Supply Chain Developments and Implications

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The views herein are those of the presenter and do not necessarily reflect those of the Federal Reserve Bank of Kansas City or the Federal Reserve System.
Outlook themes

• Supply chain disruptions have proved to be persistent cost pressures, which have delayed effects on inflation.

• Logistics disruptions span transportation modes, add both cost and delays and are affecting most industries.

• Despite their ubiquity, global supply chain disruptions have varying implications for regional economies due to differences in the types of goods being sourced.

• Many businesses report that they are altering procurement and inventory management strategies to alleviate supply chain pressures over the medium- to long-term.
Transportation costs increased significantly across most modes

Ocean Freight Rates

- World Container Index: Shanghai to Los Angeles
- World Container Index: Composite

Trucking Freight Rates

- Van
- Flatbed
- Specialized
- Refrigerated

Sources: Drewry, Truckstop.com, Bloomberg
In addition to higher costs, businesses are experiencing delays

![Line chart showing the Supplier Deliveries Index from 2010 to 2022. The index is above 50% for most of the period, indicating slower deliveries.]

Sources: ISM, Haver Analytics

Note: A supplier deliveries index above 50 percent indicates slower deliveries and below 50 percent indicates faster deliveries.
Strong import demand is contributing to higher prices for imported materials, whereas these costs were a drag on inflation in recent history.
Over the last several months, growth in the cost to purchase and procure key inputs has grown faster than selling prices charged to consumers.
Higher shipping costs pass through to U.S. core inflation incrementally over the span of several months.
State economies differ in how they respond to rising costs for imported inputs based on their local industry composition.

Source: Sly and Soderbery (2022)

Note: The import demand elasticities are estimated for all non-oil imports into each state.
In 2021, total global shipping costs grew faster in the Tenth District.

Sources: U.S. International Trade Commission, U.S. Census Bureau, and authors' calculations.

Notes: Total freight charges and import values are calculated excluding petroleum imports. Values illustrated in map are percentage point changes in total shipping costs as a share of total imports.