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International Economics

II. World Trade: An Overview

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II. World Trade: An Overview

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1. How International Economics is Different

The laws of economics are the same everywhere:

- Goods and services trade at prices reflecting marginal utility
- Distribution of goods and services according to consumer preferences
- Factors of production priced and employed in a way reflecting their marginal revenue productivity



Differences in the International Sphere

- *Cultural and national preferences*
- Differences in *institutions*
- And in *fiscal policies* and *monetary regimes* are all important

Cultural Differences

- Preference for nationally/locally produced goods over cheaper, higher-quality foreign goods
- Language and cultural differences may increase costs of trade
- There may be a preference for investing in one's home country
- We have to consider the whole person, psychic profit as well as monetary profit



Political Differences

- Each state imposes its own set of regulations on the economy
- Political and legal institutions may be a barrier to trade
- Migration barriers may hinder labour mobility

Obstacles to capital mobility

- Insecure property rights for foreign investors
- Heavy regulation of foreign investment
- Fiscal policies and differences in tax regimes impose costs on international trade
 - Apart from specific tariffs etc.



The clearest indicator of international trade

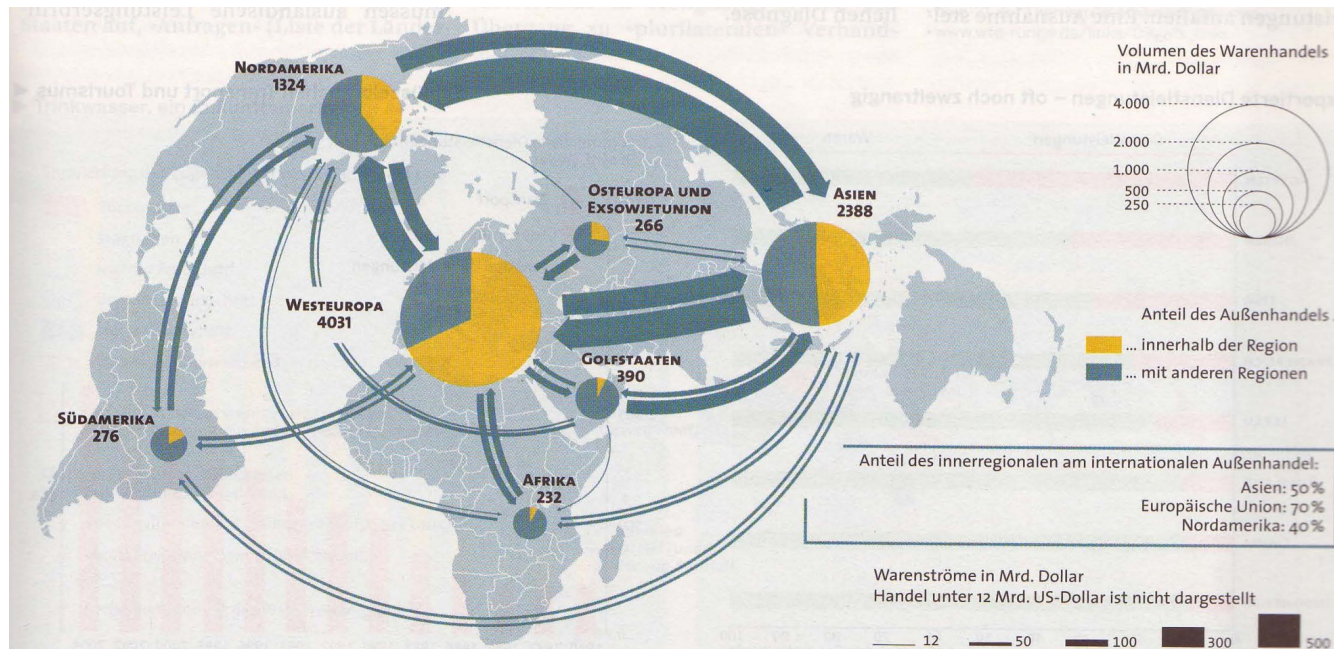
- Usually the difference in currencies – each country has its own
- Domestic trade is virtually always in one currency
- In previous decades/centuries this difference did not exist

National Currencies Dominant

- Especially since 1970s, freely fluctuating currencies
- With exceptions: currency unions, dollarization
- Exchange rate risks, currency costs emerges for individual traders
- The currency regime and national balance of payments become (more) important



2. The Directions of World Trade





Measuring Trade: The Gravity Model

- The gravity model measures trade between countries, estimates what the volume of trade “should” be
- Inspired by Newton’s law of gravity: the gravity between two objects depends positively on distance and mass
- Jan Tinbergen (1962) formulated the model
- Strong correlation between economic size, distance, and volume of trade between two countries

The basic intuition behind the model

- The volume of trade between two countries is proportional to the product of the countries’ economic size
- Trade diminishes as distance increases



The Gravity Model

$$F_{ij} = G \frac{M_i M_j}{D_{ij}}$$

F_{ij} = value of trade between country_{*i*} and country_{*j*} (both exports and imports)

G = absolute term

M_i, M_j = economic size of country_{*i*} and country_{*j*} (GDP)

