



INTERNATIONAL TIMBER TRADE

An introduction

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UMR Silva, AgroParisTech



Background: Forester, economist

Research: Trade, urbanization,
bioeconomy, modelling

In charge of the **DA Forest
Information and Resource
Strategies** (DA FIRS)

In charge of the **UE Filière Forêt-
Bois et Commercialisation des
Produits Forestiers** (2A D1N)

Forest Information and Resource Strategy (DA FIRS)

Objective: Integrating forest information systems, forest economics, and forest policies to secure resources from forest systems in a changing world.

Partnership AgroParisTech x Géodata Paris, combines forest information sciences, forest sciences and social sciences for the study of resources at large scales.

In English, in Nancy, starting in 2026

UE “FAR WEST”

- 18/09 | Qualité et classement des bois
- 12/11 | Commerce inter. (round 1)
- 18/11 | Gestion des forêts tropicales
- 21/11 | Commercialisation des bois + Acteurs de la filière
- 05/01 | Commerce inter. (round 2)
- 14/01 | Visites de scieries
- 16/01 | Commerce inter. (round 3)



An aerial photograph of a winding asphalt road that curves through a dense, green forest. Several cars are visible on the road, traveling in different directions. The road has white dashed lines marking the lanes. The forest is lush and covers the surrounding hillsides.

OBJECTIVES

A course on international
timber trade

- 1 Taking a step back:
from France to
international forest
issues.
- 2 International trade
data for wood
products: scope
and limits.
- 3 Data storytelling:
what do the data say?
- 4 A game of trade:
theoretical intuitions
on trade mechanisms.

A person with long brown hair, seen from behind, is walking away on a path through a dense forest. They are wearing a light-colored, multi-pocketed backpack with brown leather straps and buckles. The forest is lush with green foliage and tall trees, with sunlight filtering through the canopy. A white rectangular box with a thin border is superimposed over the middle of the image, containing the text.

**WHAT IS THE PLACE OF SUCH A COURSE IN AN
YOUR TRAINING?**

Why do we teach you this?

1. A forest engineer is trained to understand/analyze complex systems:

- Open systems
- Systems that evolve over time
- Systems with complex spatial and temporal structures

Why do we teach you this?

2. Forest engineers will have to make decisions and formulate solutions in a context of ecological, social and economic uncertainty.

Part of economic uncertainty comes from international interactions and trade.

Why do we teach you this?

3. Link with the operational aspects of your future jobs:

- Working with timber traders,
- Influence of international policies,
- Pressure of international competition...

Outline



01

Definition and scope



02

The big picture



03

Wood trade data



04

Structure and recent dynamics



05

Conclusion

01

Introduction: Definition and scope of the international wood trade

A man with dark hair, wearing a black suit, white shirt, and dark tie, is looking directly at the camera. In the background, there is a blurred circular logo with the text 'L'ÉCLAIR' visible. A white rectangular box with a thin black border is positioned in the upper right corner, containing the text 'Time to shine!' in a bold, white, sans-serif font.

**Time to
shine!**

A person is seated on a stage, illuminated by blue spotlights. The stage floor is covered with a blue, textured material. The background is dark with blue light beams.

How would you define the international wood trade?

♦ **A:**

♦ **B:**

♦ **C:**

♦ **D:**

A world map is shown with black outlines of continents on a light background. Numerous thin, light-brown strings are stretched across the map, connecting various countries. Small, dark, circular pins are used to anchor these strings to the map. The strings create a complex web of connections across the globe, particularly concentrated in the Northern Hemisphere. A semi-transparent dark grey rectangle is overlaid on the center of the map, containing white text.

**International timber trade:
Exchange of timber products between
different countries.**

INTERNATIONAL ECONOMICS

The study of international trade and monetary issues



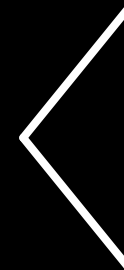
International trade

Structure of international trade, trade gains, protectionism...



International economics

Study of economic interactions between sovereign states



International finance

Capital market, balance of payments, exchange rates...



