

EAS 501

Sustainability and Supply Chains

Course Overview

Fall 2025: Lecture 2

Tuesday, August 28, 2025

Tangled Webs: Unravelling Complexity In The Global Economy

Global Shift

Chapter 3

Conceptual Framework of Global Economy

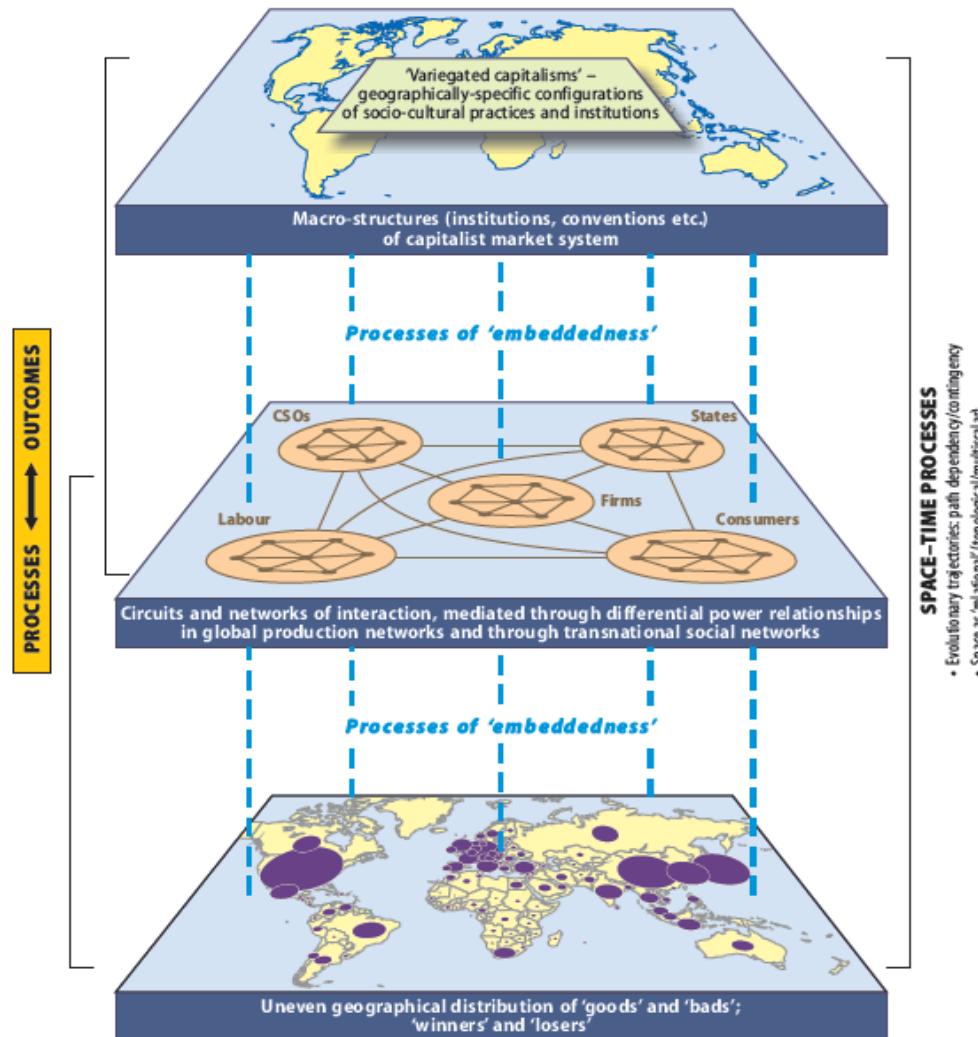


Figure 3.1 A simplified analytical framework of the global economy

Source: based on Dicken, 2004: Figure 2

Governance Institutions of Global Economy

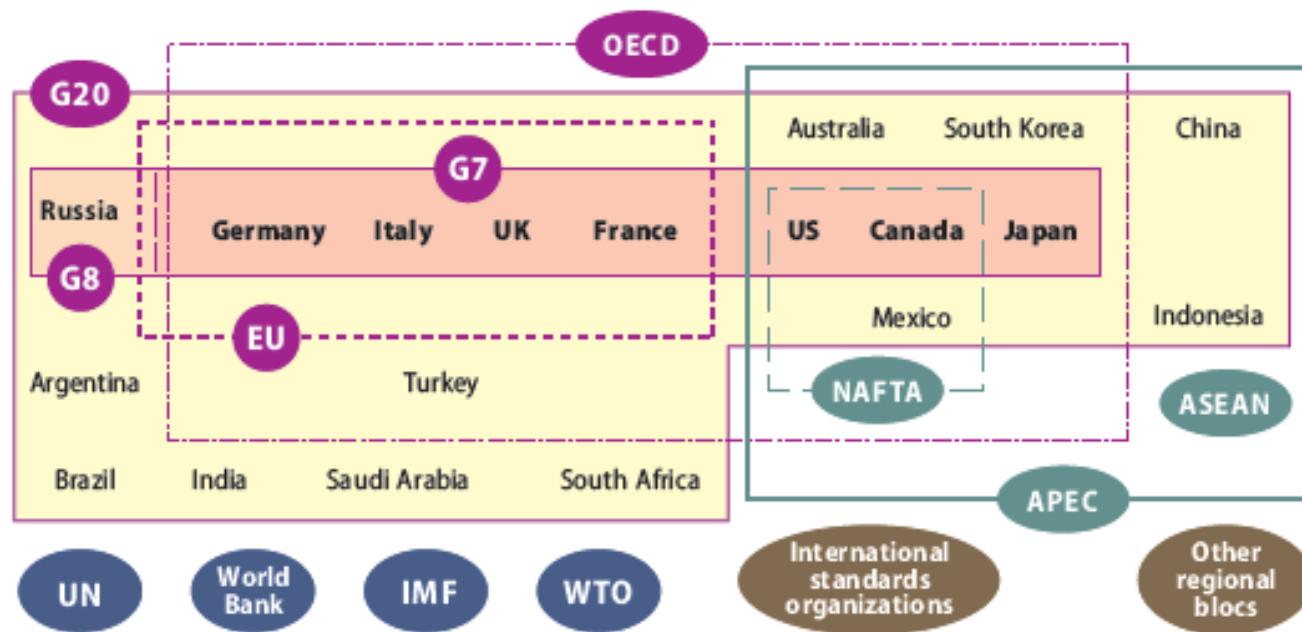


Figure 3.2 Major governance institutions in the global economy

Source: based in part on Cable, 1999: Figure 3.1

Global Production Networks

The core of a Global Production Network (GPN) is the circuit of interconnected functions, operations, and transactions through which a specific commodity, good, or service is produced, distributed, and consumed.

- GPNs are networks which are geographically extensive and functionally integrated across national boundaries rather than actually spanning the whole world
- Traits of GPNs
 - Turning inputs into outputs through production circuits
 - Unevenness of power relations
 - Involved in both cooperation and competition at the same time
 - Integrate firms into structures which blur traditional organizational boundaries

