From Raw Materials to Retail: Evaluating Economic Goals Through Supply Chains

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FRE | FEDERAL RESERVE EDUCATION

From Ship to Store

- “Think about the last online order bought. What was the item?
- What steps did it take to reach you?”

Why your purchase matters?

- Consumers buy goods.→ Demand increases.
- Higher demand pressures the supply chain.→ Companies need more skilled workers and better technology to keep goods moving.
- Investing in worker training improves supply chain performance.→ Workers earn more; companies operate more efficiently.
- Efficient supply chains benefit consumers.→ Faster delivery, better availability, and lower prices.

What is the supply chain?

It includes all suppliers (direct and indirect) involved in receiving and fulfilling a customer order

The supply chain begins with the customer and their need or want for a good or service.

The firm aims to maximize value and minimize costs (value added) and increase the supply chain surplus

Supply chains involve a constant flow of information, goods and services and funds.

Consumers and the Supply Chain

- Consumers are central to the supply chain
- The primary role of a supply chain is to satisfy the wants and needs of the consumer and earn a profit
- Firms strive to increase supply chain surplus which is the difference between supply chain costs and consumer surplus.
- For example, if a consumer buys a $500 computer from company X, the $500 represents revenue for company X. However, the surplus represents the difference between the highest price the consumer was willing to pay say $600 and what they pay $500 resulting in a surplus of $100

Firms and the Supply Chain

- Each firm has a competitive strategy which aims to satisfy a customer need or want through goods and services.
- Are you a low cost direct to consumer business or a specialized business that provides variety?
- Does the business sell the product online only or do you have a store front?
- Customer priorities determine a company's competitive strategy

Global and Local Supply Chain

- Supply chains function on two levels: local and global.
- Global supply chains enable specialization, trade, and increased efficiency.
- Local supply chains facilitate regional logistics, transportation, and job opportunities.
- Both levels interact when consumers purchase goods and services.
- Daily purchases impact economic activity.

How Supply chains affect the economy

- Job creation across transportation + logistics
- Disruptions increase costs → higher inflation
- Efficient networks strengthen trade by lowering costs
- Efficient operations and support growth

Broad Social Economic Goals

How do economic and social goals shape the decisions of economic agents in a country?

As societies strive to achieve these goals, they must make choices. Some of these goals are complementary while others involve trade-offs.

Supply Chains Expand or Restrict Economic Freedom

- Global supply chains provide consumers with a variety of goods and services at different prices
- When disruptions occur at ports economic freedom declines- resulting in shortages and higher prices
- Producers exercise freedom by choosing distributors, suppliers, manufacturing locations and transportation modes

- Economic Efficiency is achieved when firms streamline transportation, minimize waste, reduce delays, and optimize technology and labor to deliver products at lower costs.