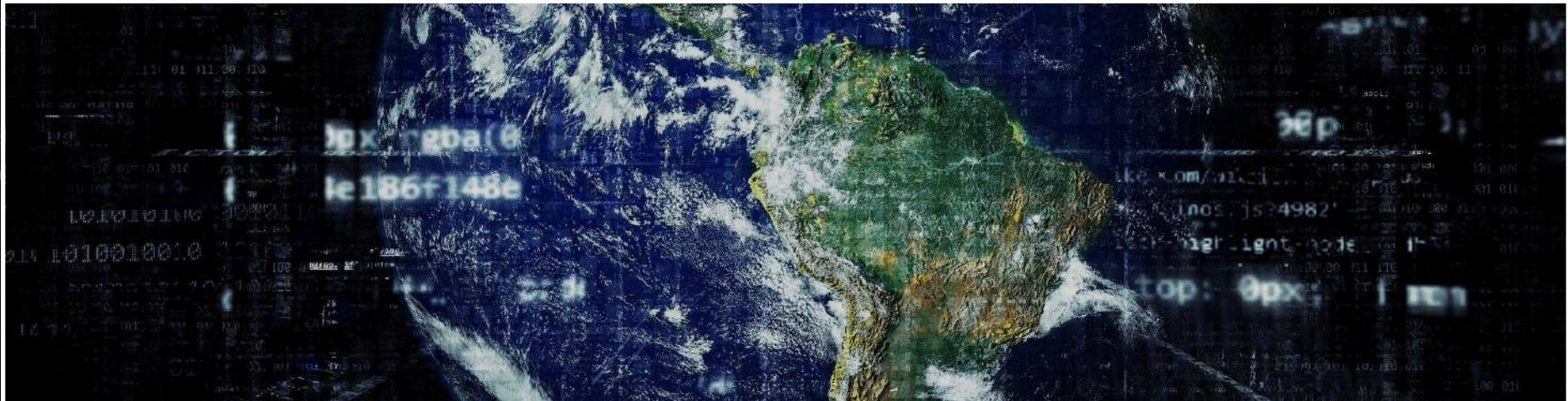
INTERNATIONAL ECONOMICS

What are the respective merits of free trade and protectionism?

Why do some countries accumulate trade deficits or surpluses, and how do these imbalances resolve themselves?

What are the underlying causes of currency and banking crises and how can they be remedied?

How can the state fight unemployment and inflation and what are the constraints on economic policy for a country open to the world? ...



FULL FOOT IN GLOBALIZATION

Growing international trade: lower transportation costs, removal of trade barriers, fragmentation of the production process, div. of cultural exchanges.

Growing financial transactions, facilitating portfolio diversification, but leading to increased fragility.

New means of communication.

Global financial crises, the spectacular rise of China, the construction of Europe...



A dusty paradigm?



A dusty paradigm?

- Wood consumption mainly domestic. The production of wood products is generally much greater than the exports or imports of wood products.

- Progressive erosion of international borders and reduction of transport costs.

- New logics and exchange strategies are setting up: towards a transnational global economy.

A world map is shown in the background, with various countries outlined. Several thin, light-colored strings are stretched across the map, connecting different geographical locations. These strings are held in place by small, dark, circular pins or weights. The overall image conveys a sense of global connectivity and trade.

International timber trade:
Exchange of timber products between
~~different countries~~ companies from
different countries.

An aerial photograph of a dense forest. The trees are mostly green, but there are several dead, grey trees scattered throughout, particularly in the upper left quadrant. The lighting is somewhat dim, giving the image a moody, naturalistic feel.

02

The big picture: the state of
forests and current issues

Forests of the world



4.06 billion hectares in 2020 ~ 31% of the world's land area (FAO, 2020).

The highest level of biodiversity on land (IPBES, 2019).

Many ecosystem services on which human societies rely heavily on:

- **Provision**
- **Regulation**
- Cultural
- Support

45%
4.06
0.4%

Tropical forests



45% of the world's forests are tropical.

Rough characteristics:

- Fast growth
- Highest growing stock per unit area
- Complex ecosystems
- Mostly in developing countries
- Low accessibility

1.3%

45%

4.06

Boreal forests



27% of the world's forests are boreal.

Rough characteristics:

- Slow growth
- Great growing stock per unit area
- Relatively preserved
- In a few countries
- Largely inaccessible

0.4%

27%

80

57

Temperate forests



16% of the world's forests are temperate.

Rough characteristics:

- Medium growth
- Growing stock per unit area
- Managed
- Northern American and European forests are temperate
- Great accessibility

54%

16%

178

Subtropical forests



11% of the world's forests are subtropical.

Rough characteristics:

- Between tropical and temperate forest.

~60%

11%

1.3%



Uneven distribution



Forests are unevenly distributed between countries: **5 countries possess 54% of global forests.**

1. Russian Fed.: 815 Mha ~ 20%
2. Brazil: 497 Mha ~ 12.2%
3. Canada: 347 Mha ~ 8.5%
4. The USA: 310 Mha ~ 7.6%
5. China: 220 Mha ~ 5.4%