D_{ij} = distance between the two countries

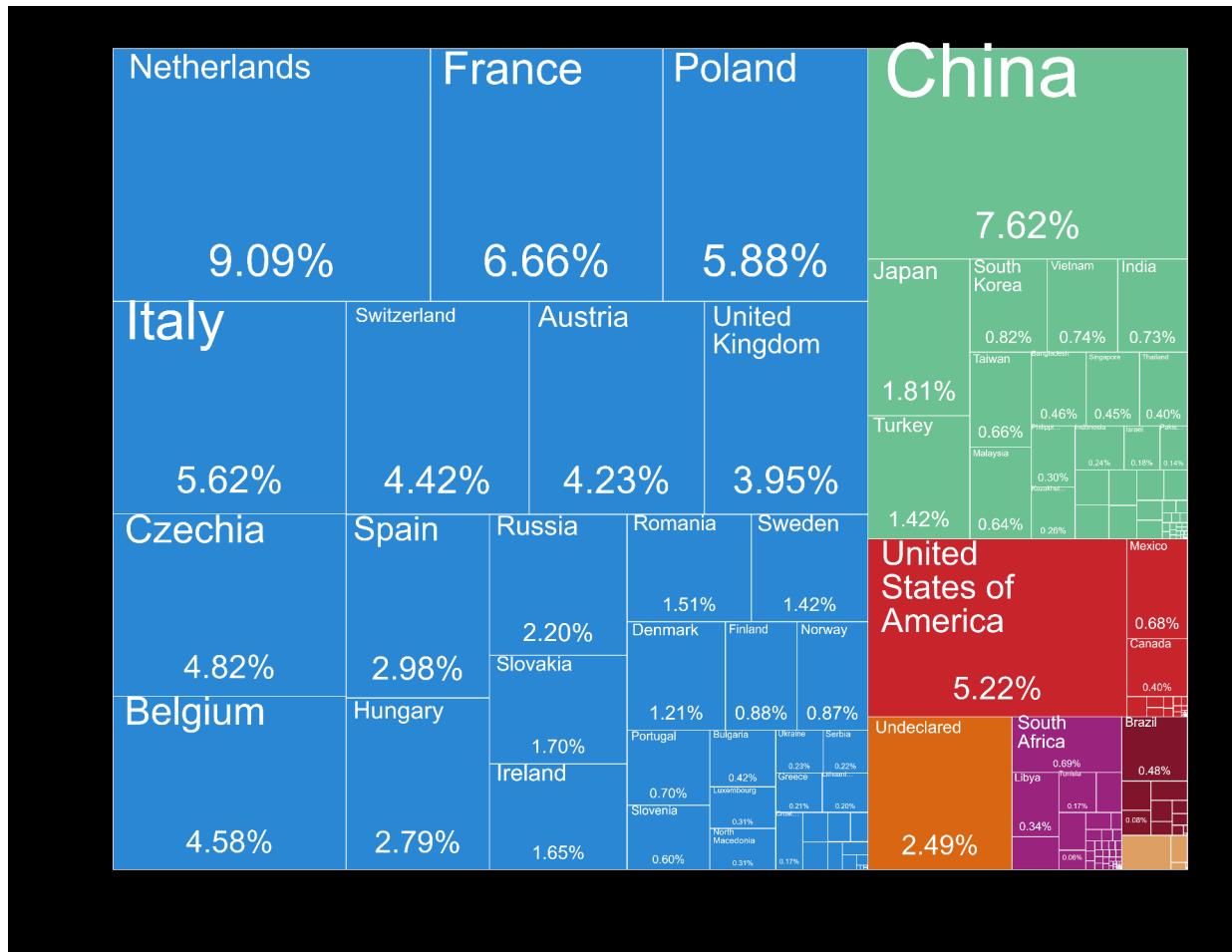


Alternative Determinants of Trade

- Empirical estimates suggest that shared language, culture and history increase trade volume between countries
- Exchange rate volatility has a negative effect on trade, due to greater costs of currency conversion and hedging (Rose 2001)
- These and other potential factors can be incorporated into more advanced gravity models

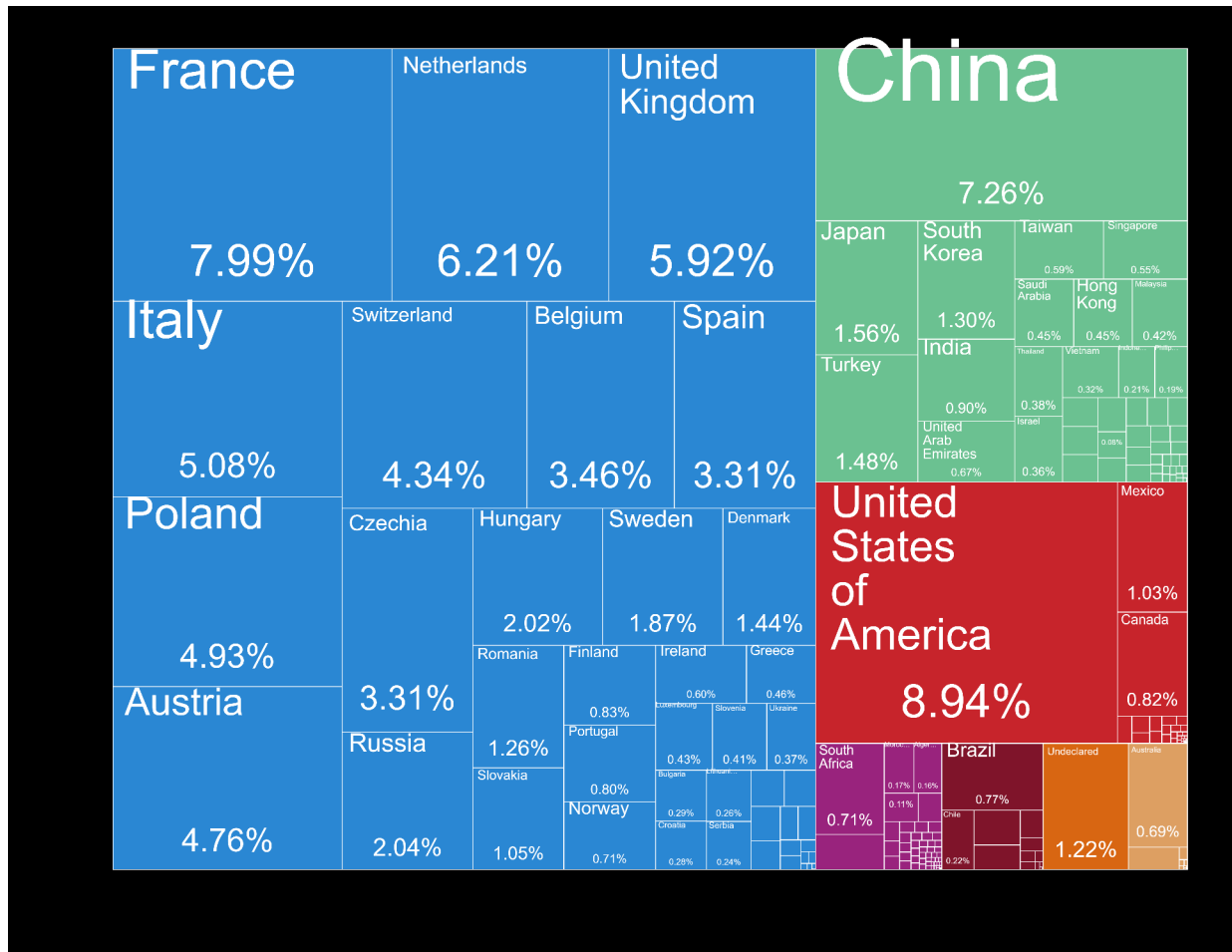


Directions of Trade: Germany 2019 (Imports)