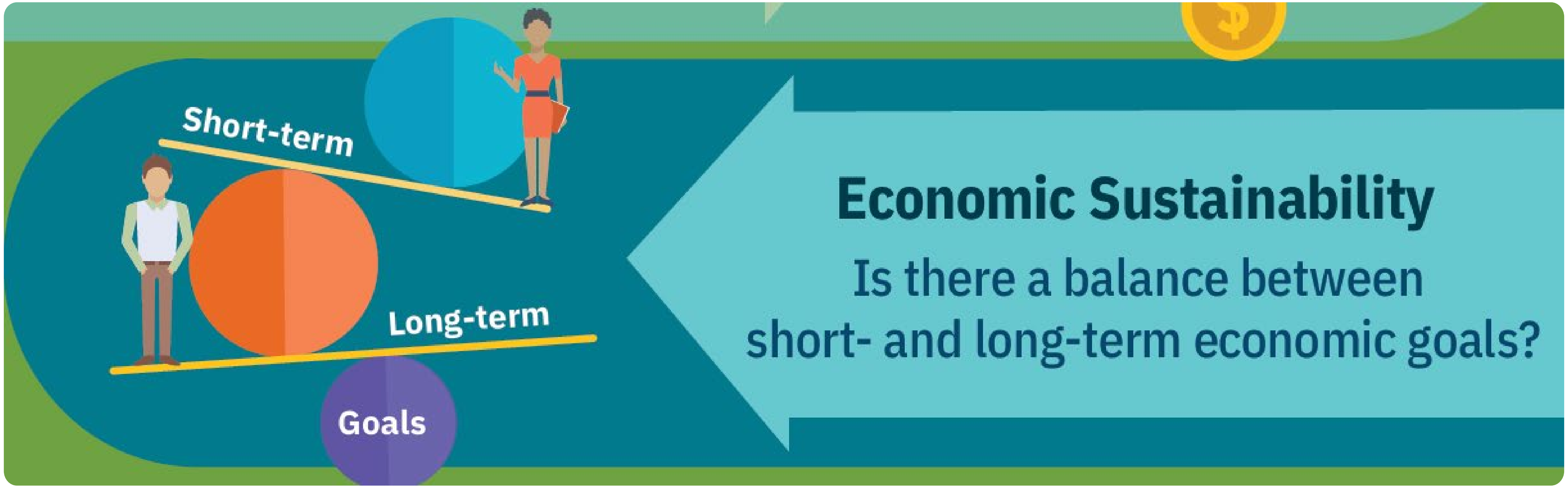
Efficient Supply Chain Lowers Cost

- Economies function best when supply chains reduce waste, shorten delivery times, and streamline transportation.
- When supply chains are efficient, inflation tends to be lower because costs stay under control.
- Digital tools, automation, and training boost efficiency at every stage.

- Issues of fairness involve the equitable distribution of goods, equal access to job opportunities, and addressing regional infrastructure disparities.

Supply Chain Careers creates equity and access for job opportunities

- Opportunity jobs provide pathways to higher wages through certifications
- Investing in training results in equity for students who would not be aware of these viable opportunities
- Equity create fair access to goods as disruptions negatively impacts low-income communities more



