The National Impact of a Los Angeles and Long Beach Port Stoppage

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The National Impact of a Los Angeles and Long Beach Port Stoppage

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Executive Summary

As of June 15, 2022, the Pacific Maritime Association (PMA) and International Longshore and Warehouse Union (ILWU) are engaged in labor negotiations. An interruption of operations would negatively impact economic activity and reduce employment in the region and across the country. Furthermore, any port stoppage would only exacerbate the current backlogs associated with the COVID-19 pandemic. Economic activity would be harmed through three main channels: export loss, import delay and higher costs, and reduced purchasing power for consumers.

This analysis uses the Inforum LIFT economic model to quantify the impacts of a 15-day closure at the Los Angeles and Long Beach ports. Specifically, it estimates how such a closure would impact U.S employment, output, and income.

Impacts are summarized in Table E1. The table displays the baseline levels and the alternative simulation results as absolute differences and percent deviations from the baseline. The most significant consequences for the economy are in 2022. Compared to the baseline, the reduction of GDP for 2022 is $7.6 billion (-0.03 percent of GDP) for the 15-day disruption scenario. The daily cost of this disruption would be about a half-billion per day. Total employment losses are 41,000 in 2022, of which 6,100 are in manufacturing and 15,400 in retail trade. However, reductions are spread across the economy. While lost availability of supplies and equipment directly causes losses in some sectors, additional jobs are lost when consumers lose real income and, thus, reduce spending.

The economic costs of a dispute that results in a port closure would be detrimental to consumers and businesses who are already enduring historically high levels of inflation.

Table E1. Annual Macroeconomic Simulation Results

	2022	2023
Real GDP (Billions of 2021$)	23,955	24,061
Difference (Billions of 2021$)	-7.6	9.8
Percent Difference	-0.03	0.04
Real Exports (Billions of 2021$)	2,862	2,952
Difference (Billions of 2021$)	-2.4	-0.8
Percent Difference	-0.08	-0.03
Real Imports (Billions of 2021$)	4,402	4,577
Difference (Billions of 2021$)	-8.1	-4.7
Percent Difference	-0.18	-0.10
Import Prices (Percent Difference)	0.45	0.11
Consumer Prices (Percent Difference)	0.07	0.00
Payroll Employment (Thousand Employees)	166,427	166,964
Difference (Thousand Employees)	-41.0	-18.5
Percent Difference	-0.02	-0.01
Real Personal Income per Household (2021$)	162,541	162,150
Difference (2021$)	-145.8	18.4
Percent Difference	-0.09	0.01

1. Introduction

As of June 15, 2022, the Pacific Maritime Association (PMA) and International Longshore and Warehouse Union (ILWU) are engaged in labor negotiations. Any disruption in port activity could result in significant and widespread economic consequences.

An interruption of operations would negatively impact economic activity and reduce employment in the region and across the country. Furthermore, any port stoppage would only exacerbate the current backlogs associated with the COVID-19 pandemic. Economic activity would be harmed through three main channels: export loss, import delay and higher costs, and reduced purchasing power for consumers.

Los Angeles and Long Beach are two of the largest ports affected by the negotiations. Both ports are critical components of the United States' transportation infrastructure. Recent statistics show that more than one-third of incoming container traffic is moved through the two ports[1].

This analysis uses the Inforum LIFT[2] economic model to quantify the impacts of a 15-day closure at the Los Angeles and Long Beach ports. Specifically, it estimates how such a closure would impact U.S employment, output, and income.

[1] Source: https://usatrade.census.gov/; Calculated as LA and Long Beach share of national customs containerized vessel imports.
[2] More information about the Inforum LIFT model is available at https://inforumecon.com/economic-models/

2. Methodology

The first step of the analysis is to build a database of trade activity by port and commodity. This task is accomplished by downloading U.S. Census data[3] and aggregating data based on Harmonized System (HS) codes[4] to Inforum LIFT model commodities. Each commodity is classified as a low-value, high-value, or perishable good.

The next step is to generate assumptions regarding how a particular commodity would be impacted by a port stoppage. For example, some products (including perishables) would be lost. In other cases, however, there is the potential for goods to be simply delayed or rerouted. Using rerouting and delay parameters as explained below, we compute the annual "net" disruption as percentages of port capacity.