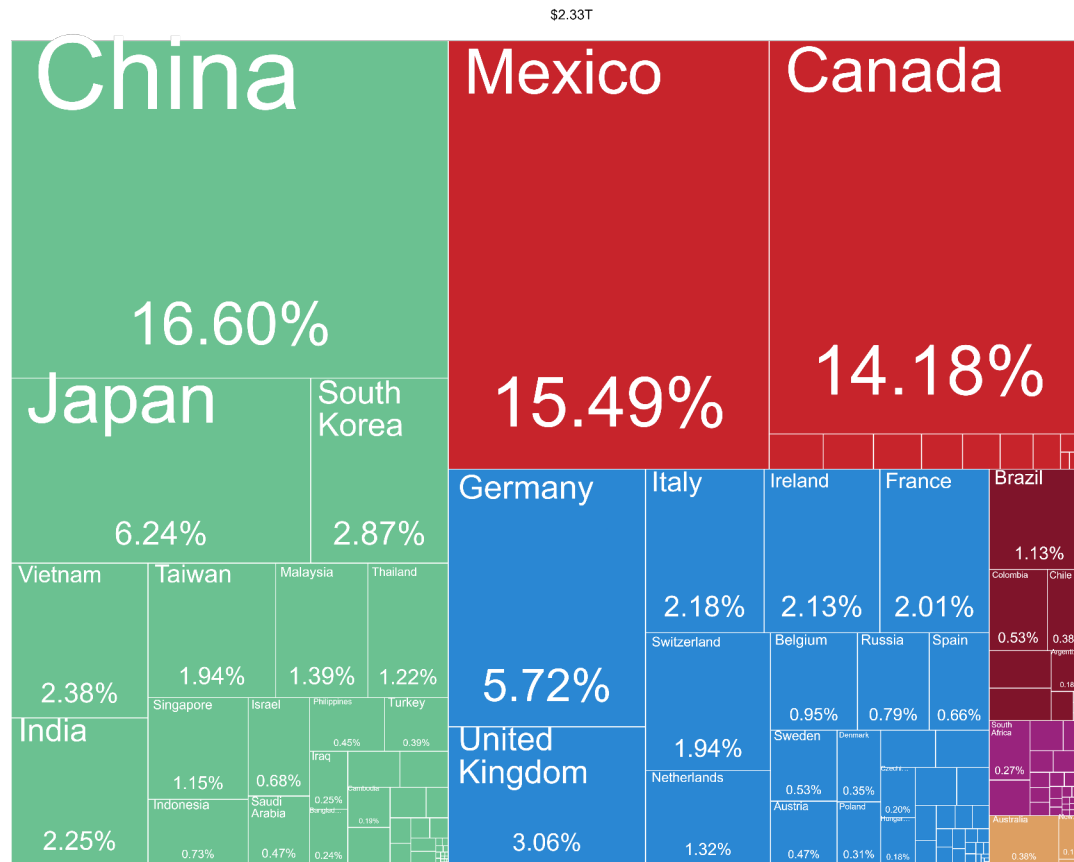


Directions of Trade: Germany 2019 (Exports)



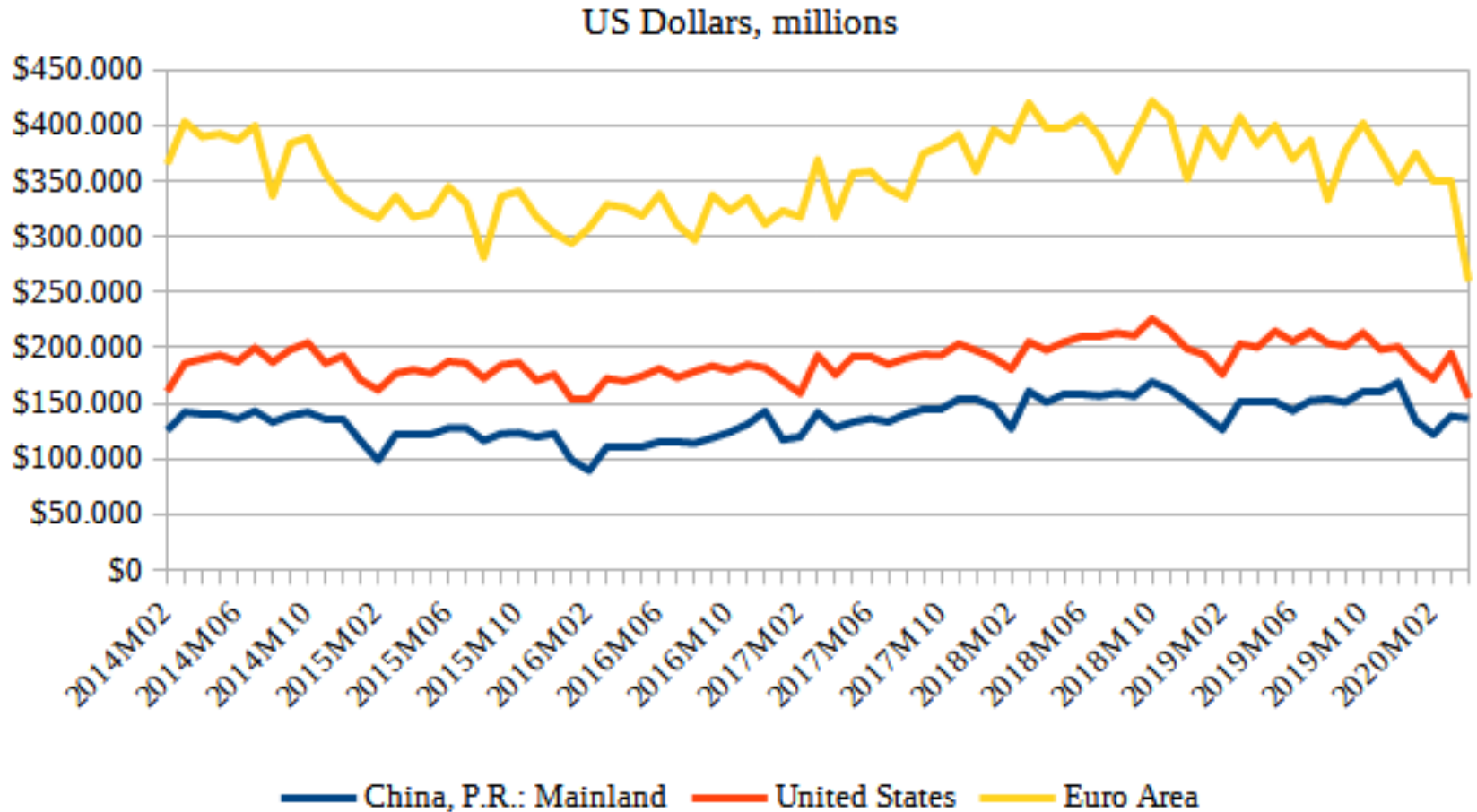


Directions of Trade: USA 2019 (Imports)