- Sustainability emphasizes reducing environmental impact, optimizing energy use, and developing supply chains that can withstand disruptions.

Supply Chain Sustainability Goals

- Sustainable supply chains reduce impact on the environment during shocks because of forecasting
- Sustainability efforts include nearshoring, capital investments, renewable energy use in logistics, and waste reduction strengthen long-term stability.
- Sustainability prepares economies for disruptions caused by climate events and geopolitical risk and aims to minimize their impact.

- Growth in the economy is driven by innovation within companies, improved efficiency, and investments in advanced logistics technologies.

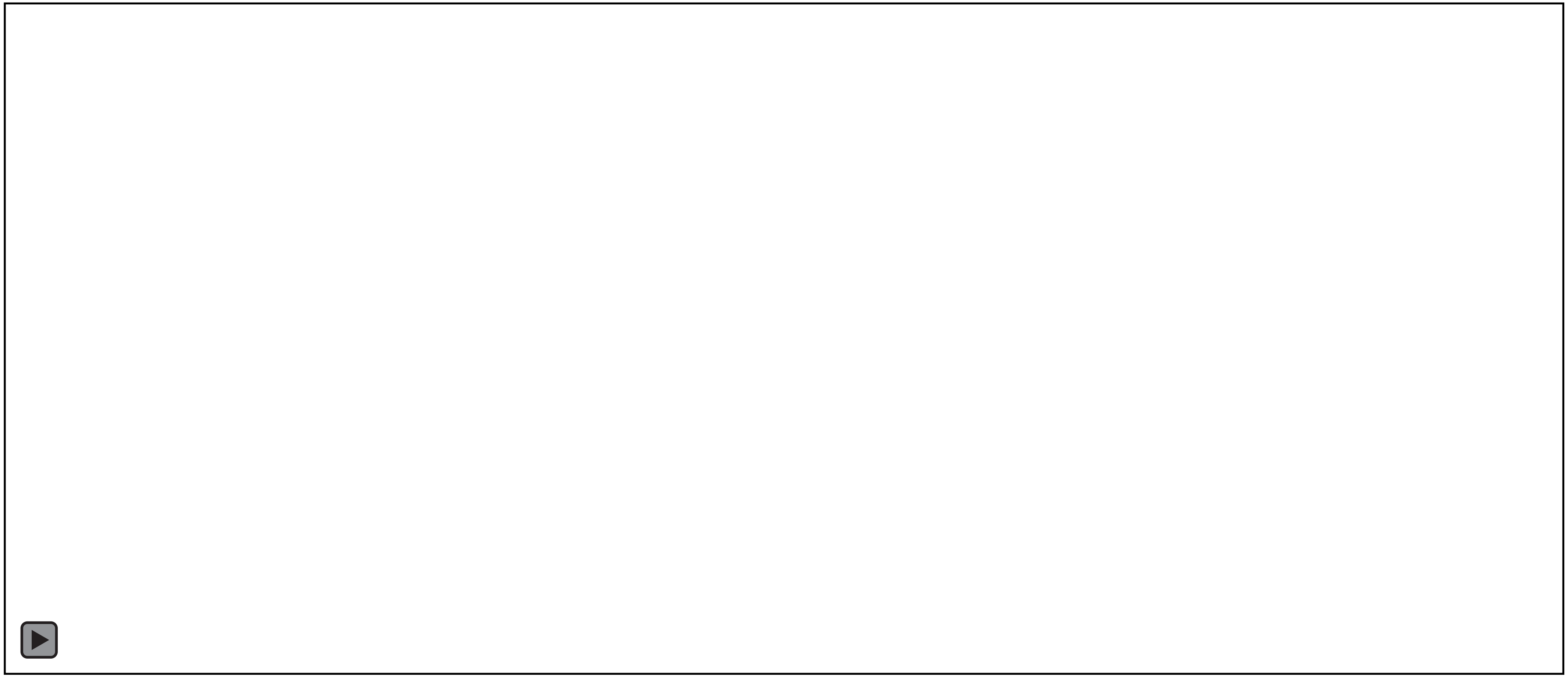
Resilient Supply Chains Drive Economic Growth

