

Port Economics, Management and Policy

Theo Notteboom, Athanasios Pallis and Jean-Paul Rodrigue

Global Supply Chains, Free Trade Zones, and the Geography of Port Logistics

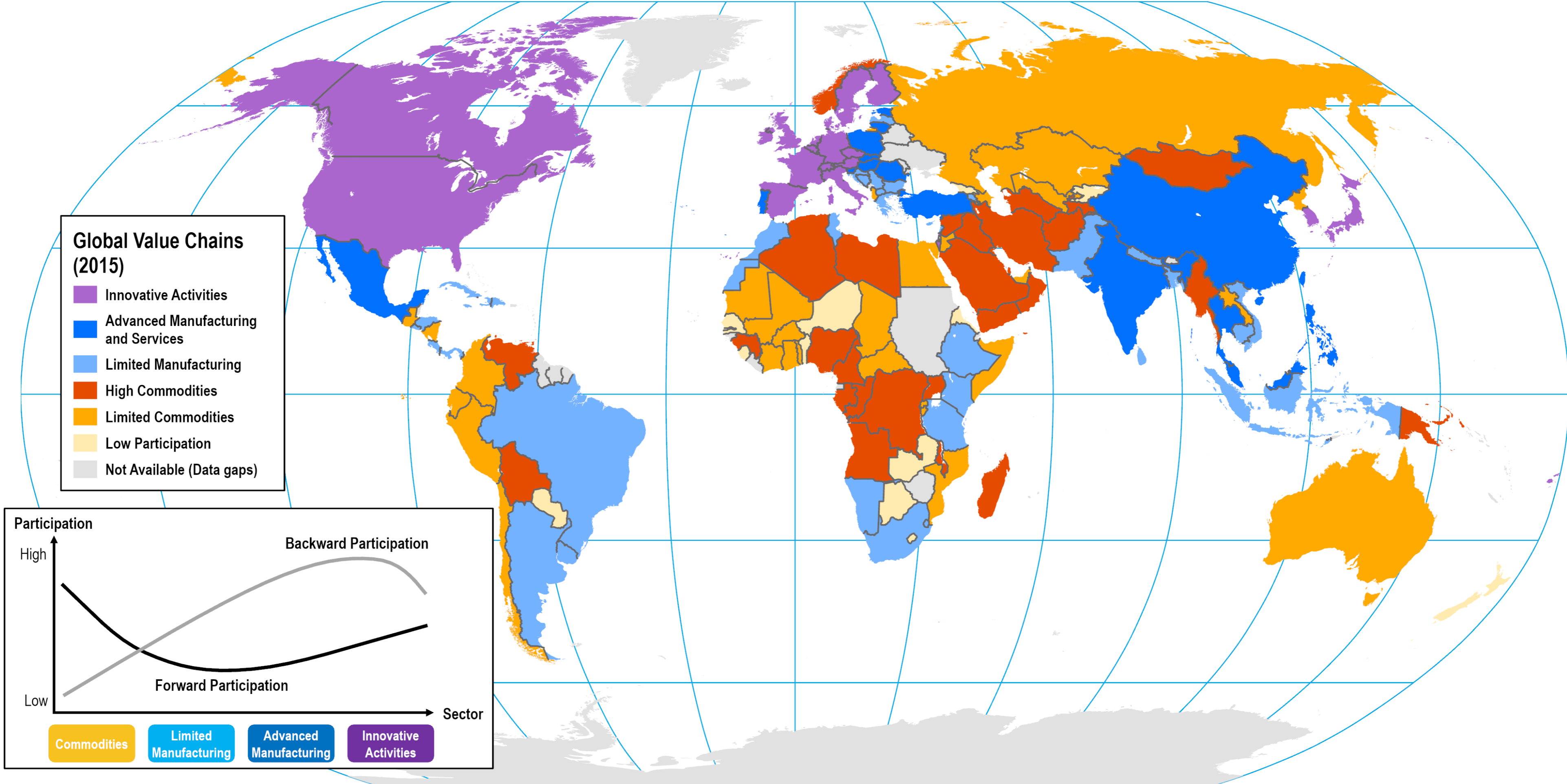


Dr. Jean-Paul Rodrigue

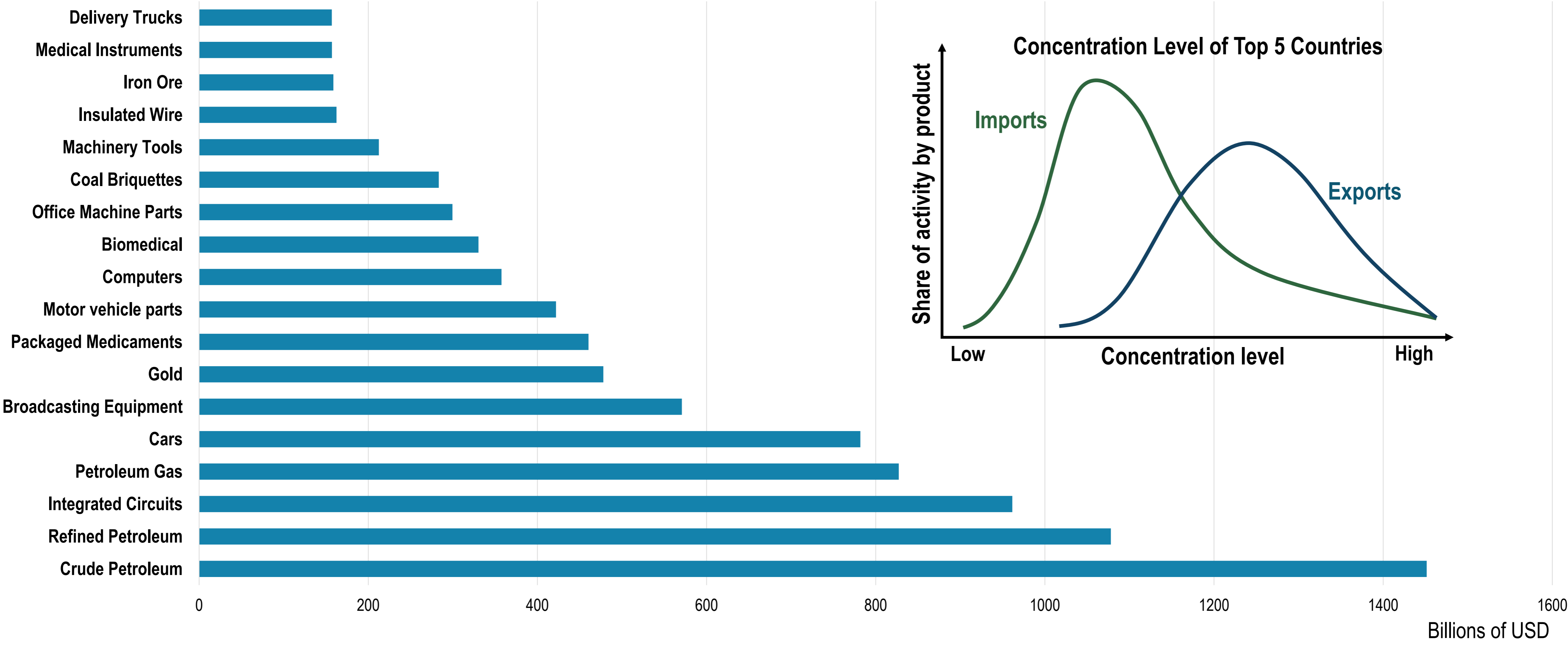
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Texas A&M University - Galveston