Next, the trade data and assumptions are entered into the Inforum LIFT model that was calibrated otherwise for a base scenario from 2022 to 2023. For this study, it is assumed that a port stoppage occurs over 15 days in 2022.

The LIFT model is an annual dynamic interindustry macroeconomic tool that provides a general equilibrium (economy-wide) framework with a "bottom-up" accounting of the U.S. economy. It contains a detailed industry (input and output) supply-and-demand structure embedded in the National Income and Product Accounts macroeconomic framework. Industry-level shocks work through the model via multiple pathways, such as shortages of consumer goods (e.g., clothing) or the disruption of key supply chain items (e.g., motor vehicle parts). The LIFT model is, therefore, particularly suited to analyze the economic impact of an event that affects industries differently, such as a port stoppage.

Since export quantities and import prices are exogenous in the standard LIFT model, they are the most convenient variables to use as levers to simulate the trade effects of port interruptions. On the export side, the model traces how the direct loss of export volume affects production and employment across the entire supply chain and how those losses reduce overall income and demand. For imports, the model shows how higher delivered prices for various imports raise business costs and consumer prices, thus reducing the purchasing power of both. Increases in operating and capital costs cascade through the economy to reduce competitiveness, real incomes, and, ultimately, final demand. To the extent that domestic supply fills in for more expensive imports, the cost-push impact is reduced.

At the outset of port closures, even a mitigated loss of trade flow means that important economic activity would be disrupted, and firms and consumers would face higher costs. These speed bumps can be significant. An important characteristic of competitive and modern supply chains is the orchestrated and speedy integration of goods, services, and information. Interruption to flows within these supply chains can be particularly costly, especially to manufacturers, retailers, and consumers.

[3] https://usatrade.census.gov/
[4] https://www.trade.gov/harmonized-system-hs-codes

Moreover, long delays and rerouting mean that finished consumer goods would be sold at a discount if they miss essential sell dates, such as the start of the school year or the holiday shopping season, leading to lost sales revenue, profits, and wages. Even after operation of the ports is fully restored in the subsequent weeks and months, ports would be dedicated partly to recovering delayed trade flows. Therefore, economic effects linger well past the event, including higher supply chain costs, reduced business investment, damage to export relationships, and lower consumer income and purchases.

3. Developing Assumptions for Port Scenarios

Table 1 displays the proportion of total annual trade that flows through Los Angeles and Long Beach ports (combined) for each LIFT commodity. The percent share was calculated as the amount of vessel-based trade flowing through the two ports relative to total U.S. trade of the commodity.

Additionally, Table 1 indicates the value classification for each LIFT commodity as perishable, low-value, or high-value. Low-value and high-value goods were distinguished based on their dollar value per kilogram. Commodities with values of less than $10 per kilogram were considered low-value; those with values of $10 per kilogram or greater were classified as high-value.

Table 1. Value Share of Total Trade Routed Through Los Angeles and Long Beach Ports by LIFT Trade Commodity (2019–2021 Average Percent Share)