- Strong supply chains boost growth by enabling production, trade, and innovation.
- Investments in logistics technology increase productivity and create new industries.
- When supply chains disruptions occur, growth slows— occured during COVID-19 and port congestion.

Investing in Training Matters

- Capital investments in skills and training improve productivity and economic growth.
- Helps workers adapt to new technology used in modern logistics (digital scanners, warehouse software, telematics).
- Raises wages, because workers with stronger digital and power skills qualify for opportunity careers
- Improves supply chain efficiency, reducing delays, errors, and costs for consumers.
- Supports economic mobility, especially for roles that do not require a four-year degree.

How has employment in the supply chain industry changed?

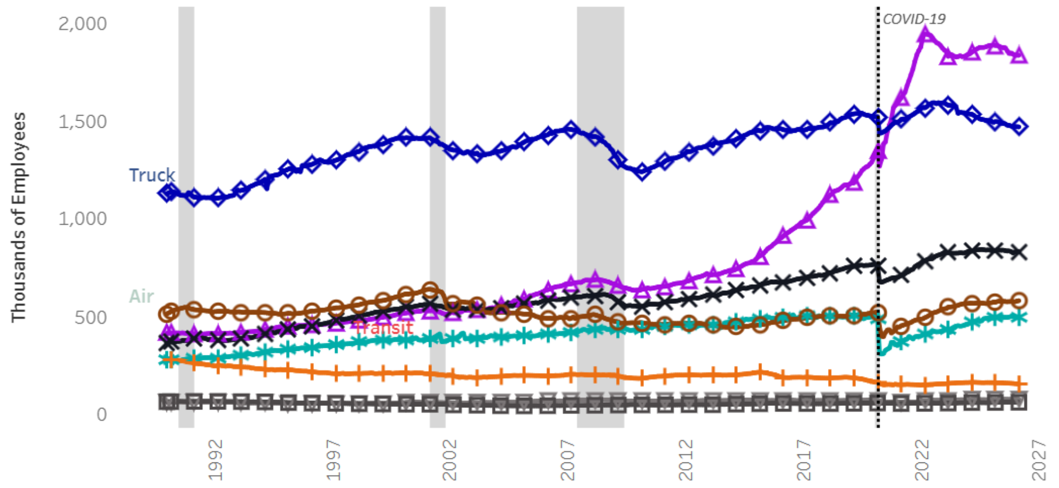


March 2026 Transportation Employment

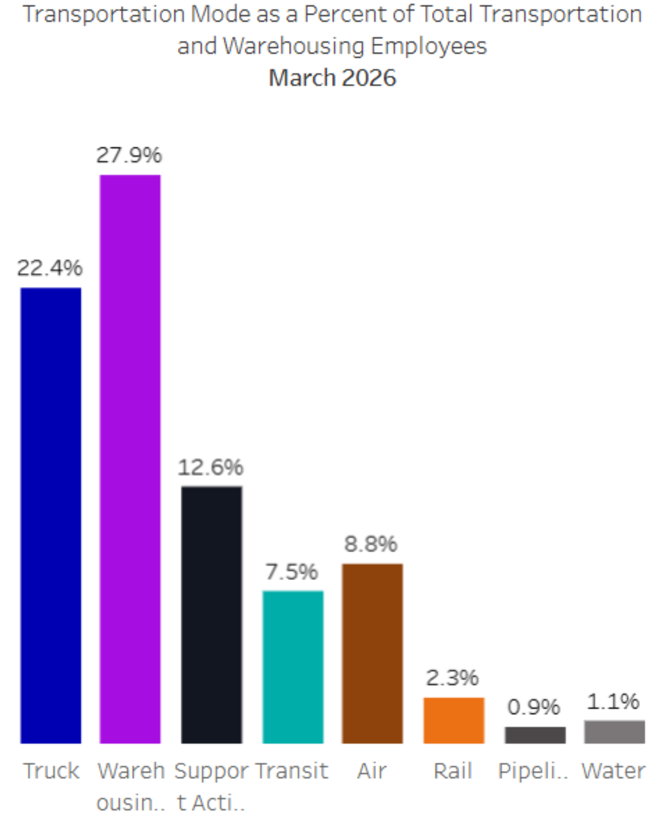
Transportation Employment

Truck Transportation (Monthly)	Transit and Ground...	Air Transportation (Monthly)	Rail Transportation (Monthly)	Water Transportation (Monthly)	Pipeline Transportation...
1.44M Employees	506K Employees	575K Employees	150K Employees	69.1K Employees	55.9K Employees
3/1/26 - 3/31/26	3/1/26 - 3/31/26	3/1/26 - 3/31/26	3/1/26 - 3/31/26	3/1/26 - 3/31/26	3/1/26 - 3/31/26

Labor Changes in Transporting and Warehousing



NOTE: Shaded areas indicate recession. Dashed line indicates first shelter-in-place order on 3/19/2020 in California; 42 states implemented after.
SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Current Employment Statistics (Washington, DC: Monthly Issues), series IDs CES4300000001, CES4348100001, CES4348200001, CES4348300001, CES4348400001, CES4348500001, CES4348600001, CES4348800001, CES4349300001, (seasonally adjusted) available at https://www.bls.gov/ces



Changes in the Supply Chain Industry

Key Shifts Over the Last Deccade

Rise of Automation & Robotics

Rise of automation and robotics

E-Commerce-Driven Transformation

Fulfillment-Driven Transformation

Digitalization & Real-Time Visibility

Greater reliance on tracking systems, data dashbonds

Shift in Workforce Skills

Increased workforce skills

Sustainability Pressures

Emphasis on greener transportation, reduced packaging and carbon

Supply Chain Careers Benefit Students

Direct path to good wages through certifications, apprenticeships, or employer-supported training—no bachelor's degree required.

Builds on skills students already learn, including teamwork, communication, digital literacy, and problem-solving.

High demand and stability across industries, highlighted during COVID-19 disruptions.

Clear advancement pathways from entry-level to supervisory and specialized roles, eventually leading to high-paying management positions.

What is an Opportunity Occupation?

- An opportunity occupation provides a pathway to economic stability and long-term growth without requiring a four-year degree. It includes:

✓ Above-median wages	Allow individuals to support themselves and their families.
✓ Accessible entry points	Certifications, short-term training, or on-the-job learning provide ways to enter without a four-year degree.
✓ Clear advancement pathways	Workers can grow skills and move into higher-level roles over time.

Supply Chain Jobs Line Short Activity

Jobs	
Cargo Handler	Marine Engineer
Crane Operator	Merchant Mariner
Customs Broker	Purchasing Agent
Logistician	Transportation Manager
Marine Drafter	Truck Driver

Visual 2: Education Level Descriptions

Post-Secondary Education Level Descriptions

Certificate - A certificate is a non-degree award designed to prepare for a specific job. A certificate is earned after high school by completing a program typically taking 2 years or less.