68%

54%

16%

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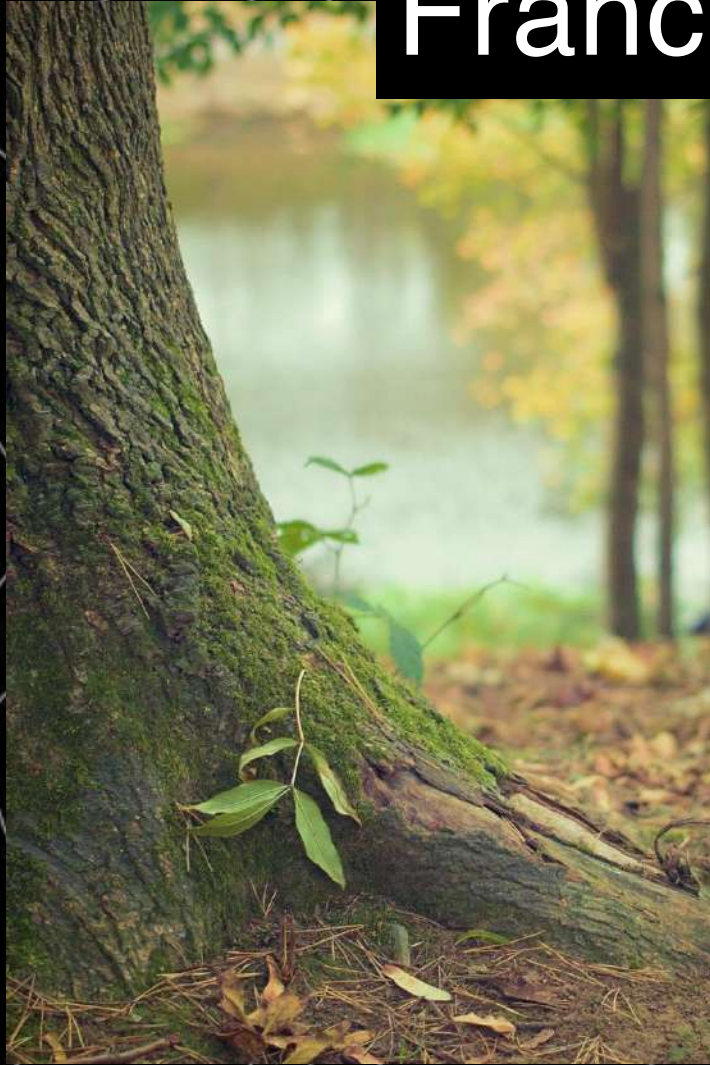
The EU: 160 Mha ~ 3.9%

68%

54%

16%

France: small player



Metropolitan French forests represent 17.1 Mha ~0.4% of the world's forest.

4.06

0.4%

27%



Forest loss



420 million hectare of forest loss
Between 1990 and 2020 ~ 10% of the
2020's forest area (FAO, 2020).

The tropics particularly affected
(Barlow et al., 2018; FAO, 2020).

Highest global forest area net loss
in Africa (average annual rate of net
loss increasing).

South America 2nd-highest net
loss in forest area (average annual
rate of net loss decreasing).

16%
420
~60%

Threats on forests



Global forest area is approximately 68% of its pre-industrial level (IPBES, 2019).

Main causes: deforestation, natural disturbances.

Future wood supply is uncertain.

→ Trade and displacement effect: the forest transition and imported deforestation.

55%

68%

54%

Illegal logging



80 Mm³ of roundwood illegally harvested in 2013 (Hoare, 2015) ~ 0.2% of roundwood production.

Illegal logging mostly happened in **Indonesia (50%), Brazil (25%), and Malaysia (10%)**, but also in Ghana, Cameroon, DRC, Laos, Papua New Guinea and Republic of Congo.

The trade of illegally logged timber has an **estimated value of ~USD51-152 billion annually** (Interpol).

Illegal harvesting ≠ deforestation.

Global wood harvest



**~40 billion m³ harvested in 2022.
+60% in approximately 60 years
(1961-2022)**

Wood for (sustainable) development.
Increasingly integrated in
environmental or energy transition
policies.

Mitigating climate change: wood
store carbon and act as substitute
to GHG-intensive materials.

→ We need wood. Badly.