A Sequential Hierarchy: Participation Level in Global Value Chains

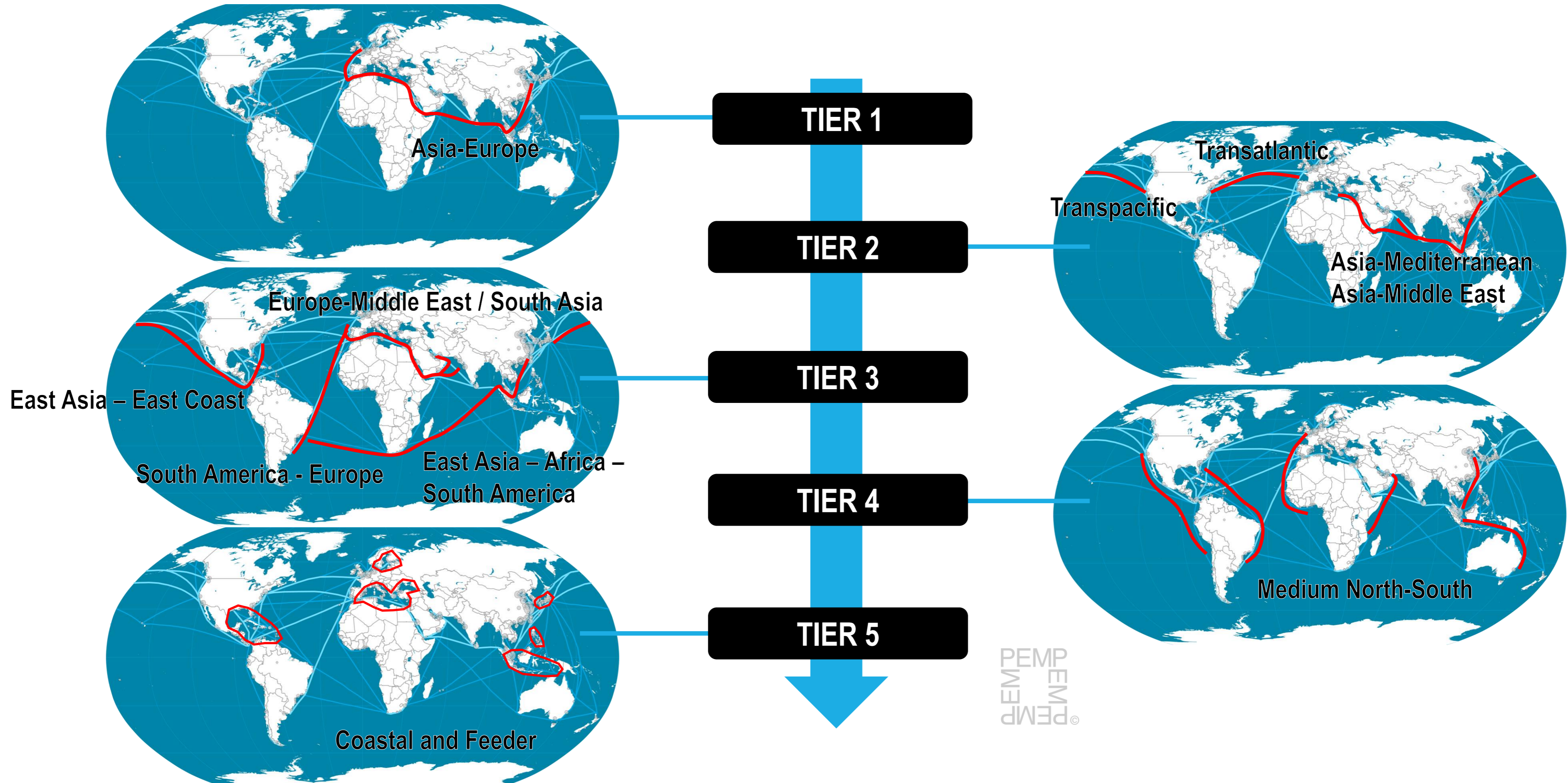


A Functional Hierarchy: World's Most Traded Goods and Trade Concentration, 2022



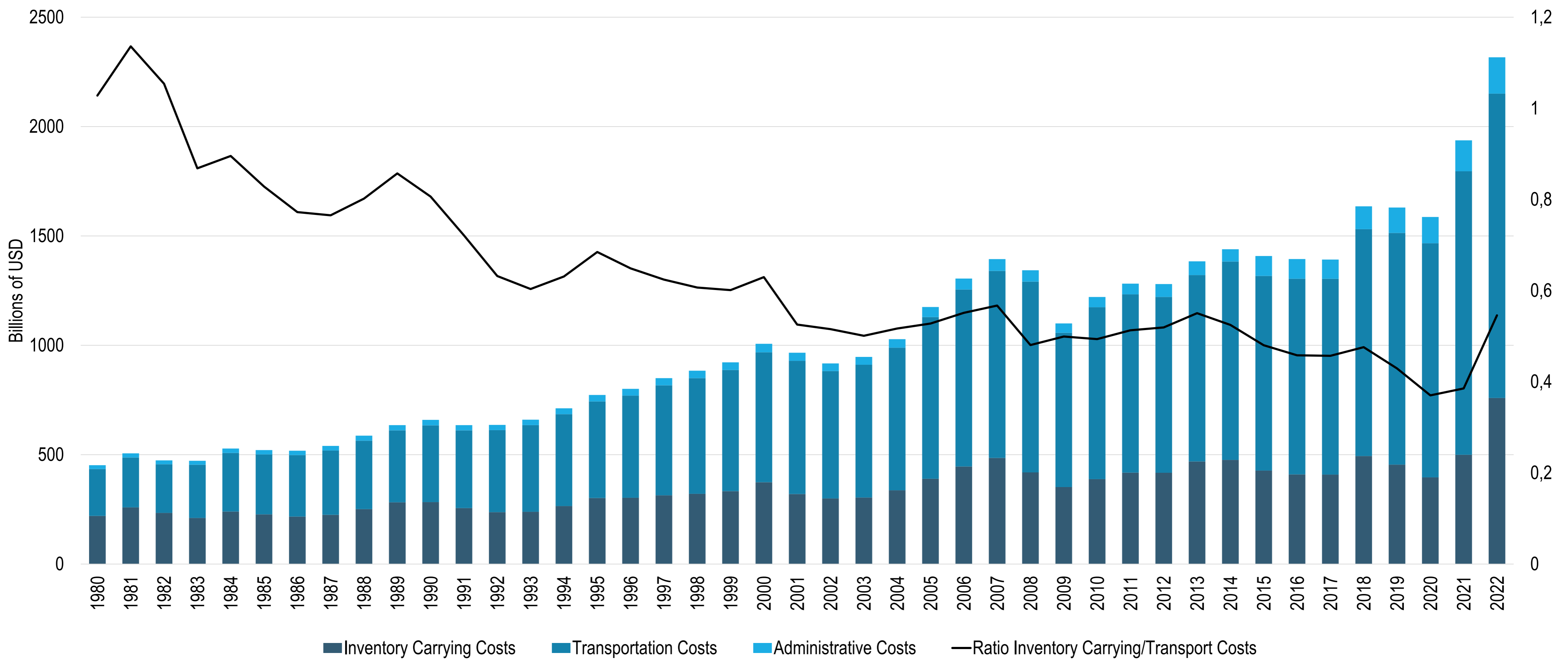