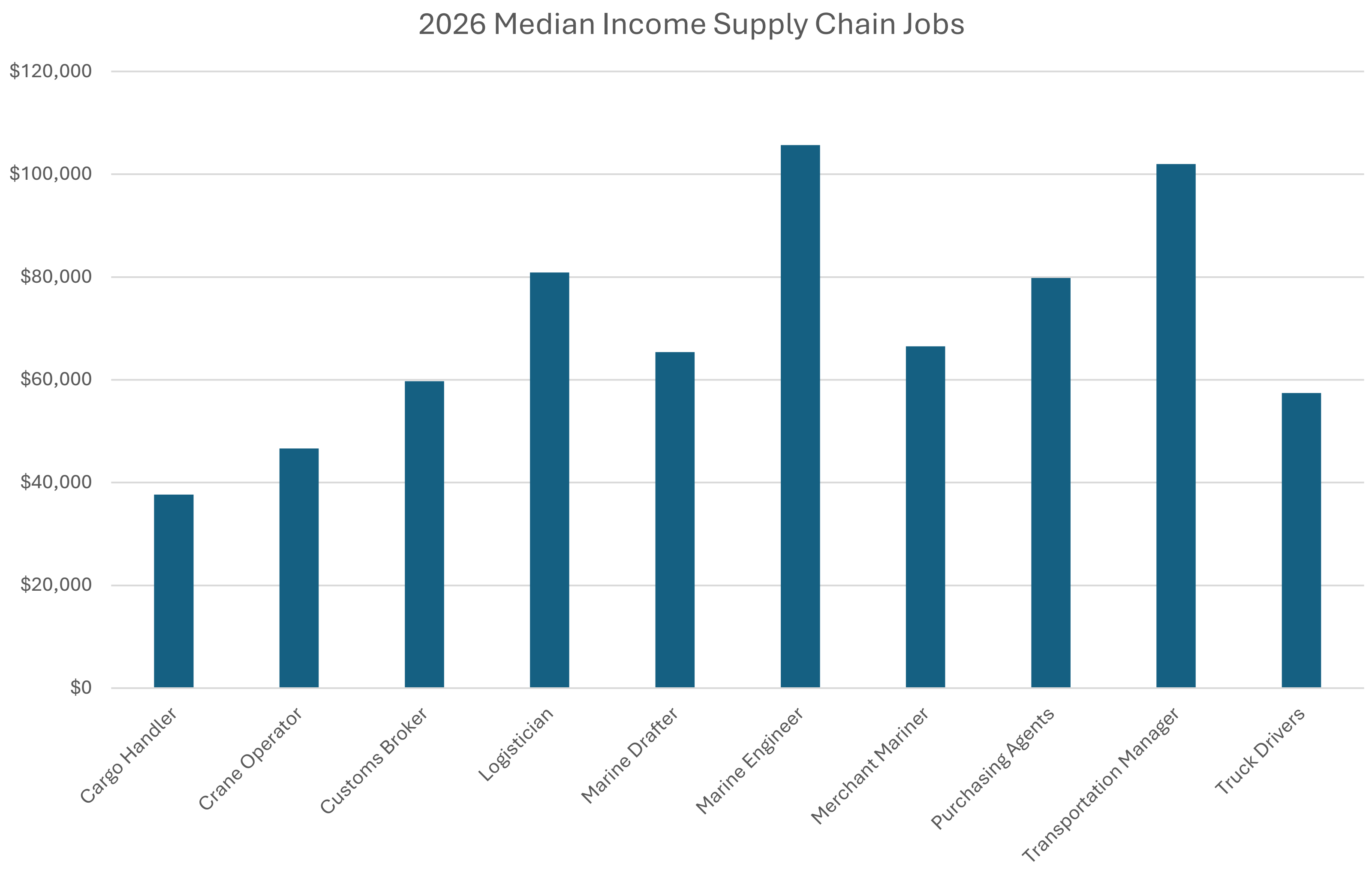
Associate's Degree - An associate's degree is earned by at least 2 years of study after high school. Many associate's degrees are career-focused to prepare for a job in a science, health or technical field. Associate's degrees can also be a first step toward completing a bachelor's degree.

Bachelor's Degree - A bachelor's degree is earned by completing 4-5 years of study after high school. Bachelor's degrees can offer a general liberal arts education as well as focus on a specific area of study.

Master's Degree - A master's degree is awarded after successful completion of 2 years of study after a bachelor's degree. The master's degree is often sought for career development, personal growth, academic research or to prepare for further education.