**178
~60%
17%**

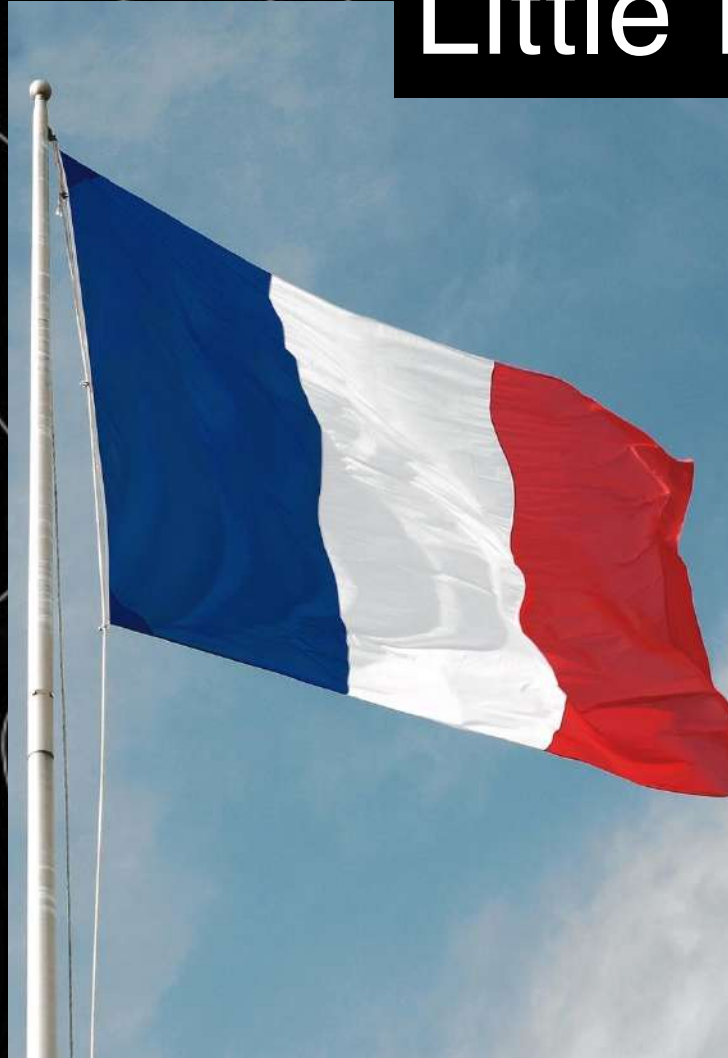
The producers



10 countries represent 55% of total roundwood production (2022):

1. The USA: $\sim 459 \text{ Mm}^3 \sim 11.5\%$
2. **India:** $\sim 348 \text{ Mm}^3 \sim 8.8\%$
3. China: $\sim 317 \text{ Mm}^3 \sim 8\%$
4. Brazil: $\sim 304 \text{ Mm}^3 \sim 7.6\%$
5. **Russia:** $\sim 197 \text{ Mm}^3 \sim 5\%$
6. Canada: $195 \text{ Mm}^3 \sim 4.9\%$
7. Indonesia: $124 \text{ Mm}^3 \sim 3\%$
8. Ethiopia: $120 \text{ Mm}^3 \sim 3\%$
9. DRC: 2%
10. Nigeria: 2%

Little France...



France represents 1.3% of the total roundwood production...with 0.4% of the global forest area?

How can such “miracle” happen?

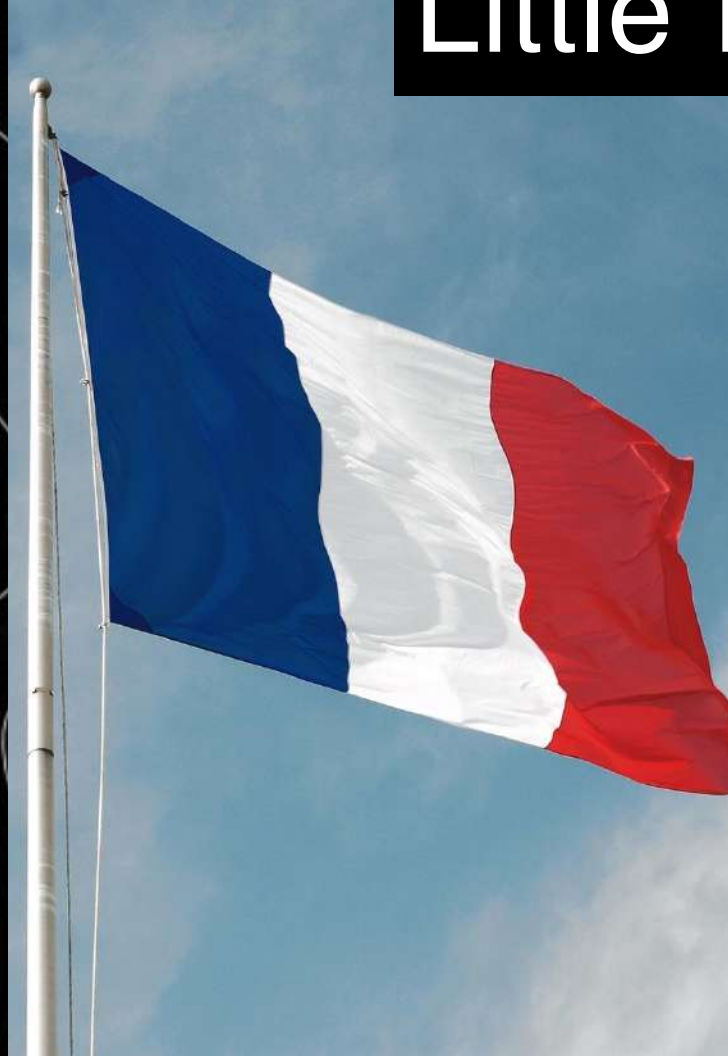
11%

1.3%

45%



Little France...



France represents 1.3% of the total roundwood production...with 0.4% of the global forest area?

How can such “miracle” happen?

A matter of accessibility.