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Global Hierarchy of Shipping Lanes



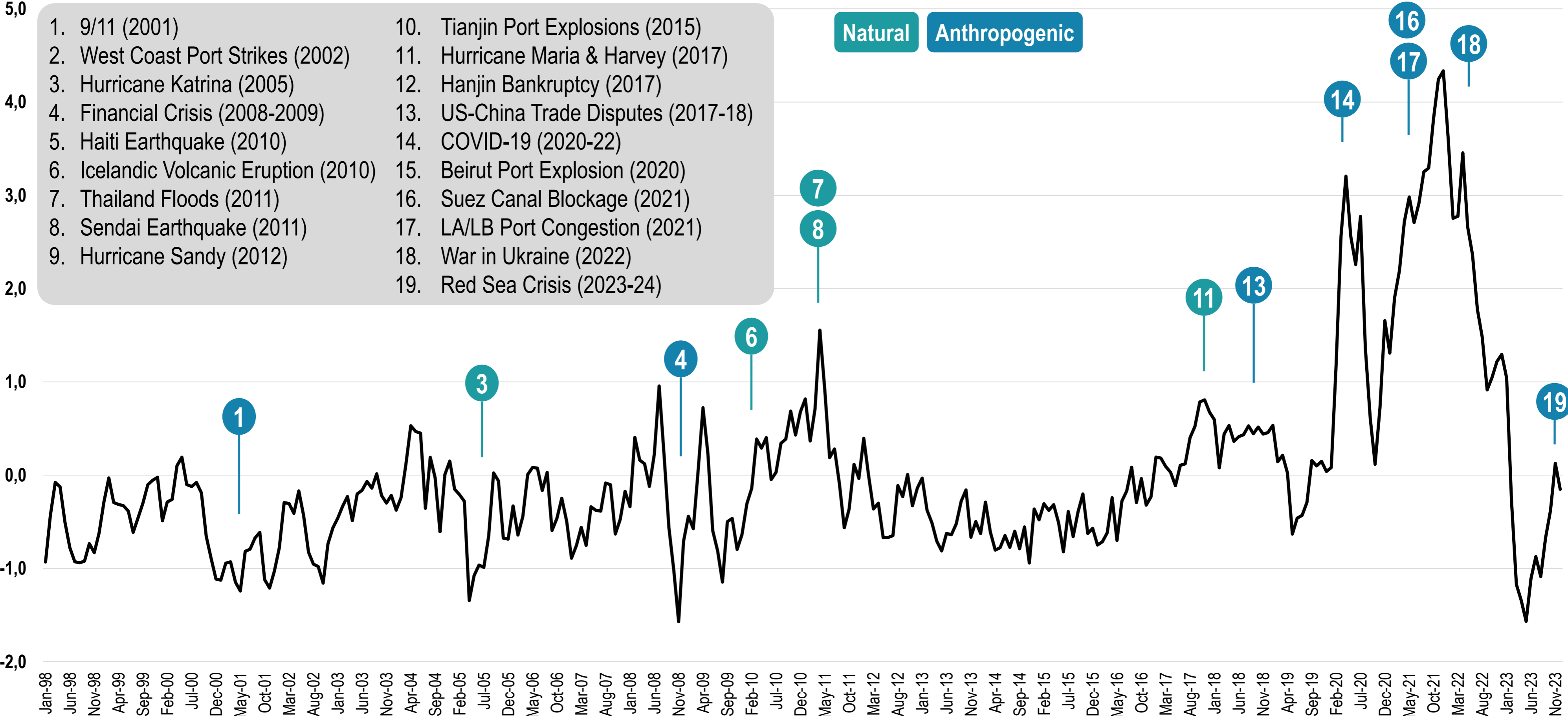
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A Paradigm Shift in the Role of Logistics? Logistics Costs, United States, 1980-2022