LIFT Trade Commodity	Exports Share (%)	Exports Value Class	Imports Share (%)	Imports Value Class
Crop production	11.6%	perishable	4.5%	perishable
Animal production	1.3%	perishable	1.5%	perishable
Forestry, fishing and agriculture support activities	4.6%	perishable	11.9%	perishable
Coal mining	0.9%	low value	0.0%	low value
Metal ore mining	4.5%	low value	1.1%	high value
Nonmetallic mineral mining	3.4%	low value	2.3%	low value
Dairy products, meat and seafood	18.0%	perishable	13.1%	perishable
Other foods	9.0%	perishable	8.3%	perishable
Beverages	6.8%	low value	6.7%	low value
Tobacco	0.9%	high value	5.4%	high value
Textiles and textile products	4.1%	low value	25.5%	low value
Apparel and leather	13.0%	low value	38.9%	high value
Wood products	2.9%	low value	9.1%	low value
Paper	6.4%	low value	12.7%	low value
Printing	2.7%	low value	30.5%	low value
Petroleum and coal products	0.7%	low value	7.6%	high value
Resin, synthetic rubber and fibers	6.3%	low value	9.3%	low value
Pharmaceuticals	0.6%	high value	0.9%	high value
Other chemicals	4.6%	low value	6.8%	low value
Plastic products	4.8%	low value	23.8%	low value
Rubber products	3.1%	low value	24.4%	low value
Nonmetallic mineral products	7.2%	low value	15.6%	low value
Iron and steel	7.2%	low value	6.7%	low value
Nonferrous metals	4.0%	low value	2.4%	low value
Fabricated metal products	3.5%	high value	22.3%	low value
Agriculture, construction and mining machinery	3.7%	high value	6.9%	low value
Industrial machinery	2.0%	high value	25.0%	high value
Commercial and service industry machinery	1.5%	high value	12.6%	high value
Ventilation, heating, air-conditioning and ventilation equipment	3.4%	high value	19.2%	low value
Metalworking machinery	6.4%	high value	18.3%	high value
Engine, turbine and power transmission equipment	5.2%	high value	10.6%	low value
Other general purpose machinery	5.3%	high value	16.3%	low value
Computers and peripheral equipment	0.6%	high value	9.1%	high value
Communications and audio-video equipment	1.6%	high value	14.8%	high value
Semiconductors and other electronic components	0.2%	high value	7.2%	low value
Electromedical and electrotherapeutic apparatus	2.5%	high value	4.7%	high value
Search, detection and navigation equipment	2.7%	high value	13.9%	high value
Measuring and control instruments, and media	1.1%	high value	4.8%	high value
Household appliances	9.2%	high value	41.0%	low value
Electrical equipment	2.6%	high value	14.6%	high value
Other electrical equipment and components	3.8%	low value	20.4%	low value
Motor vehicles	3.0%	low value	5.4%	high value
Motor vehicle parts	4.4%	high value	13.8%	low value
Aerospace products and parts	1.0%	high value	0.8%	high value
Ship and boat building	2.3%	high value	2.7%	high value
Other transportation equipment	4.8%	high value	32.5%	low value
Furniture	4.7%	low value	25.9%	low value
Medical equipment and supplies, dental labs, ophthalmic goods	1.2%	high value	12.7%	high value
Miscellaneous manufacturing	2.1%	high value	23.6%	low value
Noncomparable imports	0.2%	high value	1.3%	low value
Average Shares by Commodity Type	3.8%	low value	13.7%	low value
	2.0%	high value	11.3%	high value
	11.2%	perishable	8.5%	perishable
Total Average Shares	3.6%		12.3%	

Next, the information in Table 1 was used to estimate the annual disruption of imports and exports by value classification. We assume the relative magnitude of trade and price disruptions should be proportional to the share of total exports and imports that normally flow through the affected ports relative to total U.S. annual levels. Moreover, these estimates consider the rerouting of goods and trade that is delayed but eventually recovered, albeit at a higher cost. Rerouting and recovery parameters vary across commodities, depending on their relative value and perishability.

Tables 2a, 2b, and 2c display these parameters for imports. Tables 3a, 3b, and 3c display the same information for exports.

The first column of Table 2 (column a) represents the proportion of imports that is interrupted and not rerouted to other available ports and/or transport modes. If 100 percent of trade is disrupted, then there is no rerouting. If 90 percent of trade is interrupted, then 10 percent of trade is rerouted. The disruption proportion is lower for higher-value and perishable imports, signifying those traders are more likely to expedite deliveries of these imports through rerouting or via other modes, such as air and land.

While trade is delayed, we assume that most imports would ultimately reach their destinations. The second column (b) of Table 2 shows the proportion of delayed trade that is ultimately recovered, not including rerouted trade. A value of 90 percent means that only 10 percent of the trade interrupted in the period is ultimately lost. The recovery proportion is generally higher for lower-value items where importers can afford to wait longer for delivery. For higher-value items, consumers are assumed to be more willing to switch sources, and so the recovery parameter is lower.

The ultimate loss to import flows in trade days is computed as indicated in Table 2. The 15-day stoppage is divided into three 5-day segments, each with its own disruption and recovery patterns. For each segment, the first step is to multiply the "days disrupted" (column c) by the interruption parameter (column a) to yield "gross trade disrupted" in days (column d). We then multiply that disruption by the recovery parameter (column b) to find the "eventual trade recovered" (column e) in days. Subtracting the recovery from the disruption provides the "net trade disrupted equivalent" (column f) in days.