Doctoral or Professional Degree – A doctoral or professional degrees typically take between 3+ years of study after a bachelor's degree. Doctoral and professional degrees are the highest academic or professional award that can be earned in a specific field of study.

Job	Educational Attainment	2026 Median Annual Income
Cargo Handler	No Diploma	$37,680
Crane Operator	High School Diploma	$46,620
Customs Broker	Bachelor's Degree	$59,740
Logistician	Bachelor's Degree	$80,880
Marine Drafter	Associate's Degree	$65,380
Marine Engineer	Bachelor's Degree	$105,670
Merchant Mariner	Bachelor's Degree	$66,490
Purchasing Agents	Bachelor's Degree	$79,830
Transportation Manager	High School Diploma	$102,010
Truck Drivers	High School Diploma	$57,440


2026 Median Income Supply Chain Jobs
$120,000
$100,000
$80,000
$60,000
$40,000
$20,000
$0
Cargo Handler
Crane Operator
Customs Broker
Logistician
Marine Drafter
Marine Engineer
Merchant Mariner
Purchasing Agents
Transportation Manager
Truck Drivers

This interactive tool sheds light on career pathways in the U.S. labor market. Researchers at the Federal Reserve Banks of Philadelphia and Cleveland leverage the skills employers ask for to create a tool that allows users to explore career paths and visualize how skills for a particular occupation can transfer to similar but higher-paying jobs in the same geographical area. The tool was updated in September 2024 to include the most recently available data and expand the geographic coverage to include all areas of the country with available data.

This tool is a resource for workforce development professionals, guidance counselors, employers, job seekers, and others who want to learn more about career pathways. As part of our work to foster maximum employment and a strong overall economy, the Philadelphia Fed conducts research that increases understanding of the U.S. labor market and promotes economic mobility and opportunity for all.

How are you using the Occupational Mobility Explorer? We'd love to hear from you!

Occupational Mobility Explorer

This interactive tool sheds light on career pathways in the U.S. labor market. The tool allows users to explore career paths and visualize how job skills needed for specific occupations can transfer to higher-paying occupations in the same geographical area. Users can also access resources to help them search for jobs in their region and build a skills-based resume.

JUMP TO

- About the Explorer
- About the Data
- Resources

Build Your Path

Start by choosing a U.S. location and job title. Build a career path by exploring how the skills needed for that job overlap with the skills needed for similar roles with higher pay in the same local market. Or start with a higher-paying destination occupation and trace a career path by exploring how the skills needed for that destination occupation connect back to other jobs along a career ladder.

Where Is This Job Located?

Select or Type a Metro or Nonmetro Area

Select or Type a Metro or Nonmetro Area

Enter a zip code to find the closest region. 00000

OR

Select or Type a State

Select or Type a State

Next

Federal Reserve Banks of Philadelphia and Cleveland, Occupational Mobility Explorer