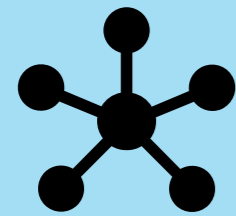
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Global Supply Chain Pressure Index (GSCPI) and Major Supply Chain Disruptions



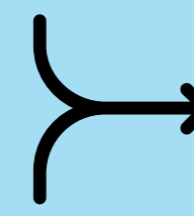
Main Trends Impacting Container Shipping

NETWORK CONFIGURATION



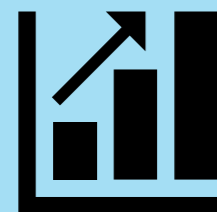
- Hierarchy between deep-sea and feeder services.
- Concentration in major hub ports.
- Inter-range services.
- Matching ship capacity with ports of call.

ALLIANCES



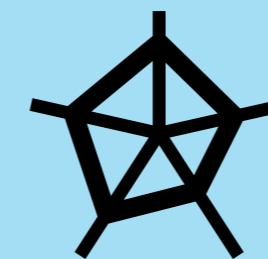
- Consolidation and concentration of shipping lines.
- Capacity-sharing agreements.
- Global terminal operators.
- Financialization and corporatization.

SCALE ECONOMIES



- Stepwise deployment of larger ships.
- Pressure on port operations (infrastructures).
- Integration with inland terminals.

TRADE STRUCTURE



- Longitudinal versus latitudinal trade.
- Shift in outsourcing and offshoring.
- Regionalism.

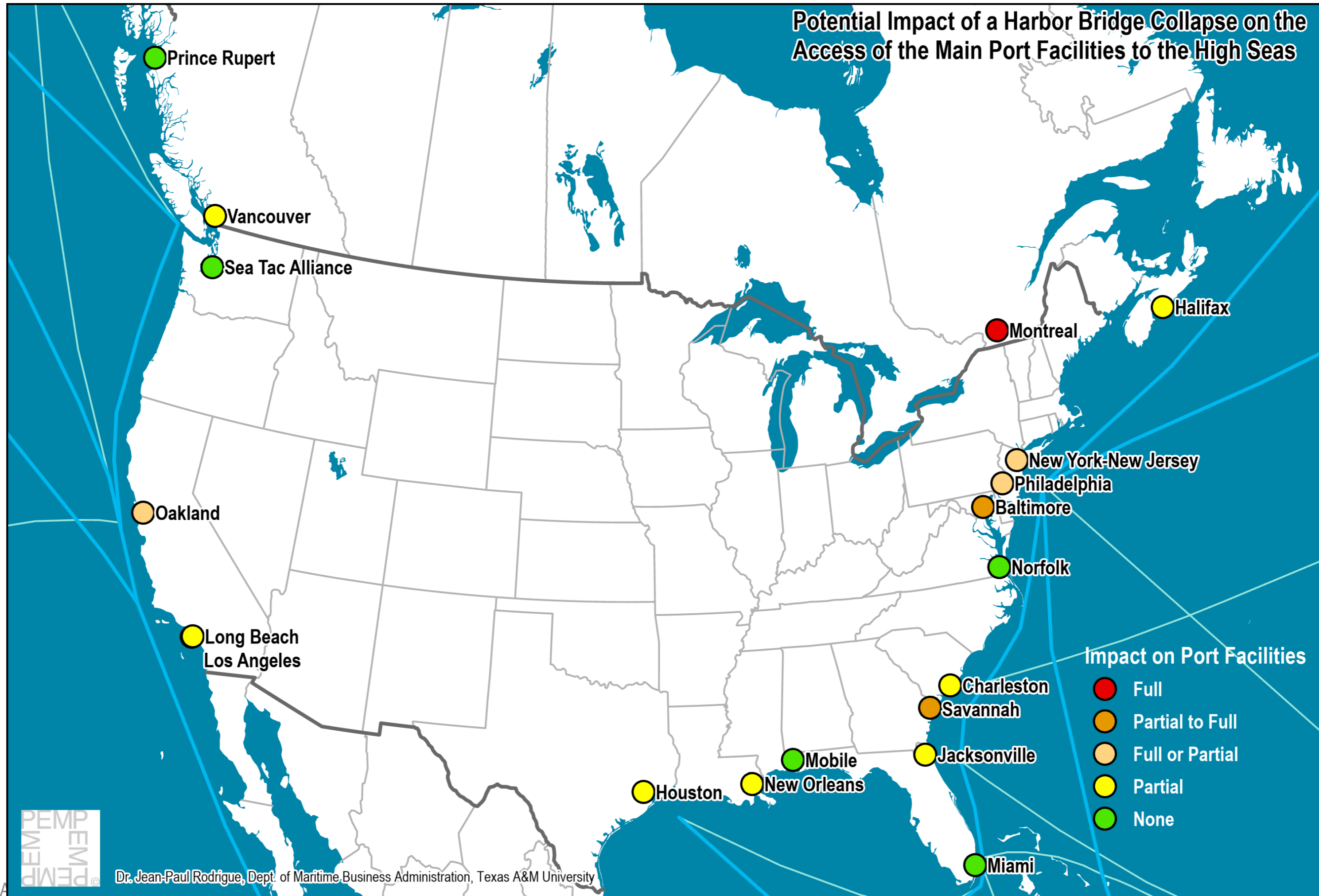
DIGITALIZATION

AUTOMATION







RESILIENCE

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Port Disruptions and Resilience



