding indicates a structural problem in the service efficiency provided at the examined ports in Israel. Below is a specification of the trends that led to the formation of queues, according to data published by the Administration of Shipping and Ports:


- **Increase in Waiting Time** – "waiting time" is defined as the time from the beginning of the first shift to which the work team was called ("the hands") until the work begins on the ship of the first team. The audit found that the average waiting time for the three types of cargo (containers, general cargo, and bulk cargo) had risen from 2017 to 2021. Waiting Time at Ashdod Port from 2017 to 2021 for unloading containers, general cargo, and bulk cargo rose from 8.8 to 17.3 hours, from 31.2 to 123.6 hours, and from 49.4 to 313.2 hours, respectively. In percentages, the increase in waiting times for these loads was 150%, 270%, and 644%, respectively. At the port of Haifa, the waiting time for container unloading, general cargo, and bulk cargo increased in 2017–2021 from 4 to 17.4 hours, from 25.2 to 98.3 hours, and 19.5 to 90.3 hours, respectively. In percentages, the growth rate in the areas above was 335%, 290%, and 363%, respectively. It should be noted that in 2022, the waiting times decreased compared to 2021 for all types of cargo, except for general cargo at Ashdod Port, where the waiting time increased by 7% compared to a 37% decrease in other ports.
- **Increase in Dwell Time** – the average "dwell time" of ships is defined as the time (in hours) measured from the beginning of the first shift to which the work crew was called ("the hands") until the ship's departure. It was found that the average dwell time for the three types of cargo had been on the rise from 2017 to 2021. The dwell time for unloading containers, general cargo, and bulk cargo at Ashdod Port from 2017 to 2021 increased from 34 to 53.6 hours, from 93 to 196.8 hours, and from 159.5 to 570.6 hours, respectively. In percentages, the growth rate in the operations above was 58%, 111%, and 258%, respectively. At Haifa Port, the dwell time for unloading containers, general cargo, and bulk cargo increased in 2017–2021 from 20.1 to 43.8 hours, from 70.8 to 163.4 hours and from 90.1 to 218.6 hours. In percentages, the growth rate in the operations above was 118%, 130%, and 143%, respectively.





- **Decrease in Output Per Hour of Work** – the output per hour of work is defined as the average amount of cargo in tons per actual hour of work of general cargo and bulk cargo ships and as the number of containers in container ships. Concerning containers, at Ashdod port, the output per hour of work in 2017–2021 decreased from 43.3 to 39.1 containers per hour of work (a decrease of about 10%). In 2022, there was an 8% increase in output per hour of work at Ashdod Port compared to 2017. At Ashdod Port, in 2017–2022, the output per hour of work for general cargo and bulk cargo decreased from 136 to 116 tons per hour and from 258 to 195 tons per hour, respectively, and in percentages – a decrease of 14.7% and 24.4% respectively. In 2017–2022, in the Port of Haifa, output per hour of work in containers, general cargo, and bulk cargo, decreased from 58.6 to 46.6 containers, from 127 to 108 tons, and from 167 to 126 tons, and in percentages – a decrease of about 20.5%, 14.9%, and 24.6%, respectively.
 - **Decrease in the Port's Responsiveness to the Demand for Allocation of Work Crews ("hands")** – this index reflects the average ratio between the total number of hands (crews) the ship's agents order on a working day for handling cargo and the number of hands assigned on that particular day. Meeting 80% of the demand for hands is considered fully meeting the demand of the ship's agents. It was found that in 2017–2022, the responsiveness to the demand for hands was declining. For most cargo types, the rate was generally much lower than 80% in each of the years 2017 and 2022. At the Port of Ashdod, in containers, general cargo, and bulk cargo, there was a decrease of 24%, 60%, and 70%, respectively, in 2022 compared to 2017. At Haifa Port, the rates were 36%, 63%, and 60%, respectively. At the Ashdod Port Company, the rate of responsiveness to hands was lower in 2017–2022 than the Haifa Port Company rate, which added to the downward trend at both ports.
-  **Assigning Crews to Shifts** – it was found that most of the crews assigned to unloading and loading at the ports of Ashdod and Haifa were assigned to the first shift (06:30–14:30), while the rate of assigning crews to the second (15:00–22:30) and third shift (22:30–05:30) was declining. The decline was less steep about containers, but about general cargo and bulk cargo, there was a considerable decline – from allocation of 56% and 52% to the first shift at Ashdod and Haifa Ports, respectively, to a rate of 9% and 8% to the third shift. The causes for the decline were, amongst other things, labor agreements, factories' inability to receive cargo at night, and safety instructions. This situation leads to an extension of ships' dwell time and waiting time and to non-optimal utilization, to the point of structural unemployment, of the docks, and of the unloading and loading equipment, which does not operate at full capacity or close to it.
-  **Assignment of Operational Workers at Ashdod Port** – in 2018–2022, between 13.8% and 22.0% of the operational workers were not assigned to unloading and loading tasks. In 2021 and 2022, the rate of the operational workers who were not assigned was higher compared to previous years (19.7% and 22.0%, respectively), which may indicate




an inefficient utilization of human resources and even affect the ships' operation queues. In 2021, which was characterized by damage to the global supply chain, a steep increase in the number of waiting ships also began, up to a peak of 77 ships in May 2021.