For illustration, examine the 15-day scenario for lower value imports shown in Table 2a. In the first 5-day segment (first row), we assume that no trade is rerouted and 90 percent of trade is recaptured. Consequently, column f indicates that only 0.5 days of trade are lost in a 5-day closure, just 10 percent of the five days of trade potentially affected.

This 0.5-day loss is annualized by assuming 365 days per year of port operations (column g). Therefore, a loss of 0.5 days of trade is equivalent to 0.14 percent of low-value imports flowing through the Los Angeles and Long Beach ports in a year.

The second and third 5-day segments (second and third rows) of Table 2a use slightly different disruption and recovery parameters. Consequently, the annual disruption grows in magnitude. In total, a 15-day stoppage would result in a 0.80 percent reduction in low-value imports.

Recall that Table 1 provides estimates for Los Angeles and Long Beach's share of total U.S. trade for each of the three value classifications. Over the 2019 to 2021 period, these two ports are responsible for an average of 13.7 percent of low-value imports. Therefore, a 15-day disruption means an average loss of low-value imports of 0.11 percent (0.8 percent x 13.7 percent). The corresponding values for high-value and perishable imports are 0.12 percent and 0.17 percent, respectively.

Table 2a. Disruption Assumptions for Low-Value Imports

Port Capacity Disrupted (100 – Reroute)	Proportion Trade Recovered	Days Disrupted	Gross Trade Disrupted	Eventual Trade Recovered	Net Trade Disrupted Equivalent	Annual Percentage Disruption
(%)	(%)	(Days)	(Days)	(Days)	(Days)	(%)
(a)	(b)	(c)	(d) = (a x c)	(e) = (b x d)	(f) = (d – e)	(g) = (f) / 365
100%	90%	5.0	5.0	4.5	0.5	0.14%
100%	80%	5.0	5.0	4.0	1.0	0.27%
95%	70%	5.0	4.8	3.3	1.4	0.39%
Total		15.0	14.8	11.8	2.9	0.80%

Los Angeles + Long Beach Ports Share of Low Value Imports	13.7%
Approximate National Import Disruption (15-Day Closure)	0.11%

Table 2b. Disruption Assumptions for High-Value Imports

Port Capacity Disrupted (100 – Reroute)	Proportion Trade Recovered	Days Disrupted	Gross Trade Disrupted	Eventual Trade Recovered	Net Trade Disrupted Equivalent	Annual Percentage Disruption
(%)	(%)	(Days)	(Days)	(Days)	(Days)	(%)
(a)	(b)	(c)	(d) = (a x c)	(e) = (b x d)	(f) = (d – e)	(g) = (f) / 365
100%	80%	5.0	5.0	4.0	1.0	0.27%
90%	70%	5.0	4.5	3.2	1.4	0.37%
80%	60%	5.0	4.0	2.4	1.6	0.44%
Total		15.0	13.5	9.6	4.0	1.08%

Los Angeles + Long Beach Ports Share of High Value Imports	11.3%
Approximate National Import Disruption (15-Day Closure)	0.12%

Table 2c. Disruption Assumptions for Perishable Imports

Port Capacity Disrupted (100 – Reroute)	Proportion Trade Recovered	Days Disrupted	Gross Trade Disrupted	Eventual Trade Recovered	Net Trade Disrupted Equivalent	Annual Percentage Disruption
(%)	(%)	(Days)	(Days)	(Days)	(Days)	(%)
(a)	(b)	(c)	(d) = (a x c)	(e) = (b x d)	(f) = (d – e)	(g) = (f) / 365
100%	60%	5.0	5.0	3.0	2.0	0.55%
95%	50%	5.0	4.8	2.4	2.4	0.65%
90%	40%	5.0	4.5	1.8	2.7	0.74%
Total		15.0	14.3	7.2	7.1	1.94%

Los Angeles + Long Beach Ports Share of Perishable Imports	8.5%
Approximate National Import Disruption (15-Day Closure)	0.17%

Tables 3a, 3b, and 3c show the same computations for exports. Exporters are assumed to have better opportunities for rerouting merchandise, especially for high-value and perishable products. Therefore, the trade disruption parameters are slightly lower than those for imports. On the other hand, since foreign customers are more likely to reach out to alternate suppliers, trade recovery for exports is lower than imports and falls to just 30 percent for perishable items.