Reassessing Value Chains: Nearshoring Alternatives to China

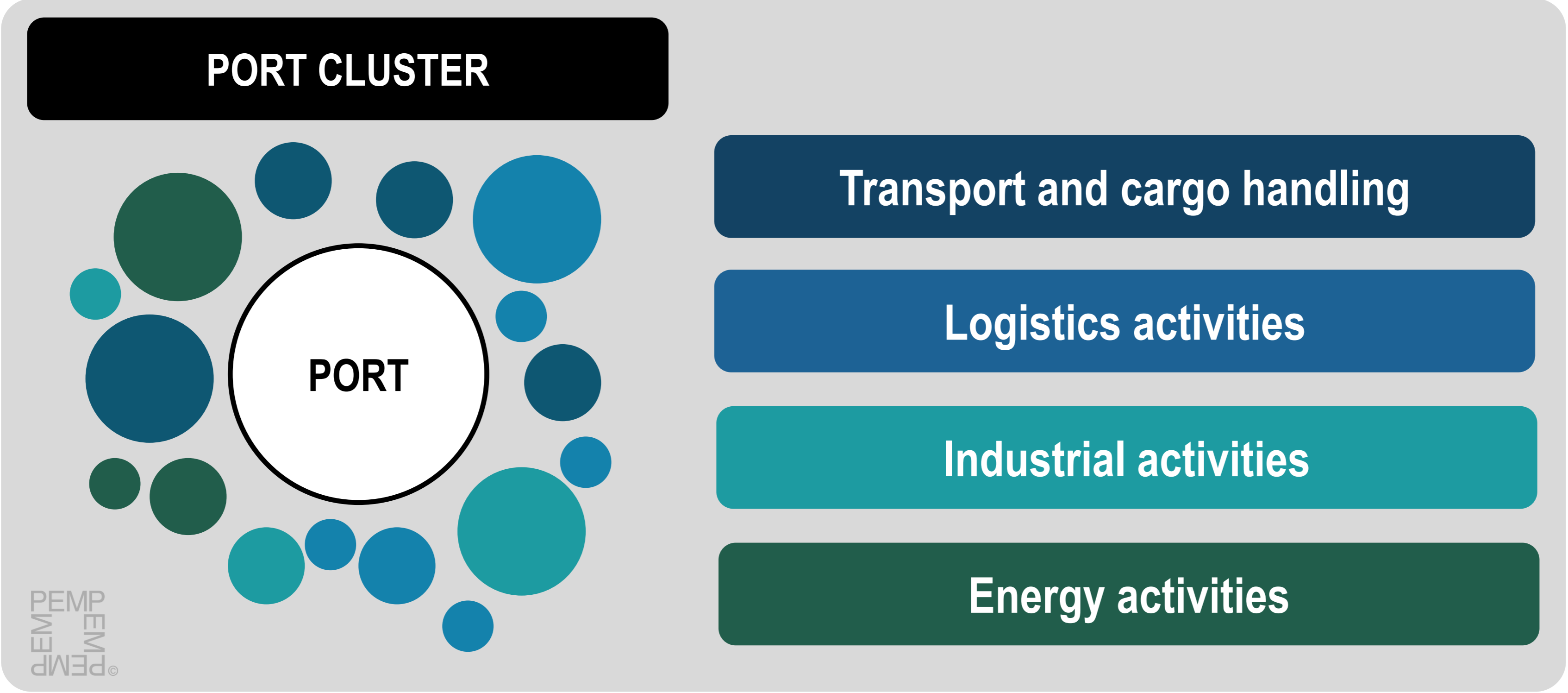
| | LOCATION | MODE/DAYS | LANDED PRICE | ΔChina |
|-------------|---------------|---|---------------------|--------|
| | | | For a pair of jeans | |
| Offshoring | Bangladesh |  30 | \$10,68 | -11% |
| | China |  30 | \$12,04 | 0% |
| Nearshoring | Mexico |  2 | \$10,57 | -12% |
| Reshoring | UNITED STATES | | \$14,05 | +17% |
| Offshoring | Bangladesh |  30 | \$9,94 | -20% |
| | China |  30 | \$12,46 | 0% |
| Nearshoring | Turkey |  3-6 | \$12,08 | -3% |
| Reshoring | GERMANY | | \$30,36 | +144% |