 **The Cessation of Unloading Work at the Port of Ashdod due to Reaching the Total Premium for Certain Types of Cargo** – premium agreements are supposed to increase workers' motivation to increase productivity and shorten dwell time at the port. It was found that for certain types of cargo (metals and iron, which make up about 3% of the port's activity, according to the Ashdod Port Company), a work crew designated to unload ships at the Port of Ashdod, which reaches the level of output for which it will receive the most premium, stops the unloading work and waits until the end of the shift since continuing the work will not yield any additional income. It was further shown that at Ashdod Port, the premium agreements include inefficient and ineffective components, causing cessation of work instead of continuing work with increased output, which is contrary to the purpose of the premium mechanism, intended to increase the output and the level of efficiency.

 **Utilization of Reserve Docks to Reduce Congestion at the Ports** – it was found that in July 2021, there was a request from the Bay Port to utilize the reserve docks to handle general cargo, to reduce congestion. However, the handing over of the docks to the new ports by the Ministries of Transport and Finance was delayed and executed only in April 2022.

 **Operation Queue Rules** – the operation queue policy is anchored in the Port Regulations and regulates the following issues: the procedures of entering and exiting the port and the order of precedence for certain ships entering and leaving the port. In addition, the policy also states which docks are defined as commercial docks, for which the Administration of Shipping and Ports has determined that their availability to vessels will be determined following an agreement between the port operator and the ship's owner. It was found that the operation queue rules established by the Administration of Shipping and Ports in 2008 and their updated versions do not reflect the changes in the competitive environment in recent years, with an emphasis on the operation of the new ports: the rules create inefficiency about the entry and exit of ships; they include a broad definition of hazardous materials, which prioritize certain types of cargo unjustifiably; for example, priority is given to container ships over general cargo ships, even if they wait for more than 24 hours. Moreover, the priority established in the operational queue rules for livestock ships is sometimes not realized due to the prioritization of other ships.

 **International Comparison of Dwell Time and Service Level at Israel's Ports Compared to Ports in Other Countries** – it was found that the Administration of Shipping and Ports, Israel Ports Company, and the Ashdod Port Company do not conduct international comparisons of service-related indicators. Thus, they do not fulfill the Administration of Shipping and Ports' obligation to do so according to the Shipping and Ports Authority Law, 2004, and the Israel Ports Company's obligation according to its



authorization, although such a comparison, had the Ashdod Port Company carried it out, would have allowed it to examine the quality of service it provides to its customers. In an international comparison conducted by the State Comptroller's Office, based on research conducted by the World Bank in collaboration with (S&P)³, and based on UN data, Israel's ports were demonstrating a low level of performance in dwell time indicators, compared to ports in other examined countries, and about all main types of cargo: general dry cargo, bulk cargo, and containers. The Port of Ashdod was ranked second to last in the general ranking of 2021 according to dwell time within the comparison group (13th place out of 14 ports). The low level of performance relative to comparable ports makes it difficult for importers and exporters to compete and causes economic damage.



Unavailability of Scoops and Funnels and Equipment for Unloading Bulk Cargo

– as for bulk cargo, an increasing trend of average unavailability of scoops and funnels was found at Ashdod Port in 2018–2022, to the point of almost complete unavailability (100%), which reached its peak in April 2022. During this period, the work was carried out using equipment not designated for handling bulk cargo, such as cranes with a handle. As for general cargo, different types of arm cranes for handling general cargo and bulk cargo were unavailable mainly due to inadequate breakdown maintenance for many months and forced unavailability.



Unloading Imported Grains in Ashdod and Haifa – in 2021, about 5.6 million tons of grains were imported to Israel. About 75% of the imported grains are intended for animals and the rest for humans, and they are used as raw material in the food industry for both humans and animals. Grains are an essential part of human nutrition, and a shortage of grains may lead to a shortage of flour and flour-based products such as bread, rice, and pasta and a shortage of animal food products, such as milk, dairy products, eggs, and meat. 84.9% of imported grains are unloaded in the Haifa port area, and only 15.1% are unloaded at Ashdod port despite the demand for grains being divided between the north and the south at a rate of 55% and 45%, respectively. The reasons for that are the poor service level at Ashdod Port, delays in the operation of the grain conveyor, and, according to the Ashdod Port Company, a shortage of truck drivers. In practice, the scope of unloading grains at Ashdod Port does not reflect the distribution of demand between the north of Israel and the south of Israel. It was further found that the grain conveyor at the Port of Ashdod was handed over for operation in January 2023, which is nine months behind the original schedule, 12 years after the Minister of Finance and the Minister of Transport decided to build the conveyor in October 2010, and with a deviation of about NIS 12 million from the original budget of NIS 225 million.