Basic components of Global Production Network

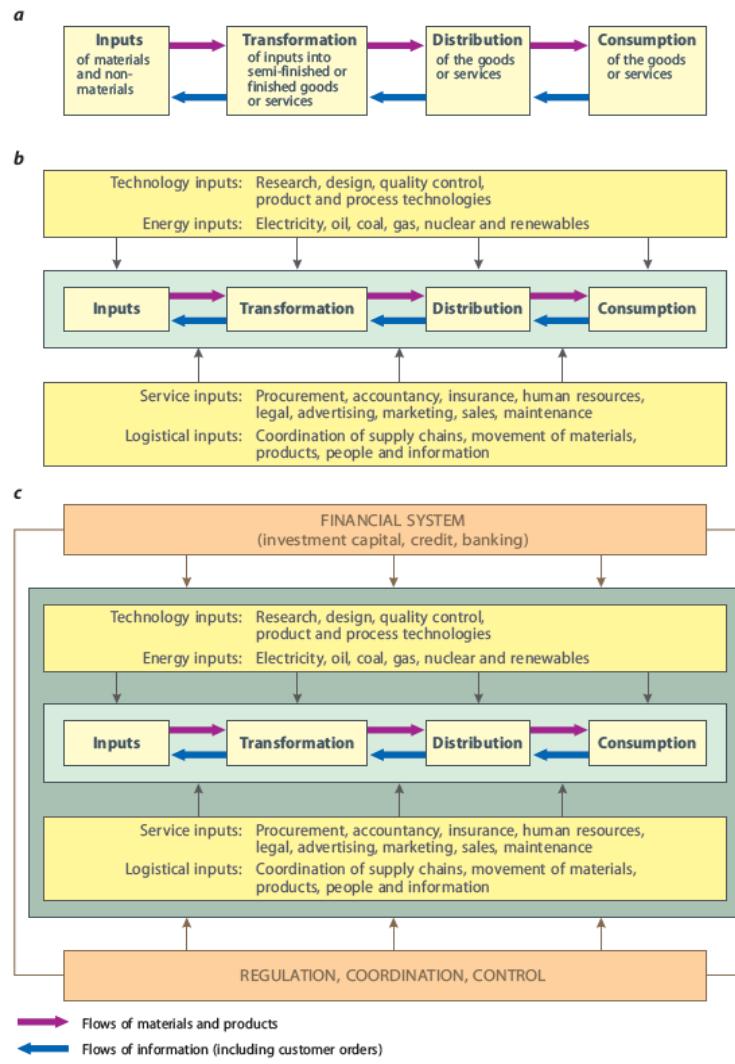


Figure 3.3 The basic components of a production circuit

GPNs: Arenas of Contested Relationships

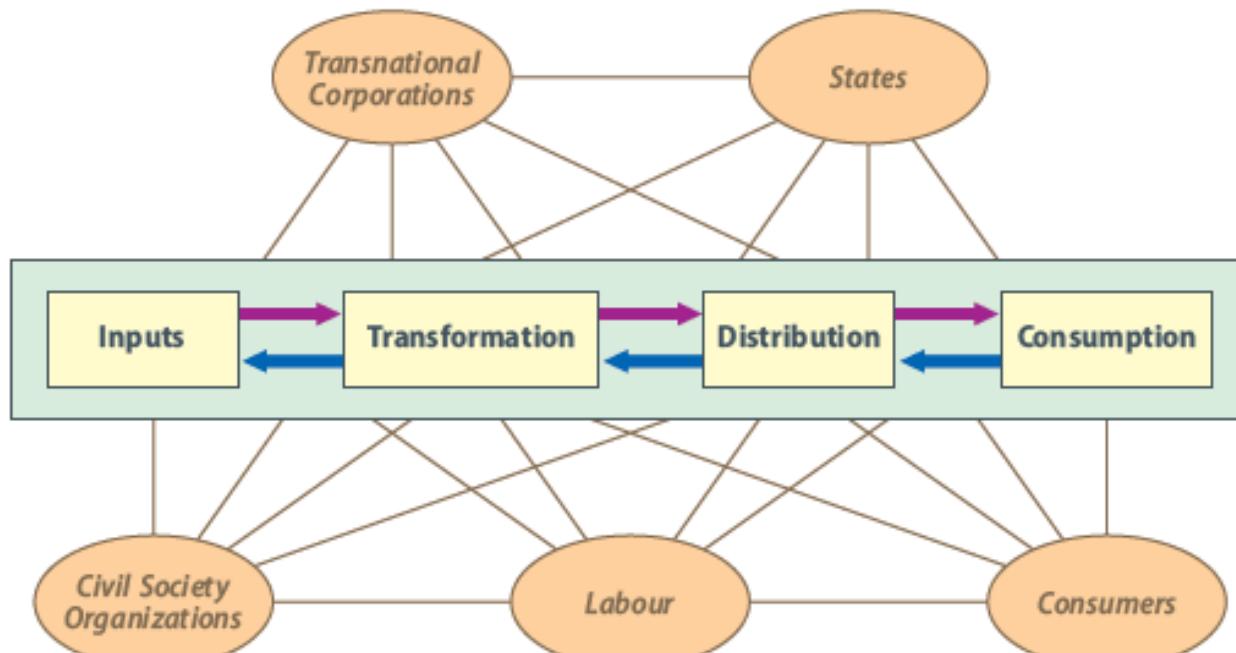


Figure 3.4 Major actor-centred networks in the global economy

Transnational Corporations

TNCs: Firms with power to coordinate and control operations in more than one country, even if they do not own them. Three characteristics:

1. Coordinate and control GPN processes within and between countries
2. Leverage geographical differences in natural resources, capital, labor, and state policies
3. Can switch resources and locations at a global scale

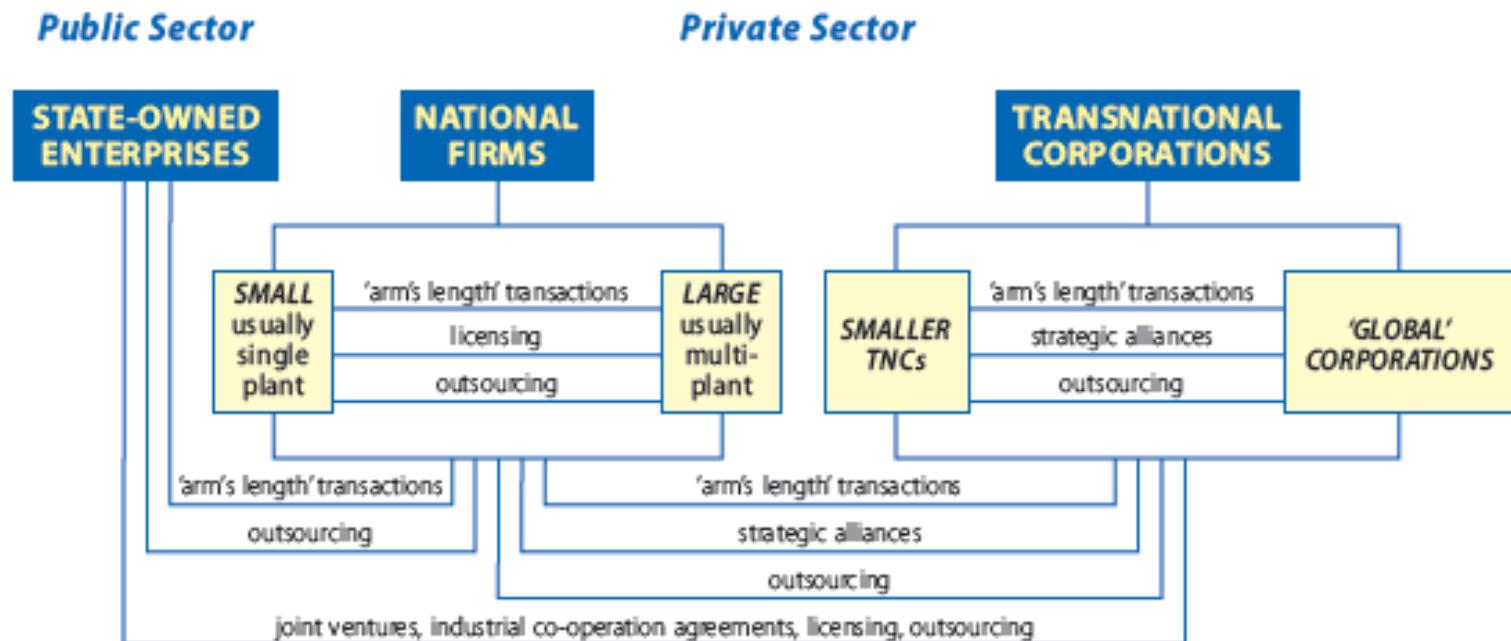


Figure 3.5 Types of firms in an economy

States as regulators in GPNs

- GPNs are often *embedded* within particular geographies
- Nation-states most important
- Supranational institutions (IMP), regional groupings (EU)
- Multiscalar regulatory systems