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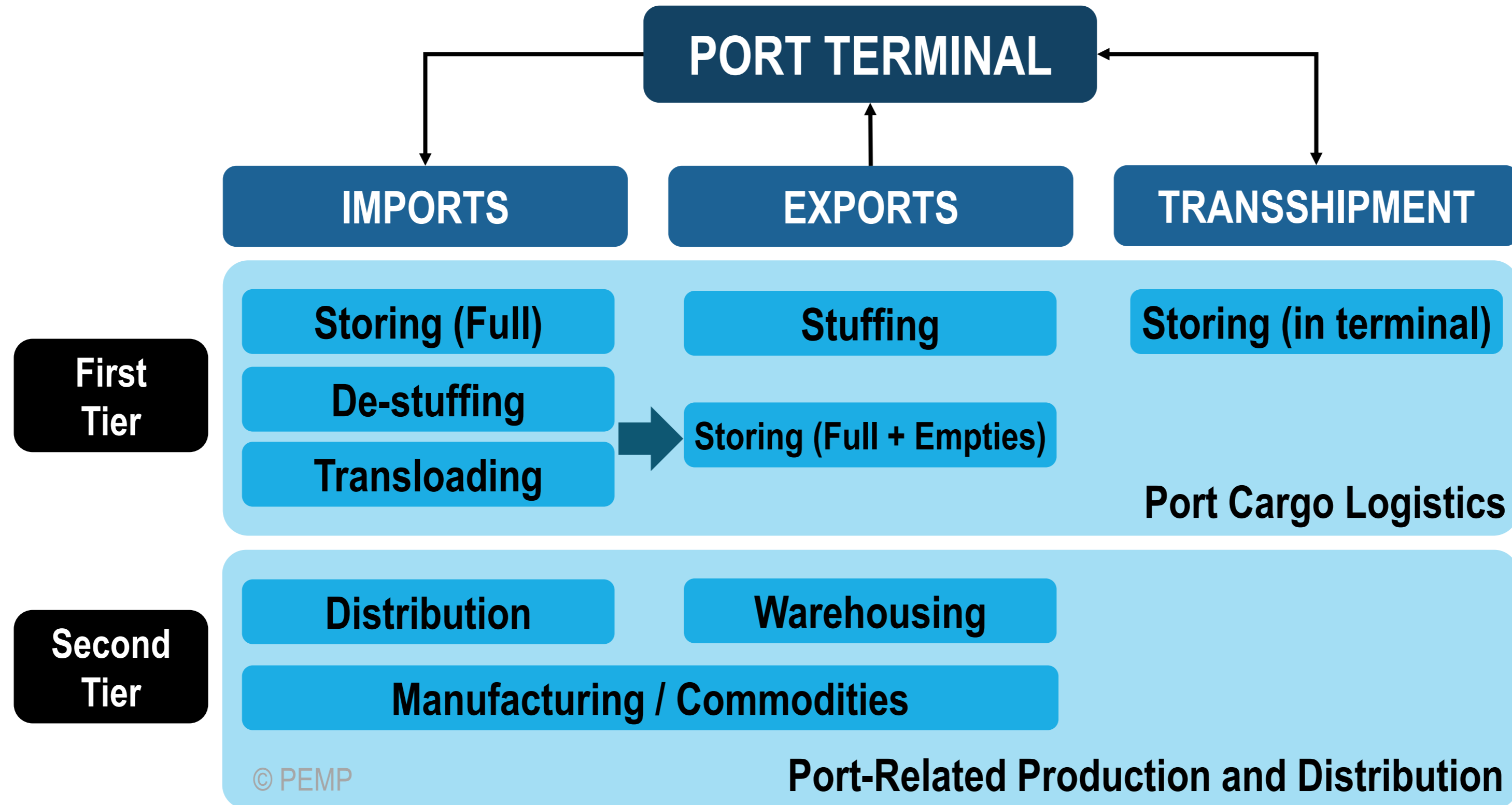
Trying to Keep the China Price: Yuan Exchange Rate (per USD), 1981-2024 (Monthly)



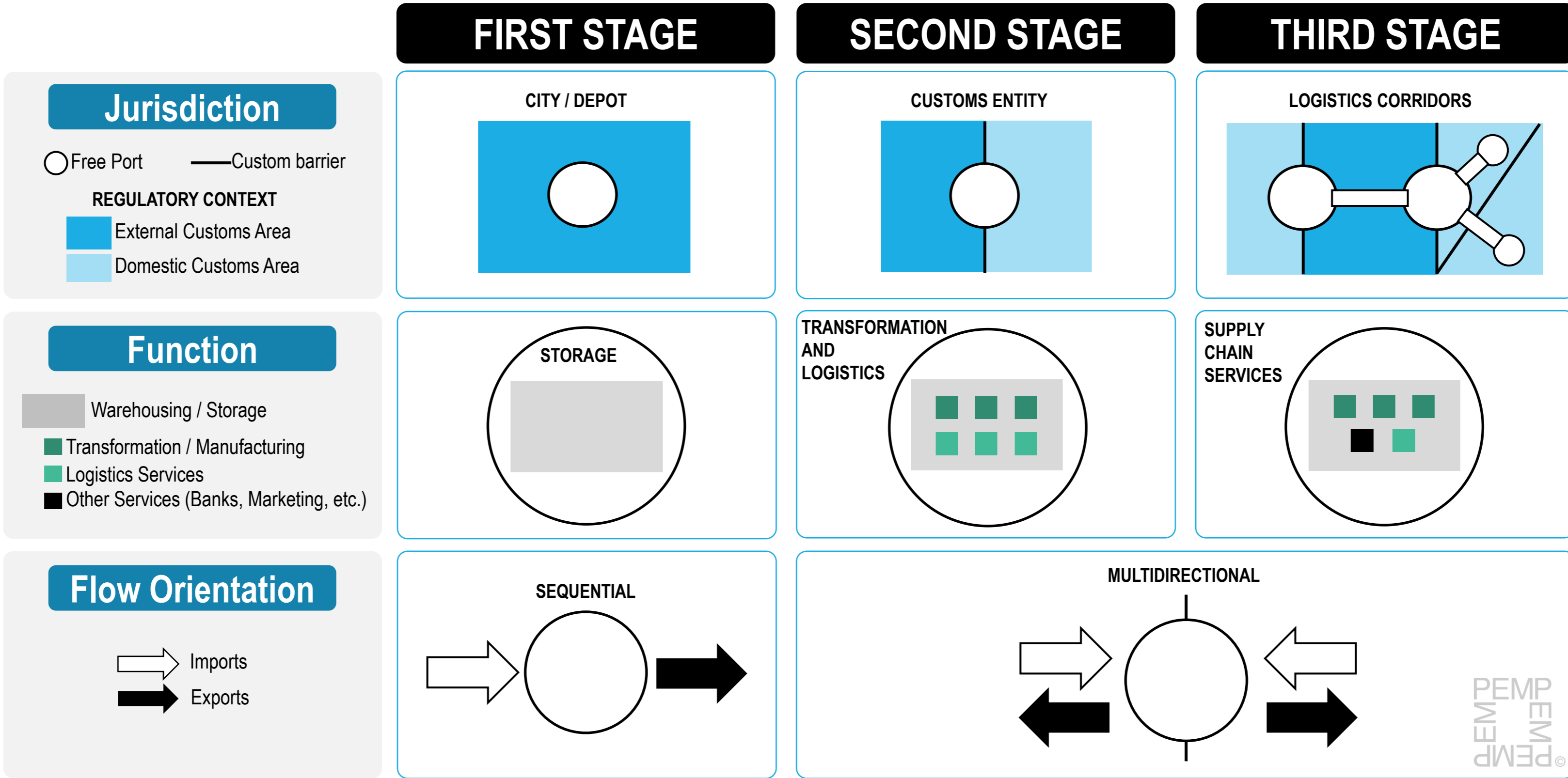
Anchoring Regional Logistics: Ports as Clusters of Economic Activity