On a national basis, Table 3c indicates that Los Angeles and Long Beach ports ship about 11.2 percent of perishable exports over a year. Therefore, the total national loss of perishable exports is 0.25 percent for a 15-day closure. An equivalent 15-day closure would reduce annual exports by 0.04 percent for high-value exports and 0.06 percent for low-value exports. These shares might appear small at first glance, but it is important to consider the potential impact in level terms. In total, billions of dollars in exports are potentially impacted by a 15-day closure of the Los Angeles and Long Beach ports.

The final step is to turn these assumptions into control parameters for the LIFT model. To develop the 2022 import price shocks for each commodity, the annual percentage trade disruption is multiplied by the inverse of the LIFT import equation price elasticity. All other things being equal, the price shock should reduce the import quantities by the appropriate amounts indicated on the tables. The percentage losses of export volumes are applied directly to the exogenous commodity export levels for the model.

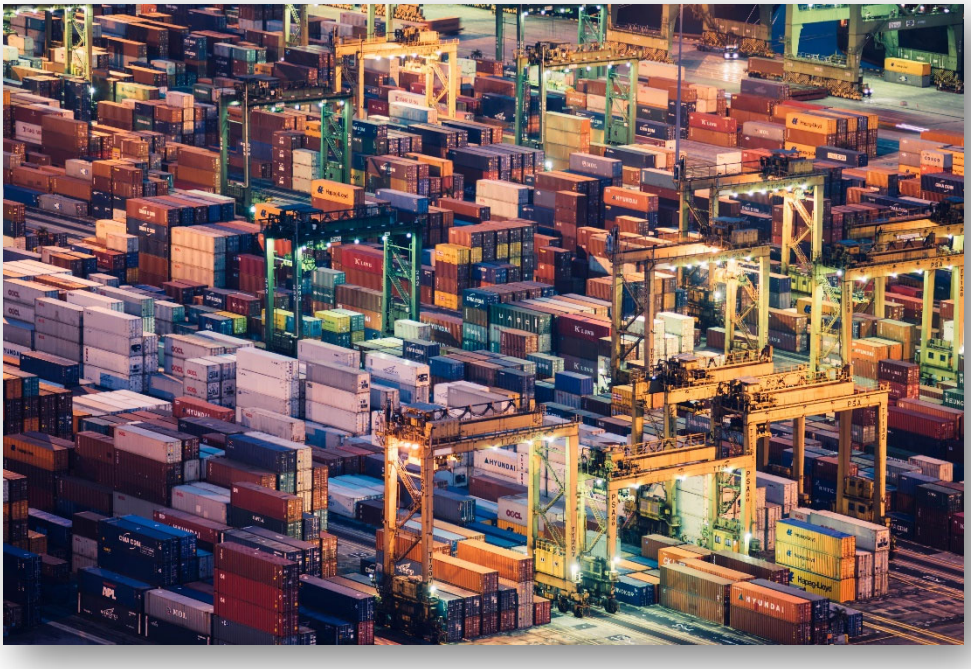

Table 3a. Disruption Assumptions for Low-Value Exports

Port Capacity Disrupted (100 – Reroute)	Proportion Trade Recovered	Days Disrupted	Gross Trade Disrupted	Eventual Trade Recovered	Net Trade Disrupted Equivalent	Annual Percentage Disruption
(%)	(%)	(Days)	(Days)	(Days)	(Days)	(%)
(a)	(b)	(c)	(d) = (a x c)	(e) = (b x d)	(f) = (d – e)	(g) = (f) / 365
100%	70%	5.0	5.0	3.5	1.5	0.41%
95%	60%	5.0	4.8	2.9	1.9	0.52%
90%	50%	5.0	4.5	2.3	2.3	0.62%
Total		15.0	14.3	8.6	5.7	1.55%

Los Angeles + Long Beach Ports Share of Low Value Exports	3.8%
Approximate National Export Disruption (15-Day Closure)	0.06%