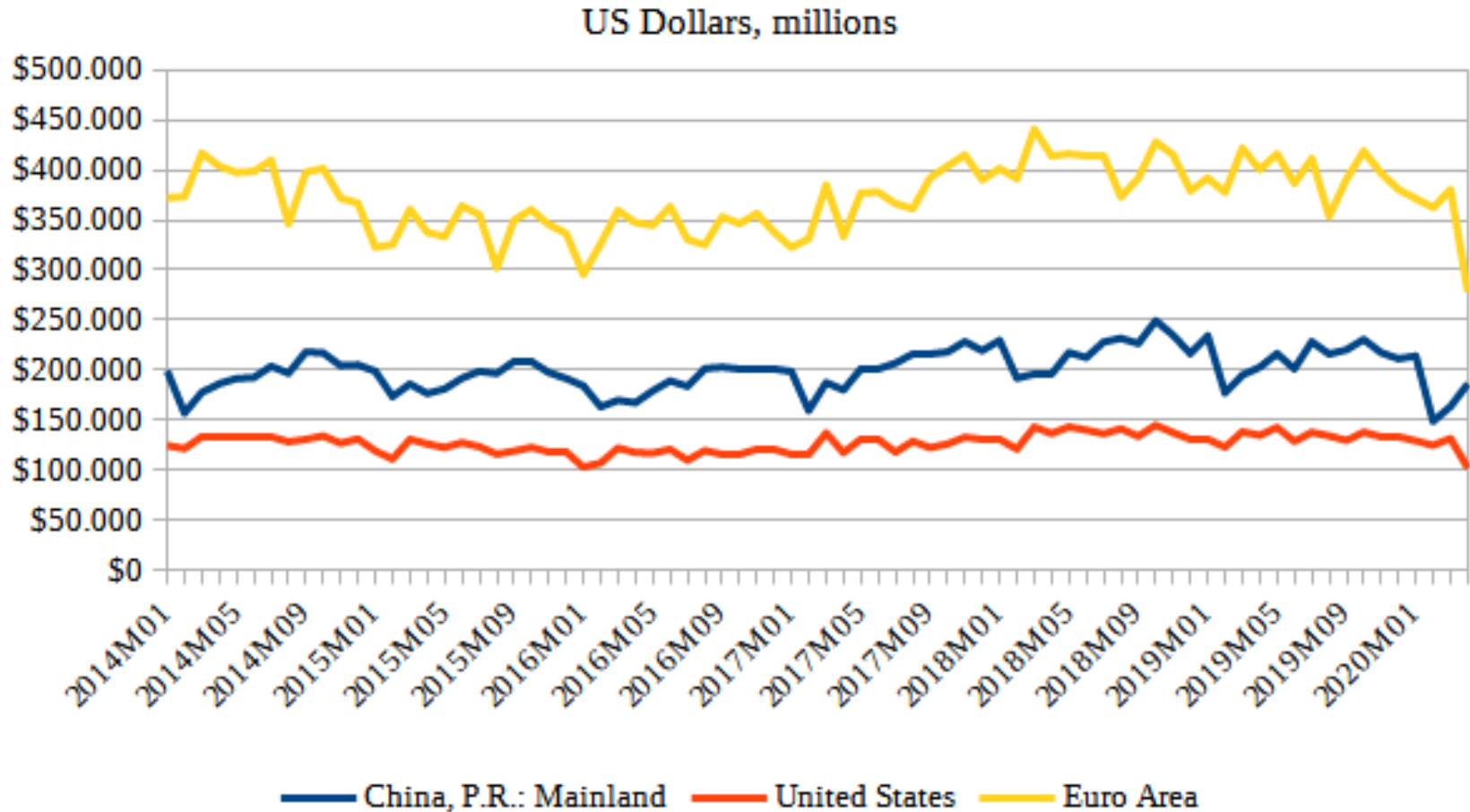


Exports of China, USA, Euro Area 2014-2020





Imports of China, USA, Euro Area 2014-2020





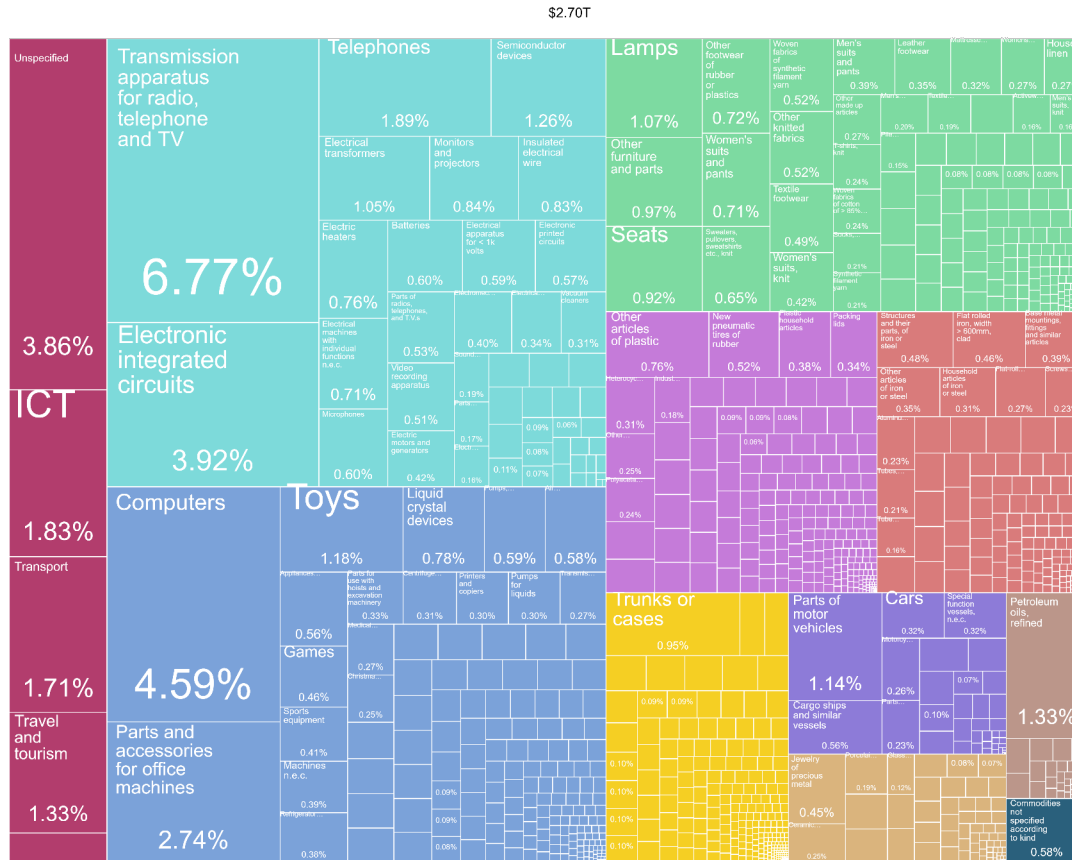
3. World Trade by Commodities

Three production hubs can be defined:

- Raw materials such as oil are exported by Middle Eastern countries, Russia, and some African and Latin American countries
- Agricultural products are exported by many Latin American and African countries – but also by European countries, Japan and the USA, due to protectionist policies
- Manufactured products are mostly exported by European countries, Japan, and emerging Asian economies
- USA and UK also export financial services

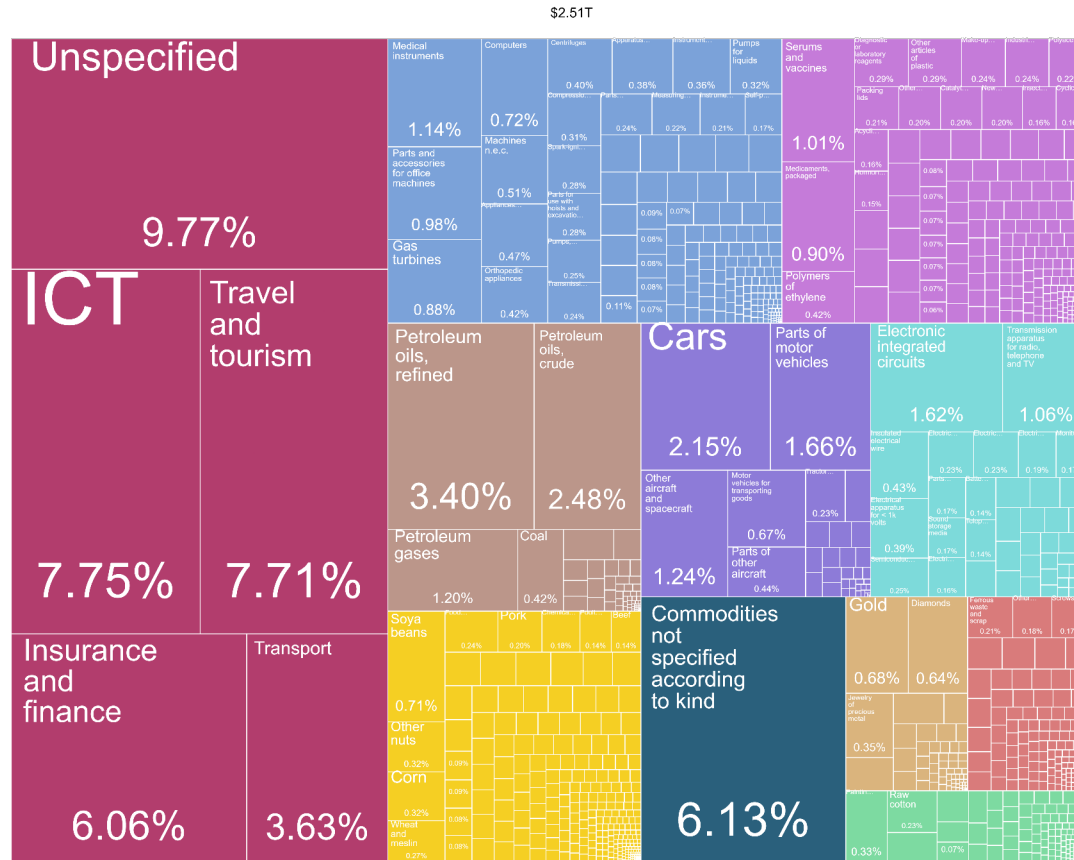


Chinese Exports by Kind, 2019





American Exports by Kind, 2019





Data Source for Trade Statistics

- UN Comtrade
- IMF Directions of Trade
- Harvard Atlas of Economic Complexity



4. Relative Prices: The Terms of Trade

- Definition: the price of export relative to import goods
 - relative prices
- The terms of trade of a given country are a proxy for the benefits from trade to that country
- Once a country is engaged in trade, any change in world market prices affects its terms of trade, its real income and wealth



Net barter or commodity terms of trade

- The ratio of export prices to import prices when volume is held constant
- P_{Ex} / P_{Im}

Gross barter terms of trade

- The ratio of a quantity index of exports to a quantity index of imports
- Q_{Ex} / Q_{Im}

Income terms of trade

- The ratio of the value of exports to the price of imports
- $P_{Ex} \times Q_{Ex} / P_{Im}$



- The income terms of trade reflect the capacity to import goods – paid for with exports
- An increase in the income terms of trade may simply reflect an increased integration into the world economy
- This measure does not capture the total capacity to import: capital transfer can also finance imports
- In the long run, there will be a tendency for exports and imports to equalize – for exports to pay in full for imports