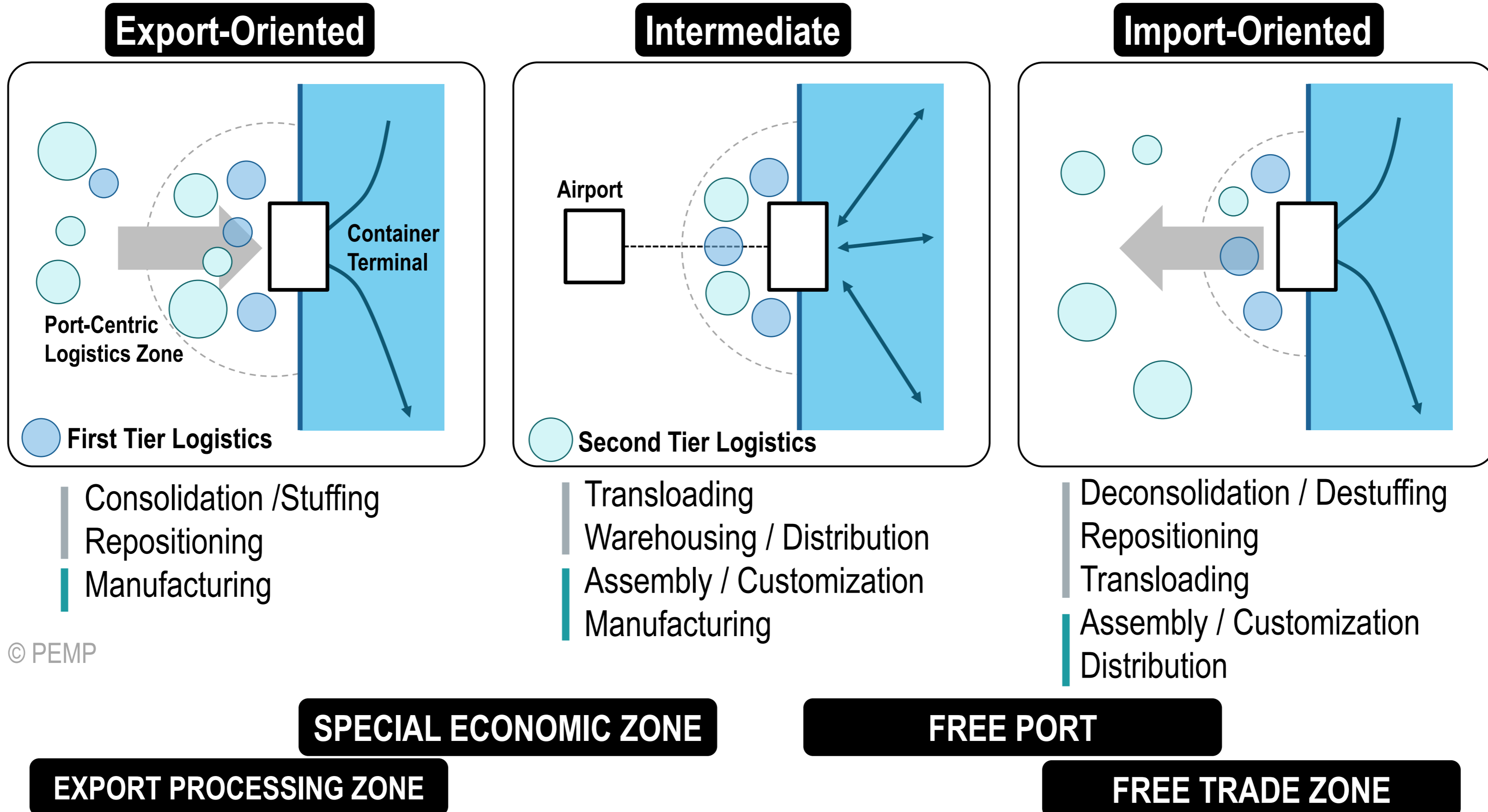
Basic Functions of Port Centric Logistics



Factors and Stages of Free Zone Development



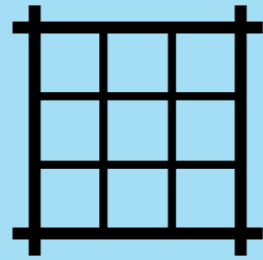
Functional Types of Port Centric Logistics



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A Question of Leverage: Advantages of Logistic Zones

GEOGRAPHICAL ADVANTAGES



Land

- Availability (ownership or zoning).
- Lower acquisition (or renting) costs.
- Preferential taxation.



Accessibility and Connectivity

- Proximity to terminals, suppliers and customers.
- Lower distribution costs (distance).
- Site accessible 24/7.