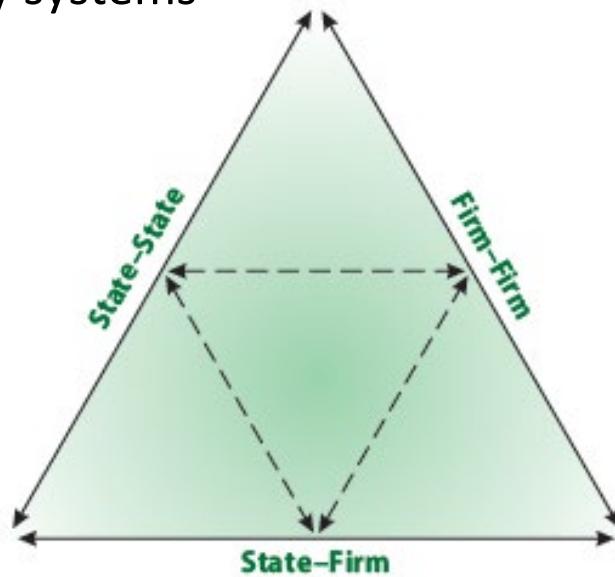


Figure 3.6 The triangular nexus of relationships between firms and states

Source: based on Stopford and Strange, 1991: Figure 1.6

Role of the State in Resource Development

- The State and Resources
 - State acts as a regulator and an operator (i.e. producer) of resources
 - Outside investment means loss of control
 - Usually initial development is outside-investment dependent, then once it is going strong it is nationalized
 - Varies by sector
- Power Relations
 - Power relationships between states and firms are dynamic and contingent
 - States have potentially enormous power over resource exploitation, though how much in practice depends on the state's strength and political orientation
 - Once private capital is sunk, advantage moves to the state which controls access to the resource
 - State–firm rivalry exists, also state–state rivalry

Labor

- Labor central to GPNs
- More place-bound than capital
- Labor must organize across national boundaries, limited success
- Labor union power waning

Consumers

- GPNS ultimately driven by consumer preferences – both ‘producer’ goods and services, in addition to ‘consumer’ goods
- People buy for needs and wants
- Commodities are functional and symbolic
- Consumer prefers vary by culture, region, etc.

Global Civil Society Organizations

- Global social movements are networks that collaborate across borders to advance agendas throughout the world
- Coordinated global campaigns, protests at international meetings
- Local campaigns

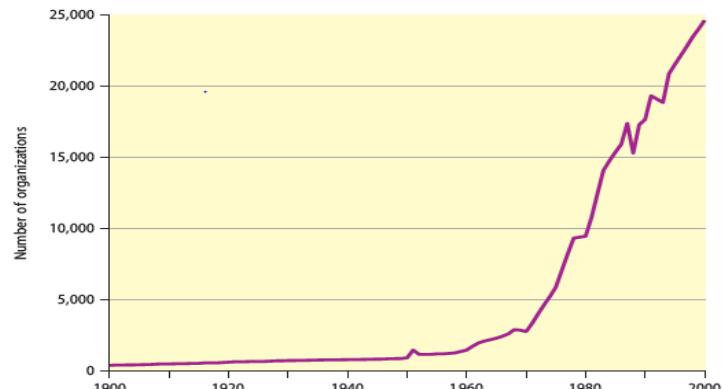


Figure 3.7 The growth of global civil society organizations

Source: based on Glasius et al., 2002: Figure 8.1

Uneven Power Relations in GPNs

- Power relationships within GPNs are highly *assymetrical*
- Control over key assets (capital, technology, labor, natural resources, consumer markets)
- Spatial and territorial range and flexibility of the actors
- Conflict and cooperation (TNC-States, TNCs-labor)

Geographical Clusters

- Geographic concentrations (e.g. cities)
- Process of agglomeration
- Generalized (urbanization economies)
- Specialized clusters (industrial spaces, industrial districts of Italy)
- Path dependence – Place becomes ‘locked into’ a pattern

Interconnections Dimensions in a Globalizing Economy

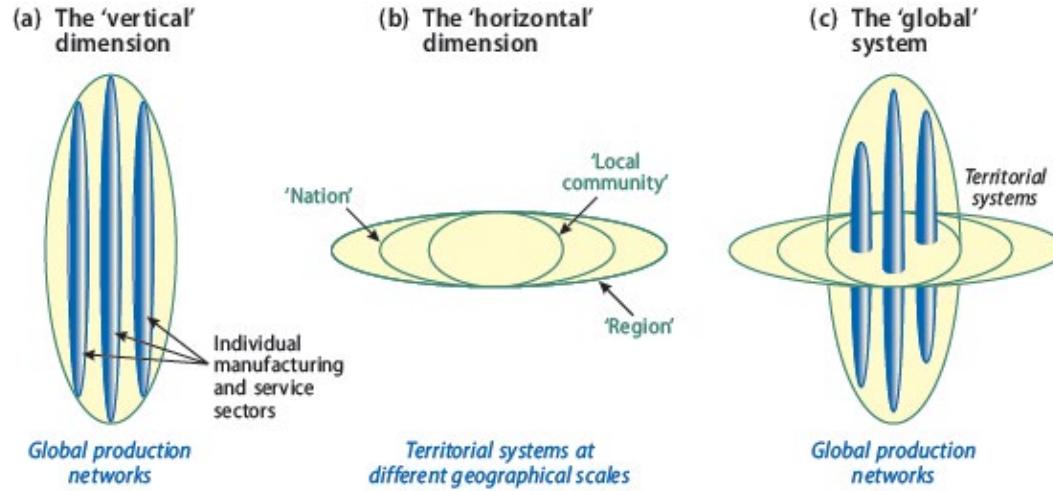


Figure 3.11 Interconnecting dimensions in a globalizing economy

Source: based in part on Humbert, 1994: Figure 1

- Organizational (in the form of production circuits and networks)
- Geographical (in the form of localized clusters of economic activity)