11%

1.3%

45%



Materials



Energy







**The international wood trade is not new,
and the uses of wood have changed.**

The background of the slide is a dark, semi-transparent image of a financial trading interface. It features multiple overlapping windows. On the left, there is a table with columns for 'Time', 'Price', and 'Volume', displaying various numerical data points. To the right of the table, there are several line charts. The top chart is labeled 'EURUSD (bid), ticks, # 300 / 300' and shows a fluctuating line graph. Below it, another chart is labeled 'Gold, spot - 1,276,820' and also displays a line graph. The bottom of the interface shows a search bar, an 'Alerts' button, and a 'Settings' button, along with a date stamp '13 June 2014'.

03 International wood trade data: their characteristics, their format, their limits.

What is the most reliable source we can have on trade?

More especially on quantities and values of commodities



What is the most reliable source we can have on trade?

More especially on quantities and values of commodities

Customs are the most reliable source of data concerning tradable commodities.

They collect at least, for every shipment of a given commodity: **the product code, the tonnage, the value, the origin, and the destination** of the merchandise.



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International Standard
Industrial
Classification

**Broad Economic
Categories**

Harmonized Systems

Central Product
Classification



Standard



International Trade Classification





International Standard
Industrial
Classification

**Broad Economic
Categories**

Harmonized

Standard Systems

Central Product
Classification

International Trade Classification



Harmonized System - WCO

“ It comprises about 5,000 commodity groups; each identified by a six digit code, arranged in a legal and logical structure and is supported by well-defined rules to achieve uniform classification.

“ The maintenance of the HS is a WCO priority. This activity includes measures to secure uniform interpretation of the HS and its periodic updating in light of developments in technology and changes in trade patterns.

“ The system is used by more than 200 countries and economies as a basis for their Customs tariffs and for the collection of international trade statistics. Over 98 % of the merchandise in international trade is classified in terms of the HS.

“ The HS Committee also prepares amendments updating the HS every 5 – 6 years.

World Customs Organization

Example of a wood

- **The first two digits (HS-2) identify the chapter the goods are classified in, e.g., 44 = *Wood and articles of wood; wood charcoal.***
- **The next two digits (HS-4) identify groupings within that chapter, e.g., 44.03 = *Wood in the rough, whether or not stripped of bark or sapwood, or roughly squared.***
- **The next two digits (HS-6) are even more specific, e.g., 44.03.23 = *Other, coniferous - Of fir (*Abies* spp.) and spruce (*Picea* spp.), of which the smallest cross-sectional dimension is 15 cm or more***

Correspondence tables

CPC Correspondence Tables					
FROM / TO	CPC prov	CPC Ver. 1.0	CPC Ver. 1.1	CPC Ver. 2	CPC Ver. 2.1
CPC prov	-			-	-
CPC Ver. 1.0		-		-	-
CPC Ver. 1.1			-		-
CPC Ver. 2	-	-		-	
CPC Ver. 2.1	-	-	-	 	-
ISIC Rev. 3	 	 	-	-	-
ISIC Rev. 3.1	-	-	 	-	-
ISIC Rev. 4	-	-	-	 	 
BEC Rev. 5	-	-	-	-	 
SITC Rev. 4	-	-	-		-
HS1988		-	-	-	-
HS1996	-		-	-	-
HS2002	-	-	 	-	-
HS2007	-	-	-		-

NAVIGATION

Classifications on economic statistics

Correspondence Tables

CPC

HS / SITC / BEC

ISIC → UN

ISIC → Other

SEARCH

Classification:

CPC

Version:

Version 2.1

Language:

English

Code or Keyword:

Input a code or keyword

Apply

Reset



Classification of forest products 2022



Classification of forest products 2022		Corresponding				(an asterisk "*" or "ex" indicate partial link)			
CODE	DESCRIPTION	FAO 1982	JQ 2019	HS 2017	HS 2022	SITC 4	BEC 5	CPC 2.1	ISIC 4
012.	Wood in the rough other than wood fuel	111	1.2	4403.21	4403.21	247.4	2111	0311	0210
		121	1.2.C	4403.22	4403.22	247.5	1111	0312	0220
			1.2.NC	4403.23	4403.23	247.9		0313*	
			1.2.NC.T	4403.24	4403.24	245.01*			
				4403.25	4403.25				
				4403.26	4403.26				
				4403.41	4403.41				
				4403.49	4403.42				
				4403.91	4403.49				
				4403.93	4403.91				
				4403.94	4403.93				
				4403.95	4403.94				
				4403.96	4403.95				
				4403.97	4403.96				
				4403.98	4403.97				
				4403.99	4403.98				
				4401.11*	4403.99				
				4401.12*	4401.11*				
					4401.12*				
012.1	Wood in the rough from the main stem and branches	n.a.	1.2	4403.21*	4403.21*	247.4*	1111	0311*	0210
			1.2.C	4403.22*	4403.22*	247.5*		0312*	0220
			1.2.NC	4403.23*	4403.23*	247.9*			
			1.2.NC.T	4403.24*	4403.24*				
				4403.25*	4403.25*				

Summary about classifications



Why does it matter?