Infrastructures

- Provision of utilities and roads.
- Leasing of warehousing space and equipment.

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OPERATIONAL ADVANTAGES



Planning and Regulations

- “Fast track” (construction and operation).
- Incremental development phases.
- Compliance with regulations.
- Foreign trade zone status.



Economies of Agglomeration

- Lower distribution costs (scale).
- More full truck loads.
- Shared services (labor, transloading, telecommunications).



Multiplying Factors

- Anchor tenants (major actors in logistics).
- Diffusion of best practices (managerial, technical).
- Service industries.

A Question of Arbitrage: Regulatory Advantages of Foreign Trade Zones (FTZ)

Custom Clearance

Simpler and faster



- Done inland instead of at the gateway port (merchandises go directly to the FTZ).
- Consignment can stay for an unlimited amount of time in the FTZ.
- Consignee gets further advance notice that shipment is ready.
- Quotas can be managed through postponement.

Duties and Fees

Duty exemptions and deferral



- Duties and merchandise processing fees not paid until the consignment is released and moved out of the FTZ (storage).
- Not paid if goods are exported, re-exported, damaged, defective or obsolete
- Deferred if goods moved to another FTZ.

Settlement

Delay settlement



- Vendors not paid until consignments leave the facility for delivery.
- Remove damaged or defective products from the settlement.

Security

Improved



- Higher security level since under jurisdiction of national customs.
- Lower insurance premiums.

Added Value

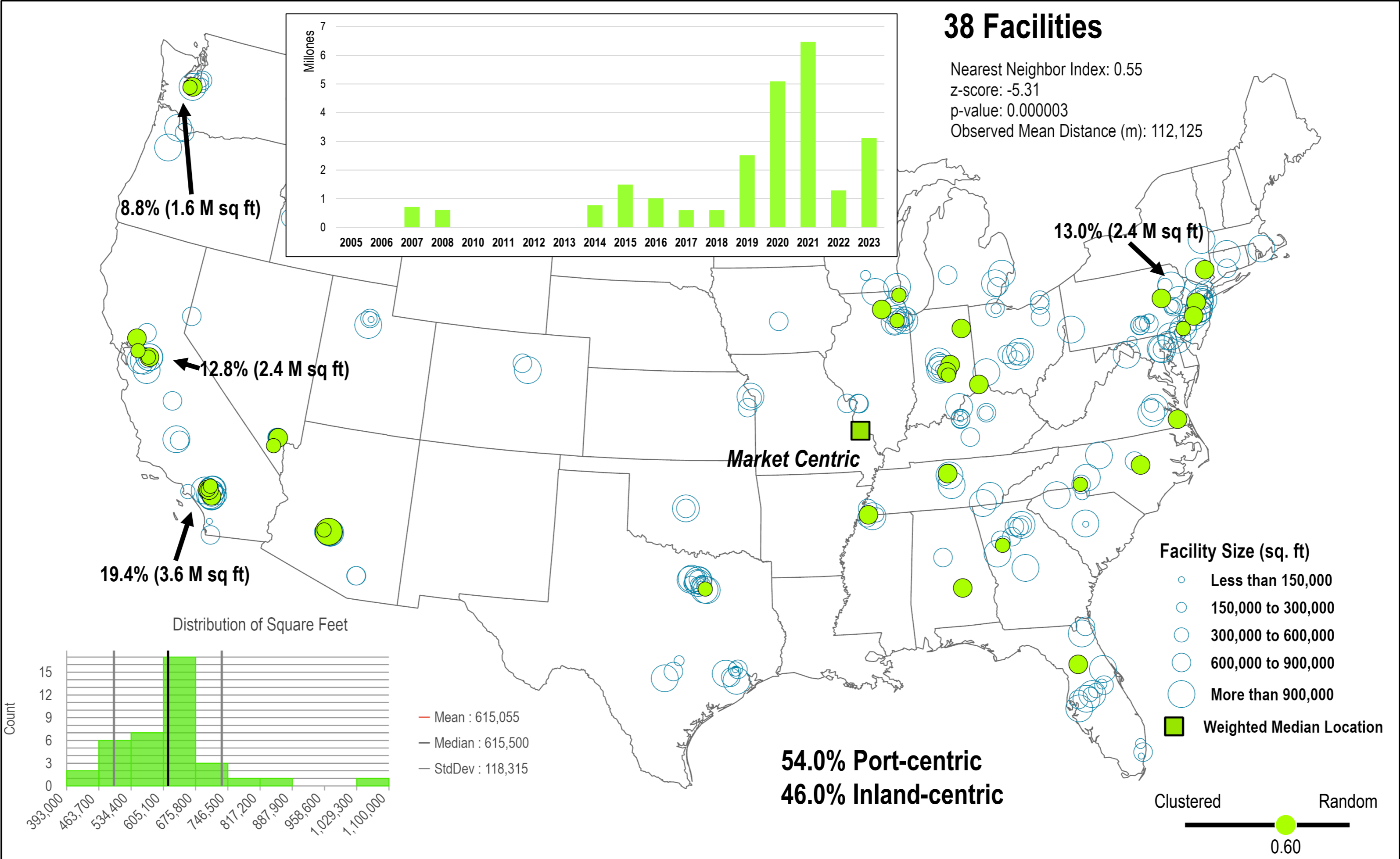
Tariff inversion



- Product remarked or labeled to meet national requirements.
- If transformation is performed in the FTZ, the duty class may change (Select the taxation regime).
- Added value activities performed in an FTZ not subject to customs duties.

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Amazon Inbound Cross Dock Facilities Network



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Key Takeaways

- Shifting hierarchy of added value production in global supply chains
- Port-centric logistics as added value anchors
- Free trade zones as measures of arbitrage for costs and regulations
- Insertion of free trade zones within logistics corridors



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Thank you for your attention!

<https://porteconomicsmanagement.org/>