Table 3b. Disruption Assumptions for High-Value Exports

Port Capacity Disrupted (100 – Reroute)	Proportion Trade Recovered	Days Disrupted	Gross Trade Disrupted	Eventual Trade Recovered	Net Trade Disrupted Equivalent	Annual Percentage Disruption
(%)	(%)	(Days)	(Days)	(Days)	(Days)	(%)
(a)	(b)	(c)	(d) = (a x c)	(e) = (b x d)	(f) = (d – e)	(g) = (f) / 365
100%	60%	5.0	5.0	3.0	2.0	0.55%
90%	50%	5.0	4.5	2.3	2.3	0.62%
85%	40%	5.0	4.3	1.7	2.6	0.70%
Total		15.0	13.8	7.0	6.8	1.86%

Los Angeles + Long Beach Ports Share of High Value Exports	2.0%
Approximate National Export Disruption (15-Day Closure)	0.04%

Table 3c. Disruption Assumptions for Perishable Exports

Port Capacity Disrupted (100 – Reroute)	Proportion Trade Recovered	Days Disrupted	Gross Trade Disrupted	Eventual Trade Recovered	Net Trade Disrupted Equivalent	Annual Percentage Disruption
(%)	(%)	(Days)	(Days)	(Days)	(Days)	(%)
(a)	(b)	(c)	(d) = (a x c)	(e) = (b x d)	(f) = (d – e)	(g) = (f) / 365
100%	50%	5.0	5.0	2.5	2.5	0.68%
90%	40%	5.0	4.5	1.8	2.7	0.74%
85%	30%	5.0	4.3	1.3	3.0	0.82%
Total		15.0	13.8	5.6	8.2	2.24%

Los Angeles + Long Beach Ports Share of Perishable Exports	11.2%
Approximate National Export Disruption (15-Day Closure)	0.25%

4. Annual Simulation Results

Table 4 shows the annual macroeconomic impacts of a 15-day closure at the Los Angeles and Long Beach ports. For each indicator, the table displays the baseline levels and the alternative simulation results as absolute differences and percent deviations from the baseline. GDP, trade, and income deviations are presented in billions of 2021 dollars. Employment deviations are shown in thousands of jobs.

The most significant consequences for the economy are in 2022. Compared to the baseline, the reduction of GDP for 2022 as a whole is $7.6 billion (-0.03 percent of GDP) for the 15-day disruption scenario. The daily cost of this disruption would be about a half-billion per day.

The costs of the port disruption on economic activity and jobs develop through three main channels. The first is through the direct loss of exports. In the 15-day disruption at the Long Beach and Los Angeles ports, the loss of exports would be .08 percent or about $2.4 billion in 2022 and a continuing loss of 0.8 billion in 2023. These losses in exports directly affect the output and jobs of firms producing commodities in those industries and the supply chains that provide inputs to those industries, including transportation, utilities, and other sectors. Furthermore, lower incomes in export supply chains have additional effects on consumer and business investment spending.

Table 4. Annual Macroeconomic Simulation Results

	2022	2023
Real GDP (Billions of 2021$)	23,955	24,061
Difference (Billions of 2021$)	-7.6	9.8
Percent Difference	-0.03	0.04
Real Exports (Billions of 2021$)	2,862	2,952
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Percent Difference	-0.08	-0.03
Real Imports (Billions of 2021$)	4,402	4,577
Difference (Billions of 2021$)	-8.1	-4.7
Percent Difference	-0.18	-0.10
Import Prices (Percent Difference)	0.45	0.11
Consumer Prices (Percent Difference)	0.07	0.00
Payroll Employment (Thousand Employees)	166,427	166,964
Difference (Thousand Employees)	-41.0	-18.5
Percent Difference	-0.02	-0.01
Real Personal Income per Household (2021$)	162,541	162,150
Difference (2021$)	-145.8	18.4
Percent Difference	-0.09	0.01

The second channel is through the higher cost of imports. The import disruption is due to the direct disruption of imports through the affected ports and the reduced demand for imports due to higher prices. The total reduction in imports amounts to $8.1 billion in 2022 and $4.7 billion in 2023.