Comparing or combining two databases becomes quite difficult when they use different products classifications. To make them comparable, **you have to check the correspondence tables between the different classifications.**



Why classifying?

Classifications provide a **common language in trade** by offering a clear decomposition and definition of all tradable goods at different levels of aggregation, for different purposes. **Their role is crucial in collecting data on international trade.**



Precautions

Amendments allow commercial classifications to include new merchandises and to adapt to market changes, making **the common language evolves through time**. This may lead to some **continuity issues** that classifications must address.

What is the most reliable source we can have on trade?

More especially on quantities and values of commodities

Customs are the most reliable source of data concerning tradable commodities.

They collect at least, for every shipment of a given commodity: **the product code**, **the tonnage**, **the value**, **the origin**, and **the destination** of the merchandise.





Trade value is in *current* US dollars



Free-on-board valuation (FOB)
is used for exports



Cost, insurance, and freight (CIF)
valuation is used for imports

TRADE VALUE

UNITS: FOB VS CIF

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A scenic mountain landscape with a winding road and distant peaks. The image shows a series of rolling hills and mountains under a cloudy sky. A road winds through the foreground, and the background features layers of mountains fading into the distance.

PARTNER COUNTRY FOR IMPORTS

- *Country of purchase:* the country where the seller of the goods resides.

- *Country of consignment:* the last intermediate country from which goods were dispatched to the importing country.

- *Country of shipment:* the country from which goods are shipped.

The background of the slide is a high-quality photograph of a mountainous region. In the foreground, a dark, grassy hillside slopes down towards a winding asphalt road that curves through the valley. The road is illuminated by a warm, golden light, possibly from the setting or rising sun. In the distance, layers of mountain ranges are visible, their peaks softened by atmospheric haze. The sky is filled with soft, white clouds, and the overall color palette is dominated by earthy greens, blues, and warm yellows.

PARTNER COUNTRY FOR IMPORTS

Country of origin: 2 rules of origin

- (a) Rule of goods “wholly produced” in a given country;
- (b) Rule of “substantial transformation”, where two or more countries have taken part in the production of the goods.



PARTNER COUNTRY FOR IMPORTS

- *Country of origin: 2 rules of origin*
 - (a) Rule of goods “wholly produced” in a given country;
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PARTNER COUNTRY FOR EXPORTS

Country of sale: the country where the purchaser of the goods resides

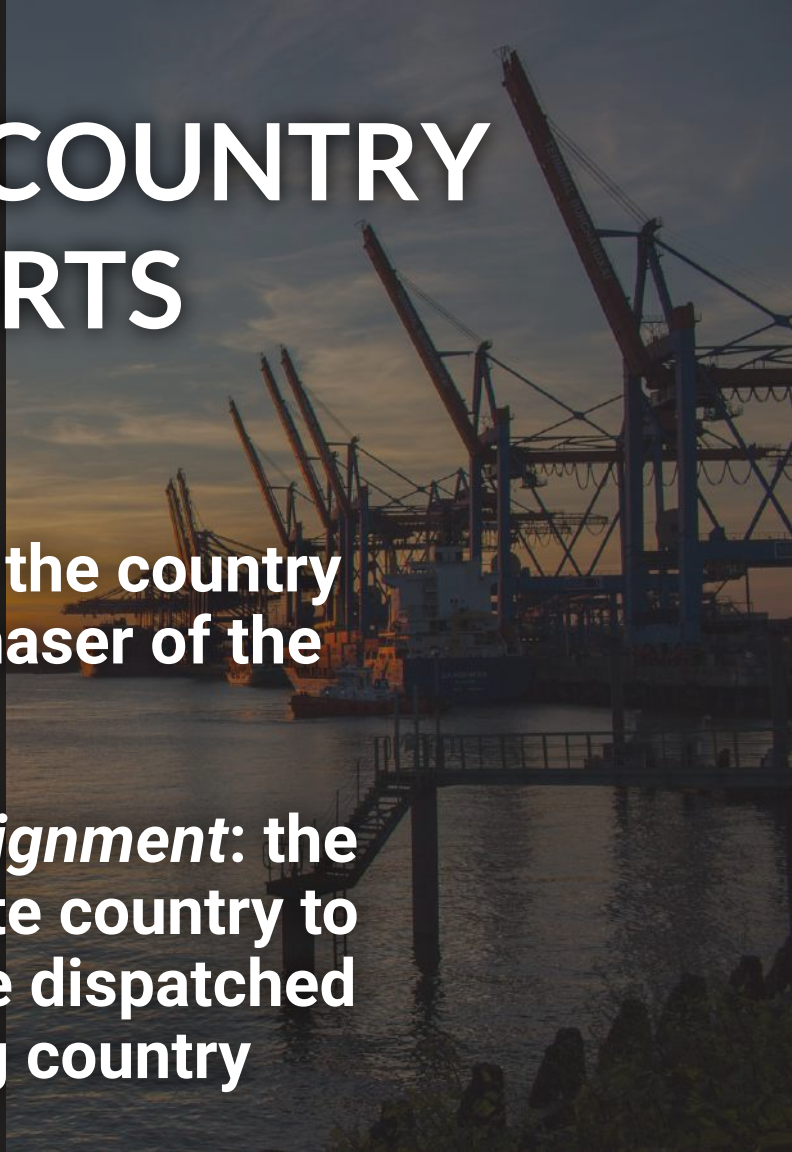
Country of consignment: the first intermediate country to which goods are dispatched by the exporting country