Commodities Pay for Commodities

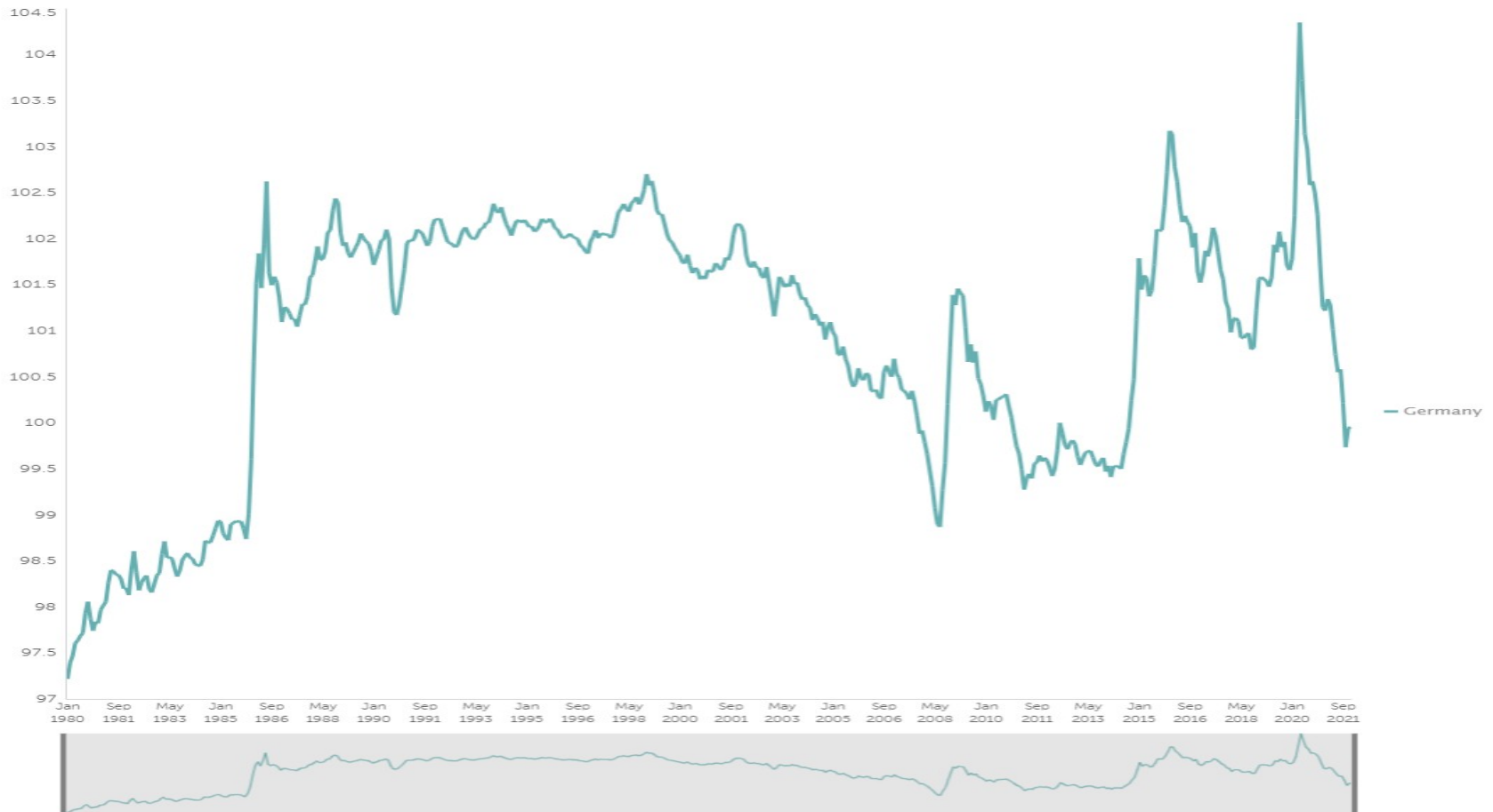
Money performs but a momentary function in this double exchange; and when the transaction is finally closed, it will always be found, that one kind of commodity has been exchanged for another.

- J. B. Say





Commodity Terms of Trade: Germany



Source: Commodity Terms of Trade (04/07/2022)
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Commodity Terms of Trade: China



Source: Commodity Terms of Trade (04/07/2022)
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Commodity Terms of Trade: USA



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Commodity Terms of Trade: Russia



Source: Commodity Terms of Trade (04/07/2022)
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5. Gains from Trade

The apparatus of supply and demand

- Helps us to get an initial idea of the gains from trade
- We can see net gains for all using standard welfare analysis

Limitations to welfare analysis

- Hidden assumption that monetary expenditures measure subjective utilities
- and that these utilities can be compared between persons
- However, it is a good heuristic for seeing the initial *welfare* gains from trade



Example: Columbus and the Motorbikes

Example

- America has recently been discovered and a discrepancy in the US price for motorbikes and the European price has been noted
- Difference in price is an *arbitrage* opportunity, the basis of trade

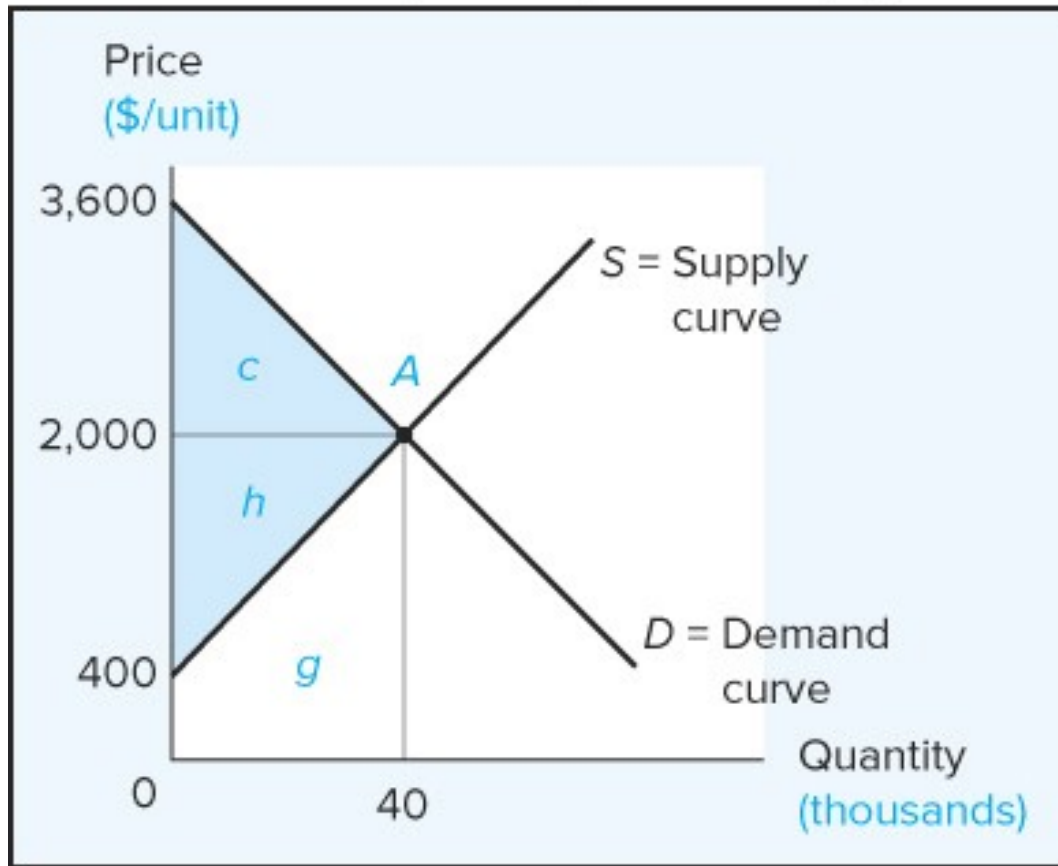
Arbitrage

- Merchants buy in cheap markets and sell in expensive markets, until one world market price is established
- Trade leads to new world market equilibrium and one world market price
- Outcome according to law of one price