GLOBAL PRODUCTION NETWORK EXAMPLE: Extractive Industries

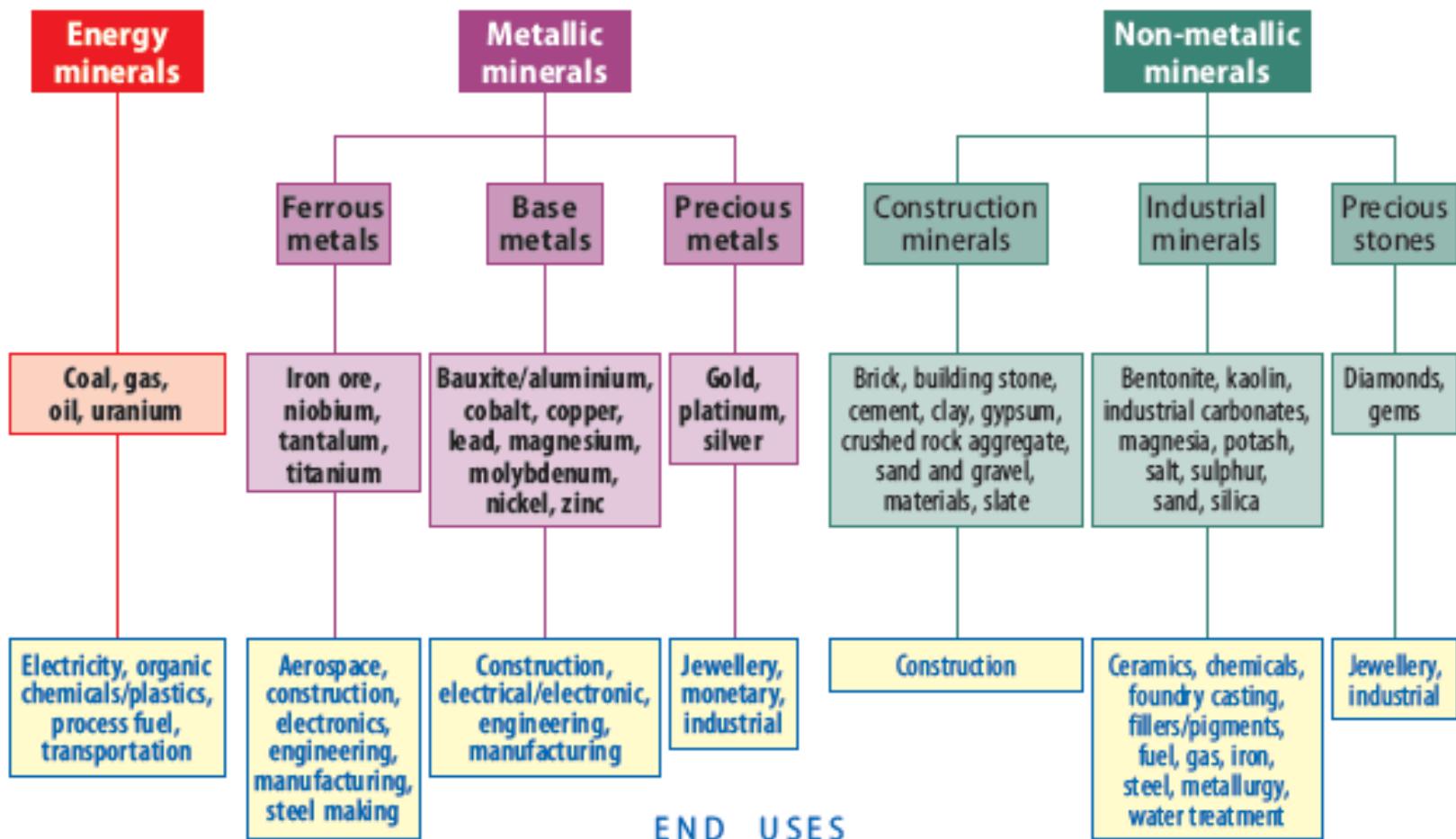


Figure 12.1 Classification of extractive industries

Source: based on UNCTAD, 2007: Box III.1.1

The Extractive Industries: Definition and Structure

- Natural Resources
 - An element or material occurring in nature
 - Only a resource if defined as such by users
 - The key ones at present are non-renewable, and locationally specific
 - This affects the nature and development of the extractive industries
- Characteristics of the Extractive Industries
 - A mix of private firms (TNCs) and state-owned enterprises (SOEs)
 - Production circuits are capital and technology intensive
 - Market for extractive industries is very volatile
 - Sector is more sensitive to general state of the economy than many other sectors
- The Extractive Cycle
 - Sequence of stages: exploration, development, extraction, processing, distribution, consumption
 - Challenges for firms
 - The time and investment needed to develop a new resource can be long
 - Exploration, processing and distribution involve high sunk costs
 - Transience of resource booms
 - Rise in the influence of specialist services firms