Country of shipment: the country to which goods are shipped

Country of last known destination: the last country to which goods are to be delivered

Country of consumption: the country in which the goods are expected to be used

PARTNER COUNTRY FOR EXPORTS



- ***Country of sale:*** the country where the purchaser of the goods resides

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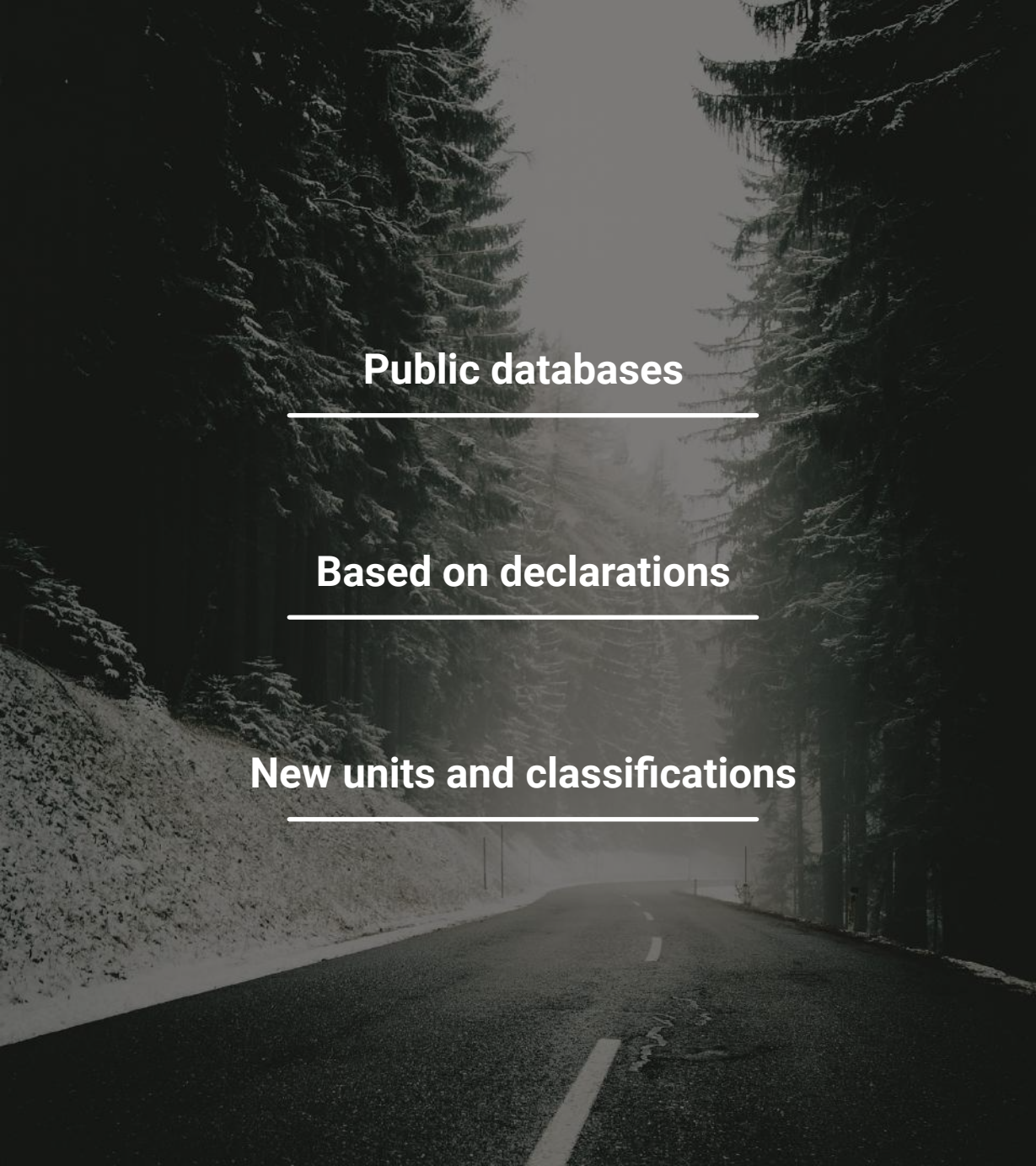
- ***Country of consumption:*** the country in which the goods are expected to be used



WOOD PRODUCTS TRACEABILITY IS IMPERFECT

We know little about the journey
of a tradable wood product

Bonus: Some countries play the role of
commercial platform, blurring the trace of
wood products.