3 Ports' performance can be measured based on a set of indicators, such as: port capacity or utilization of storage areas, costs, the degree of connectivity between different areas in the port, services provided at the port and other indicators. The World Bank report in collaboration with Standard & Poor's (S&P) is based on available empirical data exclusively associated with the dwell time of ships at the port. This report should be considered as an indicative, though not absolute, measure of the port's performance in terms of handling containers.



Relative Efficiency of the Port of Ashdod in Handling 8,001 TEU⁴ up to 13,500 TEU Container Ships – the Ashdod Port ranks relatively high in handling these ships compared to the group of comparable ports and is ranked third out of 11 ports (73% of the ports are lower in rank).

Promoting Competition in the Containers – the market share of the Bay Port in the Haifa Port area and the South Port in the Ashdod Port area in 2022 in containers was 29.6% and 10.4%, respectively, which indicates a process of creating competition between the new ports and the existing ones, and is mainly evident at the Bay port in containers. However, the market segmentation of containers, a year and a half after the new ports began operation, does not indicate full exploitation of the competitive potential.

Key Recommendations



Given the importance of ports to Israel's economy and their impact on the cost of living, it is recommended that the Ministers of Transport and Finance improve the efficiency of cargo handling at Israel's ports and shorten the dwell time of ships at the gates. Furthermore, the ministers should ensure that the audited bodies, under their responsibility and authority, rectify the reports deficiencies and monitor their implementation. Among other things, it is recommended that the Ministry of Transport, the Ministry of Finance, and the Israel Ports Company reduce the shortage of drivers and trucks, consider renovation of the railroad, and address the problems presented by the users, ports' representatives and the chair of Israel Road Transport Board.



It is recommended that the Ministry of Transport and the Administration of Shipping and Ports cooperate with the ports to examine the reasons for the high number of waiting ships, to reduce their number, to set objectives for the ships' dwell time, so they are within the acceptable range according to an international comparison with comparable ports and follow-up on the realization of the objectives. It is further recommended to examine the structural reasons for the decline in the service level at the audited ports (Ashdod, Haifa, and Israel Shipyards Port), especially in the general cargo and bulk cargo, and to consider regulatory solutions as much as possible to increase the efficiency of handling these types of cargo. Furthermore, it is recommended to set objectives to increase efficiency, and in particular to increase productivity and improve service levels, while creating monitoring and

⁴ Twenty-foot Equivalent Unit – a capacity unit of cargo equivalent to the capacity of a standard container that is 20 feet long. Containers are manufactured in different sizes, and cargo capacity in the shipping industry is usually indicated as capacity units of a 20-foot-long container.



reporting mechanisms about the necessary steps and progress to meet the objectives, and, if necessary, adjust the wage agreements to the new objectives.



It is recommended that the Ashdod Port Company, the Administration of Shipping and Ports, and the Ministry of Transport examine the reasons for the inefficient allocation and asymmetric distribution of work shifts in cargo unloading at the Port of Ashdod and, if necessary, incentivize operational workers and cargo owners to unload cargo at night as well. The bodies above should also increase the number of operational workers assigned at the Port of Ashdod to optimize cargo handling at the port. It is recommended that Ashdod Port Company examine the reasons for the high rate of unavailability of unloading equipment and increase the level of equipment availability, given the effect that unavailability has on the level of service and the volume of ship queues.