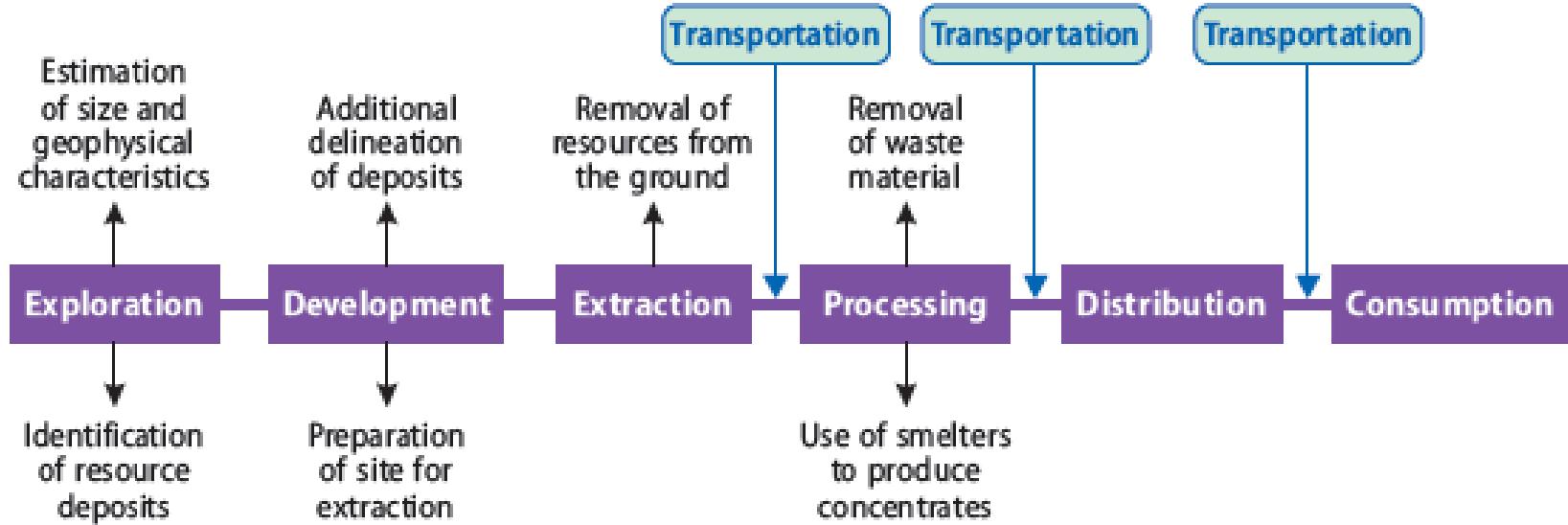


Figure 12.2 The basic extractive industry production circuit

Source: based, in part, on Turner et al., 1994: Box 16.4

Crude Oil Reserves in Billion Barrels (Gbbl)



Note: For visualization purposes we are showing only countries with 100,000,000 bbl (0.1Gbbl) of crude oil reserves or more.

How to read this map: Countries appear bigger as their crude oil reserves are bigger. e.g. Venezuela. Conversely, countries that have smaller reserves of crude oil appear smaller. e.g. Côte d'Ivoire.

countries that have
Article 8 sources

Article & Sources: <https://howmuch.net/articles/worlds-biggest-crude-oil-reserves-by-country>

[Central Intelligence Agency - https://www.cia.gov/library](https://www.cia.gov/library)

howmuch.net

OIL GPN

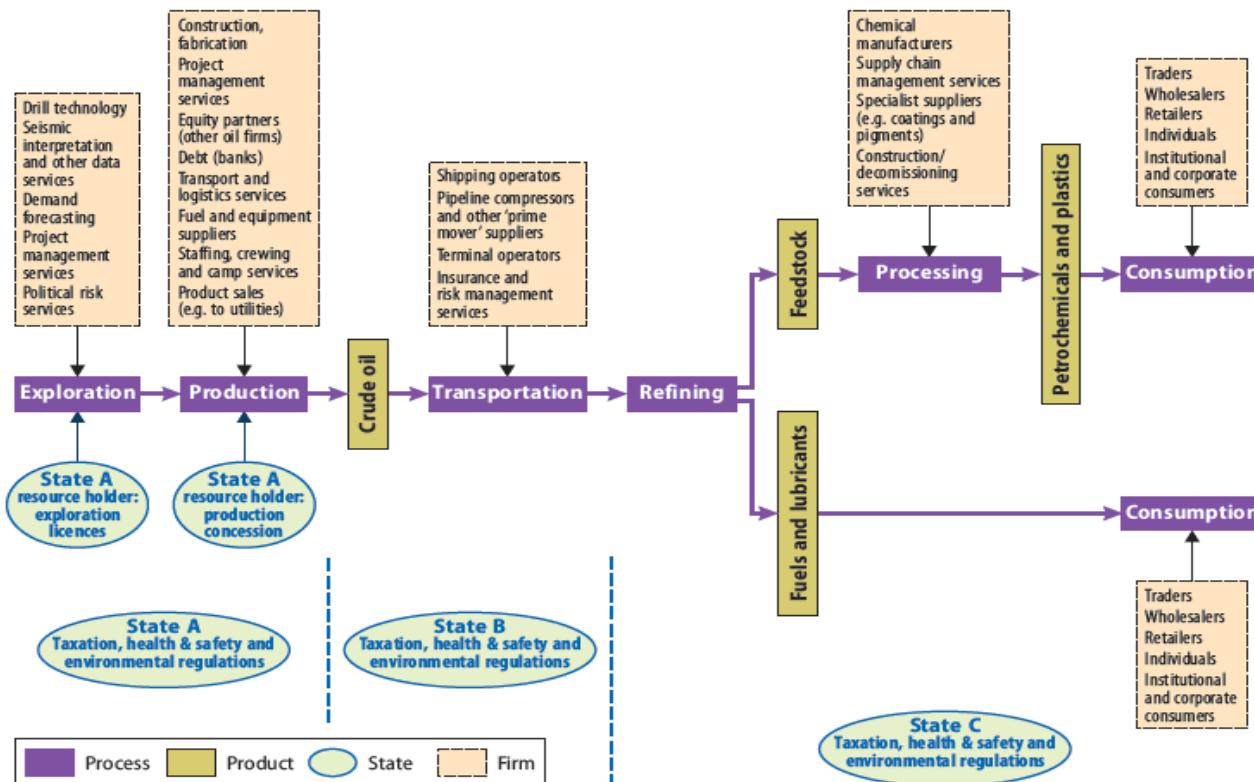


Figure 12.3 A GPN for oil

Source: based on Bridge, 2008b: Figure 3

State as GPN LEAD

MAPPING THE WORLD'S LARGEST

STATE-OWNED OIL COMPANIES

1 SINOPEC GROUP

Year founded: 1998
Fortune Global 500 Rank: 2nd

Sinopec is the world's largest oil company by revenue and is listed on a wide variety of stock exchanges. The Chinese government owns 68% of shares. In 2017, Sinopec expanded into Africa by purchasing 75% of Chevron's South African assets.