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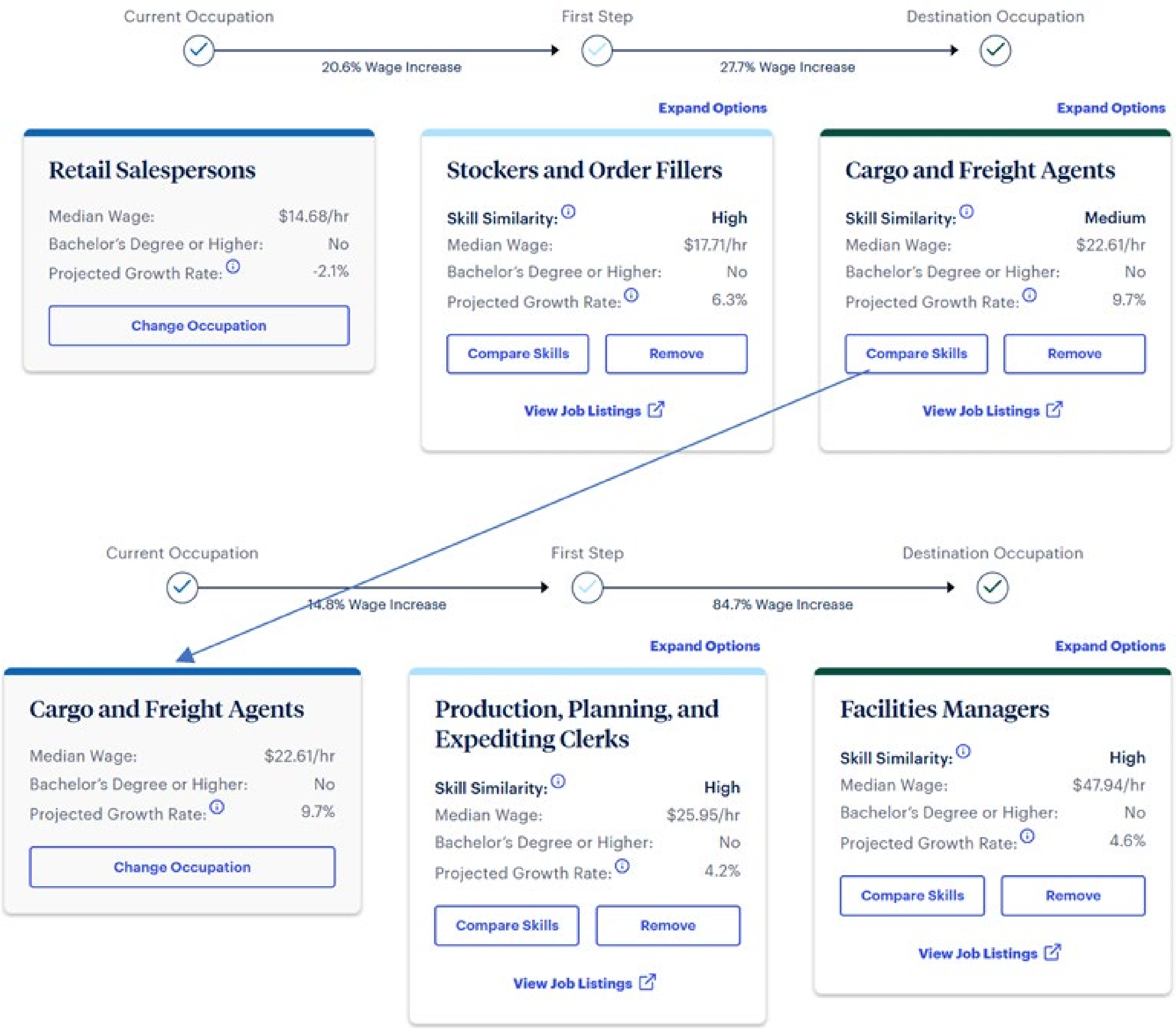
< Back to Location

Florida

What Occupation Would You Like To Explore?

Select or Type an Occupation

Can't find your occupation? Check **Sockit** to find the closest match.



Current Occupation
First Step
Destination Occupation
20.6% Wage Increase
27.7% Wage Increase
Expand Options
Expand Options
Retail Salespersons
Median Wage: $14.68/hr
Bachelor's Degree or Higher: No
Projected Growth Rate: -2.1%
Change Occupation
Stockers and Order Fillers
Skill Similarity: High
Median Wage: $17.71/hr
Bachelor's Degree or Higher: No
Projected Growth Rate: 6.3%
Compare Skills
Remove
View Job Listings
Cargo and Freight Agents
Skill Similarity: Medium
Median Wage: $22.61/hr
Bachelor's Degree or Higher: No
Projected Growth Rate: 9.7%
Compare Skills
Remove
View Job Listings
Current Occupation
First Step
Destination Occupation
14.8% Wage Increase
84.7% Wage Increase
Expand Options
Expand Options
Cargo and Freight Agents
Median Wage: $22.61/hr
Bachelor's Degree or Higher: No
Projected Growth Rate: 9.7%
Change Occupation
Production, Planning, and Expediting Clerks
Skill Similarity: High
Median Wage: $25.95/hr
Bachelor's Degree or Higher: No
Projected Growth Rate: 4.2%
Compare Skills
Remove
View Job Listings
Facilities Managers
Skill Similarity: High
Median Wage: $47.94/hr
Bachelor's Degree or Higher: No
Projected Growth Rate: 4.6%
Compare Skills
Remove
View Job Listings

Job Reality Check (15 minutes)

- Task: Rotate through 3–4 career stations. At each station, use the career card and BLS OOH link to learn about the job before moving to the next one.
- **Student task at each station:**
  - Summarize duties, work environment, and entry training/certifications.
  - Decide whether it meets **opportunity career** criteria (use the three tests).
  - Note **power skills** and **digital skills** needed (e.g., communications, scheduling software, handheld scanners, telematics).