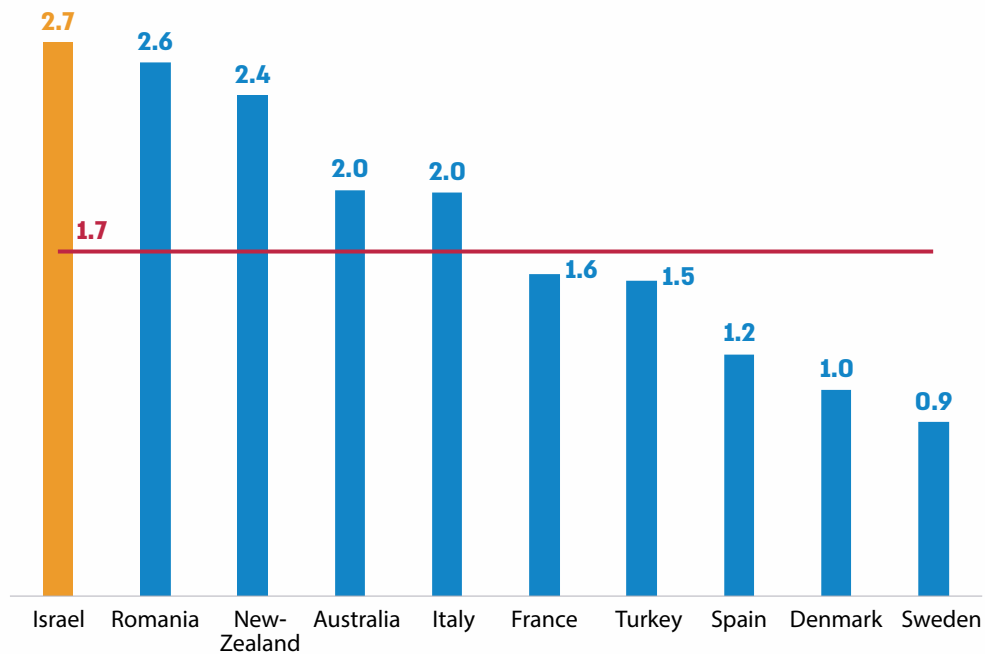
It is recommended that the Ministry of Transport and the Ministry of Finance examine the consequences of granting authorization to the new ports (the Bay Port and the South Port) to operate the reserve docks and the need for their continued operation to handle general cargo so that the new ports have long-term certainty and so that there is competition in general cargo as well, decreasing the cost of port services, reducing the volume of queues and, by implication, reduce the cost of living, following government policy. It is recommended that the Port of Ashdod, Israel Ports Company, the Ministry of Transport, and the Administration of Shipping and Ports ensure that the scope of unloading grains in the Haifa Port area and at the Port of Ashdod complies with the demand for grains in the north and the south, to prevent the need for shipping of grains to the center and the south by trucks, and to reduce the risk of shortage of such a basic product during an emergency, in case one of the granaries does not function.



It is recommended that the Ministry of Transport and the Administration of Shipping and Ports update the operation queue policy to the changes in the port sector in recent years, including the introduction of new ports, the privatization of Haifa Port and handing over maritime traffic management to maritime traffic companies; at the same time, they should also examine and refer to reservations of the various professional entities operating in the industry.



Median Dwell Time at Comparable Ports of Countries for Ships Carrying Bulk Cargo, (Dry Break Bulk) 2021* (in days)



According to UNCTAD data processed by the State Comptroller Office.

* The calculation of the average dwell time at comparable ports does not include Israel.



Summary

The audit findings found that the level of service and operational efficiency of Israel's ports are low compared to previous years and compared to similar and comparable ports in other countries. All of the above lead to reduced productivity, harm exports, harm the import component of investment products, and ultimately affect the cost of living. Since 2018, there has been a decrease in the level of service compared to the level in 2017, which is reflected in longer waiting times and dwell times for ships, which increased by hundreds of percent compared to 2017 and reached a peak during the Covid-19 period in 2021. There is also a decline in output per hour of work for all the types of cargo specified above, especially bulk cargo. In 2022, there was an improvement in waiting and dwell times, but they were still tens of percent higher than their level in 2017. The output per hour of work at the Port of Ashdod, mainly about general and bulk cargo, decreased compared to 2017. The efficiency problem at the Port of Ashdod is also reflected in the level of responsiveness to the allocation of hands, which fell by tens of percent compared to 2017. It was further found that for various reasons, between 13.8% and 22.0% of operational workers, who could have minimized the operation queue, were not assigned to unloading and loading tasks. It was further found that in 2018–2022, in the Port of Ashdod the unavailability of specialized equipment increased, including cranes, scoops, funnels, and additional cargo handling equipment. This increase was mainly caused by faulty breakdown maintenance and a very low level of preventive maintenance performed by the Ashdod Port Company. All of the above indicates that the queue of ships waiting outside Ashdod Port was affected not only by the Covid-19 crisis but also by structural operational problems, which include, among other things, low efficiency of cargo handling and the unavailability of specialized equipment at Ashdod Port, which are among the factors that affect the efficiency of cargo handling work.

Due to the importance of the ports to Israel's economy, it is recommended that the Ministry of Transport, the Administration of Shipping and Ports, and the Ashdod Port Company rectify the report's deficiencies. Among other things, they should increase service levels for all types of cargo, including shortening dwell and waiting times, increasing output per hour of work, increasing availability of cargo handling equipment, and increasing responsiveness to the demand for hands. This is possible through streamlining work procedures, among other things, according to international comparisons with comparable ports, appropriate and sufficient allocation of work teams, and operational flexibility, which will enable quick response to crises and optimal assignment of operational workers at the ports. These will lower the costs of maritime shipping and, as a result, reduce the cost of living in Israel and improve the employment situation in the industries that use imported raw materials.