Source: Statista, Reuters, Sinopec

2 SAUDI ARAMCO

Year founded: 1933
Fortune Global 500 Rank: 6th

Saudi Aramco is the world's largest oil company by production and controls the second-largest reserve of crude oil at 270 billion barrels. The company was valued at \$1.7 trillion during its 2019 IPO, where shares representing 1.5% of the business were valued at \$8.53 apiece.

Source: Saudi Aramco, CNBC

3 ROSNEFT

Year founded: 1993
Fortune Global 500 Rank: 76th

Rosneft is Russia's largest oil company, accounting for 6% of global production. The company trades on the London Stock Exchange (LSE) and Moscow Exchange (MCX), with the Russian government maintaining a controlling interest.

Source: Reuters, Rosneft

4 PETROBRAS

Year founded: 1953
Fortune Global 500 Rank: 120th

Petrobras is one of South America's largest corporations and trades on the New York Stock Exchange (NYSE), Spain's Bolsa de Madrid, and Brazil's B3 exchange. The company has pledged a 25% reduction to its carbon emissions by the year 2030.

Source: Reuters

Did you know that three-quarters of the world's oil reserves are controlled by state-owned oil companies?
Source: Statista

Here's an overview of some of the most significant names in government-owned oil.

5 INDIAN OIL CORPORATION (IOCL)

Year founded: 1959
Fortune Global 500 Rank: 151st

With a market cap of over \$35 billion, IOCL is one of India's most valuable companies. The Indian government maintains a 41.5% stake in the company.

IOCL is heavily diversified with operations in oil, natural gas, chemicals, cryogenics, and explosives.
Source: IBEF

6 PETRONAS

Year founded: 1974
Fortune Global 500 Rank: 186th

Petronas is wholly owned by the Malaysian government and is the country's largest company by revenue. The company has pledged to achieve net zero carbon emissions by 2050.

Source: Petronas, S&P Global

7 PETRÓLEOS DE VENEZUELA (PDVSA)

Year founded: 1976
Fortune Global 500 Rank: Not listed

Although PDVSA controls the world's largest oil reserves, production has dwindled due to U.S. sanctions against the Maduro government. Venezuela's last functioning oil rig suspended its operations in August 2020.

Source: Statista, oil price

8 NATIONAL IRANIAN OIL COMPANY (NIOC)

Year founded: 1951
Fortune Global 500 Rank: Not listed

Iran was a founding member of the Organization of Petroleum Exporting Countries (OPEC). NIOC is the target of American sanctions for its support of the Islamic Revolutionary Guard Corps.

Source: OPEC, U.S. Department of Treasury

REVENUE (USD)

*2019 data unless specified

*2018, most recent figure available



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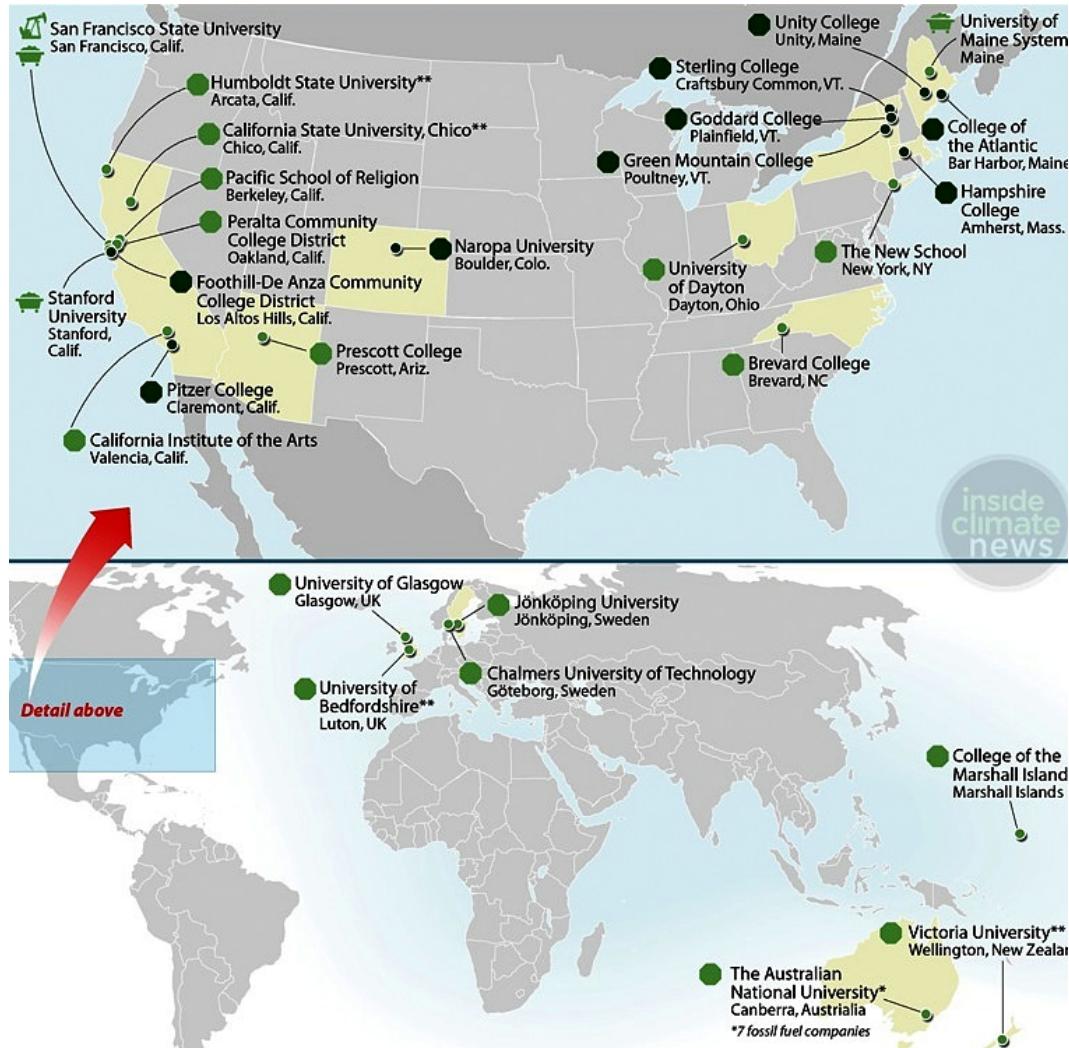
Geography of TNCs in OIL Production