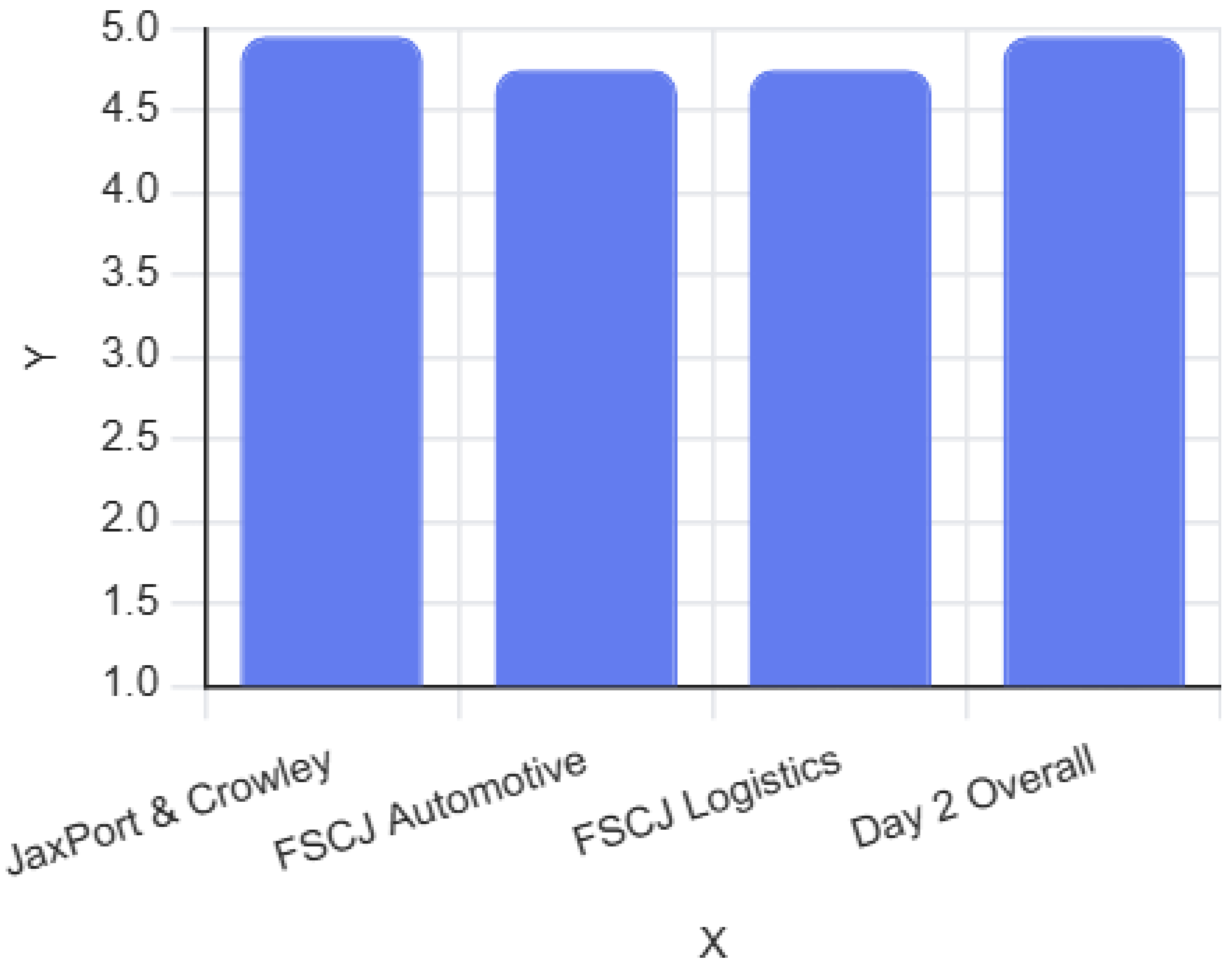
Lessons Learned – Planning the Supply Chain for Teachers Conference

Day 1-Federal Reserve Bank of Atlanta, Jacksonville Branch

Day 2- Crowley @JAXPORT

Day 2 FSCJ Logistics and Automotive Programs

Supply chain Teacher Conference Survey



Questions?

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