American Motorbike Market before Trade

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Quantity of imports demanded

- The excess demand (quantity demanded minus quantity supplied) in the importing country at the world market price

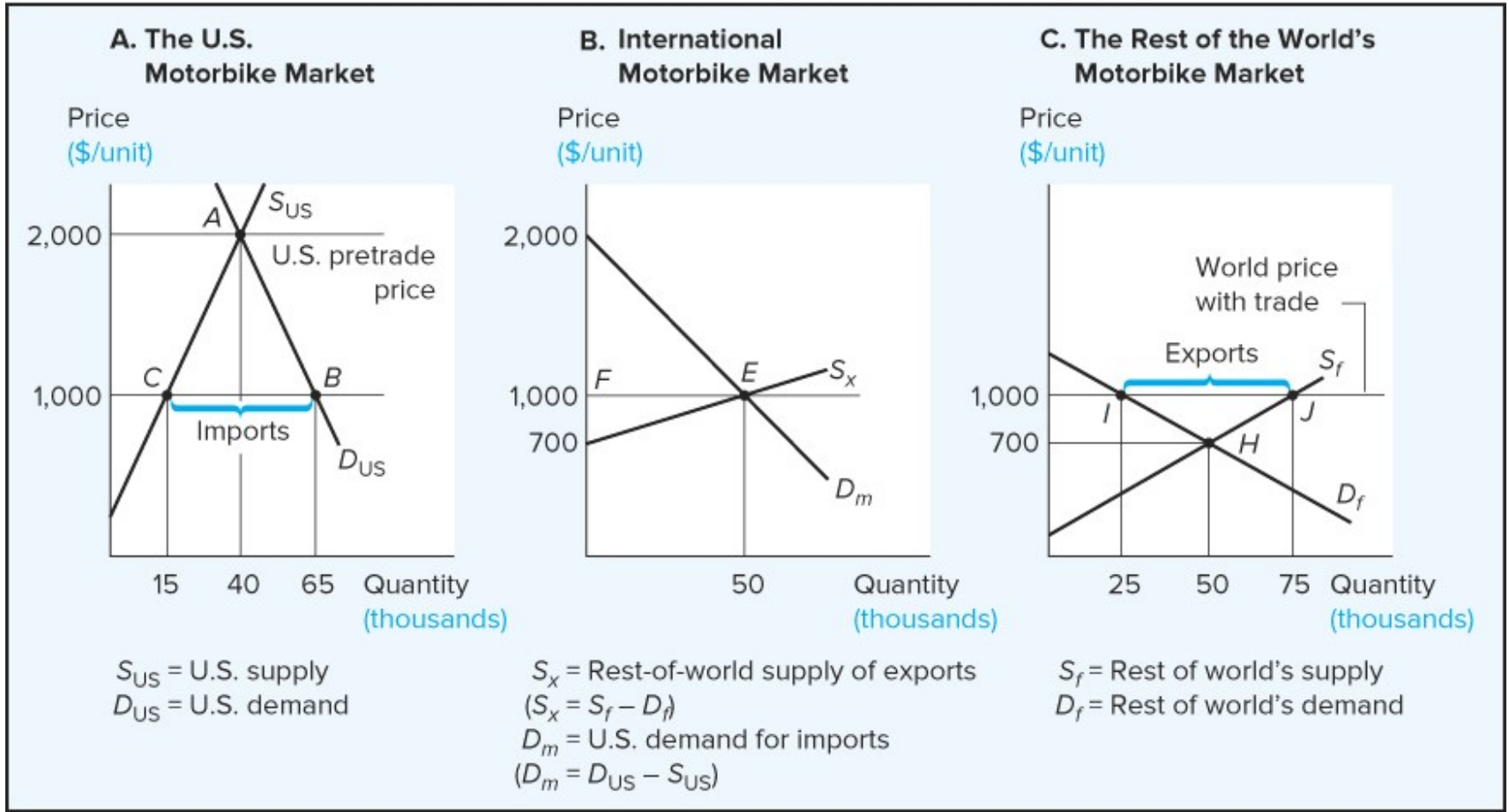
The quantity of exports supplied

- The excess of supply (quantity supplied minus quantity demanded) in the exporting country at the world market price
- In equilibrium, quantity supplied and demanded in the world market will be equal



The World Market

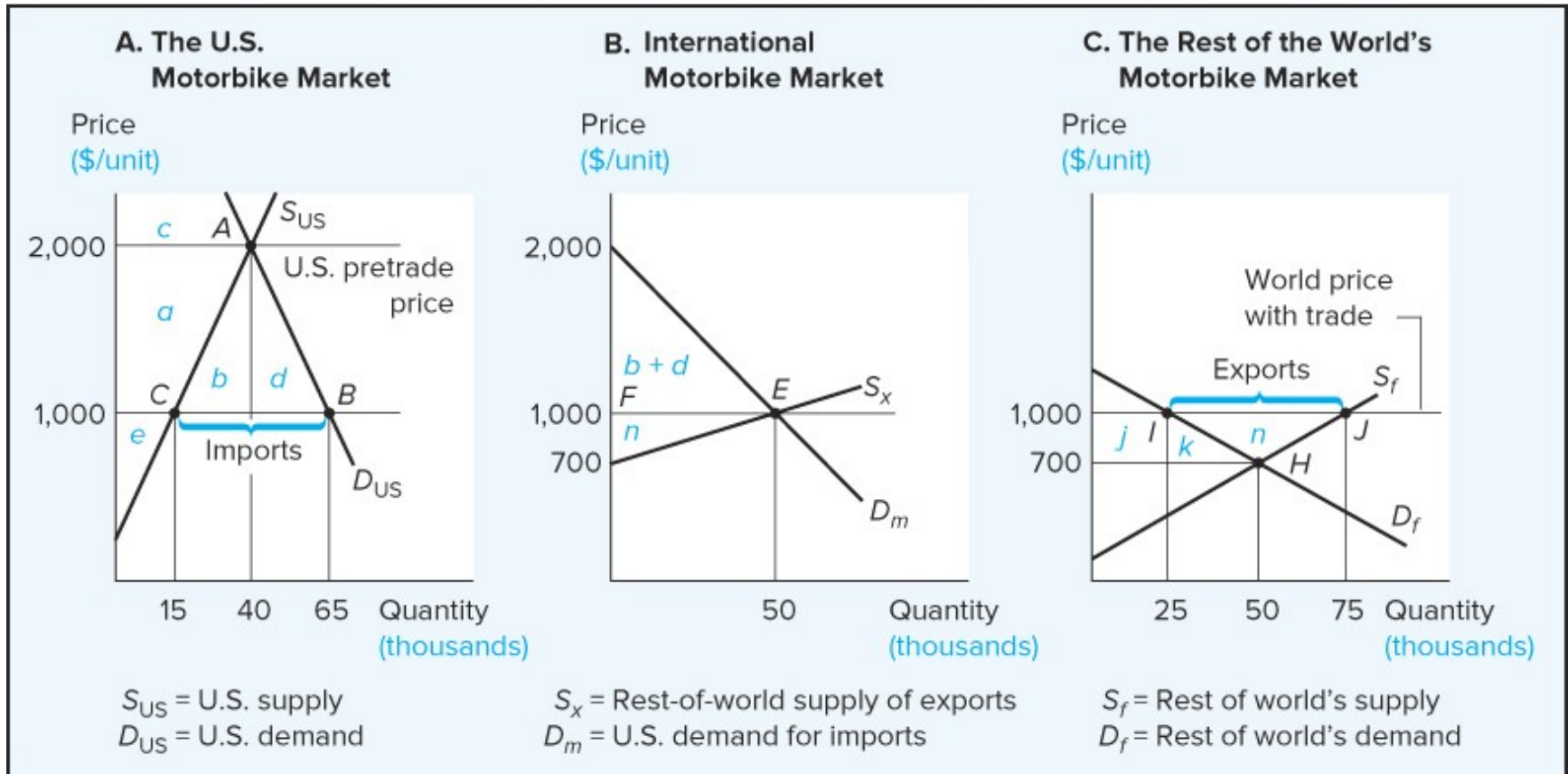
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Welfare Effects from International Trade