Figure 12.8 Geographies of oil production by some major companies

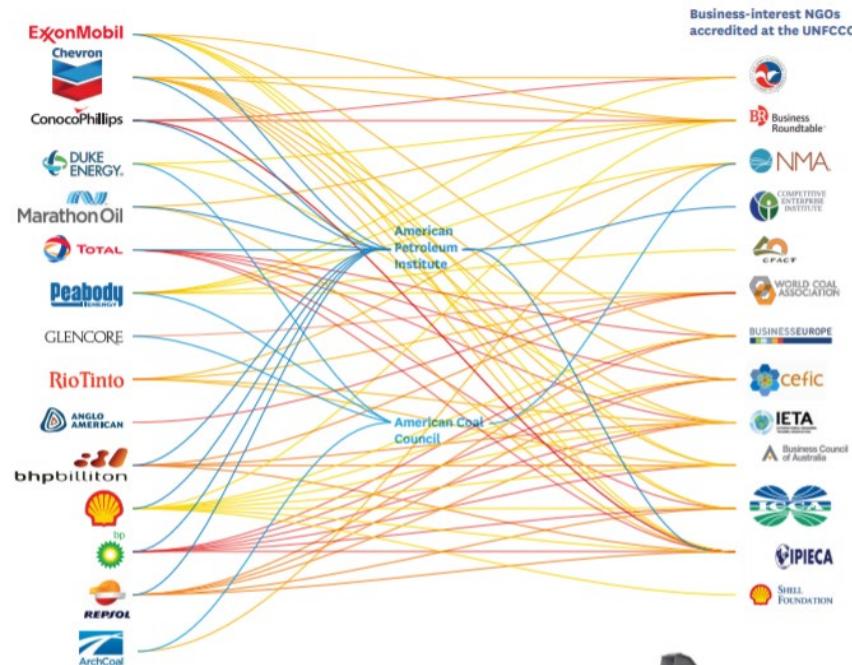
Source: based on data in UNCTAD, 2007: Table IV.10

Divestment Movement – Academic Institutions



NGO MAPPING OF TNC LOBBYING

HOW THE FOSSIL FUEL INDUSTRY INFLUENCES THE UNFCCC



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NGO Network Campaign - Regional



Labor Union – Save Oil Refinery



Group Breakouts

- Identify an extractive industry of focus
- Choose a specific product and set of geographies, to narrow scope
- Identify and describe the GPN, including the key actors (TNC[s], State, NGOs, Labour, Consumers)
- Discuss the power relations between these actors as it relates to Inputs-transformation-distribution-consumption)
- Share with Class members

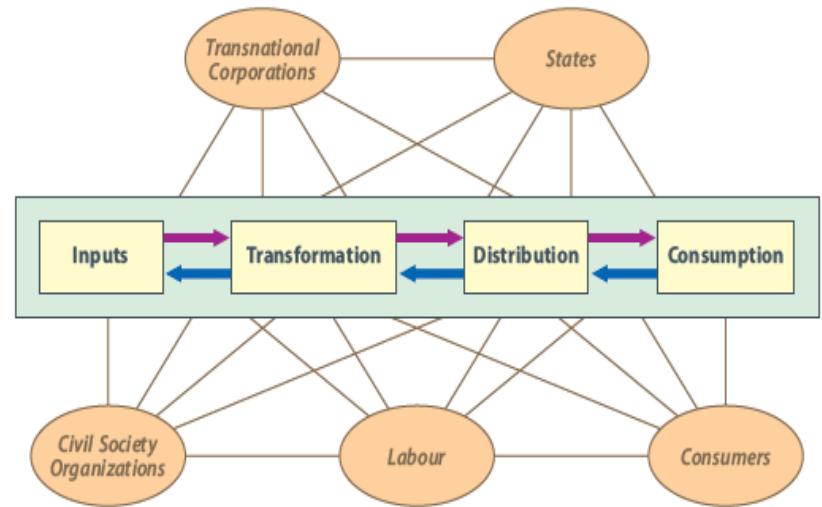


Figure 3.4 Major actor-centred networks in the global economy