Many imported goods are destined for assembly lines across the manufacturing sector. These lines could be shuttered temporarily due to a lack of capital equipment or key inputs, thereby idling workers. This reduction drives up the cost of production inputs of domestic firms, damages domestic business, and harms international competitiveness. Such an interruption would also affect imports of finished consumer goods destined for retail stores. This could mean products for the important back-to-school and holiday shopping seasons could be missed, resulting in immediate markdowns and lost sales opportunities.

These effects are best seen in the downstream price impacts of the shocks. One of the direct controls for each alternative simulation is higher import prices for traded commodities. Table 4 provides indicators of how port interruptions would affect annual costs. In 2022, the annualized purchasers' price of imported goods and services rises by 0.45 percent in a 15-day disruption. These increases translate to boosts to personal consumption prices of 0.07 percent.

Since consumers would face higher costs for imports, their overall purchasing power would be reduced. This is the third channel of economic damage. Lower real household expenditures translate to additional lost business and jobs.

The net economic impact is summarized most clearly by the loss of consumer purchasing power relative to the baseline. This figure is defined as "real personal income" (nominal household income divided by consumption prices). This indicator combines the change in income with the loss of purchasing power. In a 15-day disruption, real household income is reduced by 0.09 percent or $146 per household in 2021 prices.

Table 4 also shows that annualized employment is affected significantly as well. In a 15-day scenario, the annualized loss is about 41,000 jobs. The mechanics of the LIFT model specify that employers adjust employment to production losses relatively quickly and completely. However, some employers will preserve labor levels (at least in the earliest stages of any port disruption), thus absorbing some costs of labor idleness.

Table 5 presents the effects on employment for major industries as deviations from the baseline, measured in thousands of jobs. As mentioned, total employment losses are 41,000 in 2022, of which 6,100 are in manufacturing and 15,400 in retail trade. However, reductions are spread across the economy. While lost availability of supplies and equipment directly causes losses in some sectors, additional jobs are lost when consumers lose real income and, thus, reduce spending. Agriculture, mining, and manufacturing producers typically have high labor productivity, so they employ relatively few workers, so absolute job losses are lower than construction, trade, and services sectors. Total job losses fall to 18,500 in 2023.

Table 5. Employment Impacts by Sector
Units: Deviations from base scenario in thousands of employees

	2022	2023
Agriculture, Forestry, and Fisheries	-1.0	0.7
Mining	-0.1	0.0
Utilities	0.0	-0.1
Construction	-2.3	0.9
Manufacturing	-6.1	10.7
Wholesale Trade	-2.6	-1.7
Retail Trade	-15.4	0.6
Transportation	-2.7	-30.6
Information	-0.7	-0.3
Finance, Insurance, and Real Estate	-1.8	4.7
Other Services	-7.1	-5.0

5. Conclusion and Main Findings

We have examined the cost of a 15-day port disruption of the Los Angeles and Long Beach ports. These two ports play an outsized role as a critical component of the nation's transportation infrastructure, especially for the flow of exports out of and imports into the country. If no new agreement between the ILWU and the PMA is reached, disruptions in these two ports alone pose significant economic consequences.

Lost exports would directly reduce the output and employment of exporting firms and indirectly reduce activity in their supply chains. By disrupting tightly integrated U.S. supply chains, the delay and higher cost of imports would also reduce GDP and employment. In addition, because consumers face higher import costs, overall household purchasing power would be reduced. Lower real household expenditures create lost business and jobs. Compared to a baseline forecast assuming no port disruptions, GDP for 2022 is reduced by $7.6 billion (-0.03 percent of GDP). Each day of a port disruption would reduce GDP in 2022 by $0.52 billion. In this scenario, 2022 real household income is reduced by 0.09 percent or $146 per household.

In particular, this study finds that the economic damage of a 15-day disruption in these two ports would slightly weaken the prospects of continued economic recovery in 2022. Even after operations are fully restored after a port disruption, the subsequent weeks and months would be dedicated partly to recovering delayed trade flows. Therefore, economic effects would linger well past the closures, including rising supply chain costs, reduced business investment, damage to export relationships, and lower consumer income and purchases.

The economic costs of a dispute that results in a port closure would be detrimental to consumers and businesses who are already enduring historically high levels of inflation.