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In importing country

- Consumer surplus increases
- Producer surplus falls

In exporting country

- Consumer surplus falls
- Producer surplus increases

Overall net gains in both countries

- *Assuming we can validly sum gains and losses of different persons like this*



Welfare Effects from International Trade

Welfare Effects of Free Trade					
Group	United States			Rest of the World	
	Surplus with Free Trade	Surplus with No Trade	Net Effect of Trade	Group	Net Effect of Trade
Consumers	$a + b + c + d$	c	$a + b + d$	Consumers	$-(j + k)$ [a loss]
Producers	e	$a + e$	$-a$ [a loss]	Producers	$j + k + n$
U.S. as a whole (consumers plus producers)	$a + b + c + d + e$	$c + a + e$	$b + d$	Rest of the world as a whole	n



Does Everyone Gain from Trade?

In general, all who participate in exchange expect to gain

All exchanges lead to welfare gains

- If consumers decide to buy from foreigners, this shows they expect to gain from trade
- If producers decide to sell to foreigners, this too shows they expect to gain
- We cannot say that a change in spending patterns lead to a demonstrable *welfare* loss
- Changing trade patterns often lead to some kind of monetary loss to those who are now not engaged in exchange
- Welfare analysis in itself indecisive – whether the loss to one outweigh the benefit to another is an ethical question beyond economics

The real gains from trade come from the division of labour



6. Mercantilism

Skeptical of Trade

- Prominent 16th - 18th century in Europe
- The gain of one country can come only at the expense of another

Policies

- Exports should be encouraged, imports hampered
- A positive trade balance / balance of payments the aim



Mercantilists and the Balance of Trade

- Purpose: to increase the amount of money (gold and silver) in a country
- Hence also called bullionism
- Large stock of bullion an indicator of prosperity – example of the Netherlands in the 17th century

Logical Fallacy

- It does not follow that prosperity depends on an increase of the supply of money
- It could be the other way around
- But more bullion means more resources for the king to tax



Simple Mercantilist View

- A negative balance with any one country must be discouraged
- Outflows of bullion bad

Advanced Mercantilist View

- The *overall* balance of trade what is important, not with individual countries
- Policy must focus on achieving an overall positive balance



Encouraging Exports

- Export subsidies
- Subsidies to domestic industry
- Subsidies to national shipping (navigation acts)

Discouraging Imports

- High tariffs on manufactured goods
- Colonies for raw materials (and later: captive markets)

Bullion Regulations (Monetary Policy)

- Prohibition of exports, central government monopoly
- More sophisticated mercantilists thought such regulations futile



Gains to Select Groups

- Privileged merchants
- Greater government control, direction of the economy
- Colonialism
- Corruption: bureaucrats extract wealth through bribes

Economic Inefficiency

- Factor allocation distorted, leading to lower productivity
- Policies often self-defeating: higher exports eventually lead to higher imports
- Bullionism is self-defeating



Why Accumulate Specie?

- People keep as much money as they desire
- An “adverse balance of payment” can only endure if people desire to reduce cash holdings, export specie

Hume’s Price-Specie Flow Mechanism

- Inflow of money (a positive balance of trade) means increase of domestic money supply → higher domestic prices
- Therefore exports fall, foreign goods become relatively cheaper → imports rise, reversing the positive balance of trade
- Specie again flows out

Ultimately, patterns of trade have been disrupted, with no gain



Return in 20th Century

- Mercantilism refuted by Smith, Classical Economists
- Came back with new justifications
 - E.g., to protect domestic workers from international competition
- And old: a favourable balance of trade in itself desirable

Examples

- China sometimes accused of mercantilist policies by “flooding” international markets with exports
 - Hence, trade with China should be restricted – a mercantilist policy
- Computer chips are strategic, they must be produced at home



7. Summary

1. International economic relations are different due to cultural, and especially institutional monetary differences
2. The gravity model relates trade between countries to economic size and distance
3. Most trade is in manufactured goods and raw materials, we see clear specialization among the countries, regions of the world
4. Each country's terms of trade are strongly influenced by fluctuations in world market prices
5. Gains from trade are always mutual, properly understood
6. Mercantilists, old and new, dispute the general gains from trade



Pugel: *International Economics*, pp. 1-31.

Rose, Andrew 2001: Currency Unions and Trade: The Effect is Large. *Economic Policy* 16, 449-461.

Tinbergen, Jan 1962: *Shaping the World's Economy: Suggestions for an International Economic Policy*. New York.

IMF DOTS:

<https://data.imf.org/?sk=9D6028D4-F14A-464C-A2F2-59B2CD424B85>

UN Comtrade: <https://comtrade.un.org/>

The Atlas of Economic Complexity: <https://atlas.cid.harvard.edu/>