Public databases

Based on declarations

New units and classifications

INTERNATIONAL TRADE DATABASES

UN Comtrade and FAOSTAT databases

These are open databases.

They collect reports from all member countries through the Joint Forest Sector Questionnaire (JFSQ).

Each country has a national correspondent in charge of providing the data for the JFSQ.

The data must have certain units and follow a given classification (may require data conversion).



FAOSTAT

	Data	Selected Indicators	Compare Data	Definitions and Standards	FAQ	Search an Indicator or Commodity
--	------	---------------------	--------------	---------------------------	-----	----------------------------------

Food and agriculture data

FAOSTAT provides free access to food and agriculture data for over 245 countries and territories and covers all FAO regional groupings from 1961 to the most recent year available.

Explore Data



New to this site ? [Start here](#)

Free access to detailed global trade data

Experience the new Quick Search

Show Annual ▾ Exports ▾ of TOTAL - Total of all HS commo... ▾ from All ▾
to World ▾ in the year 2024 ▾

[Preview](#)

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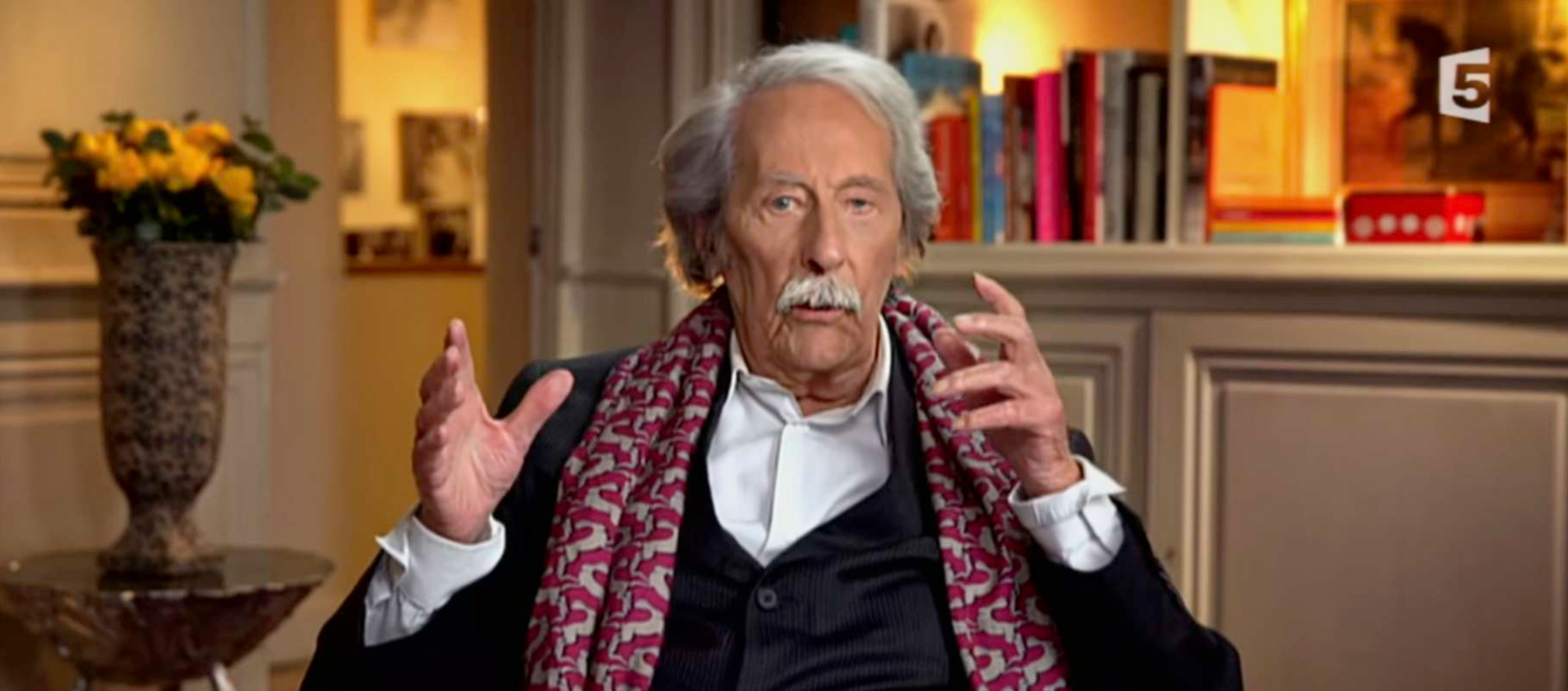
[Data Availability](#)

[UN Comtrade Analytics](#)

[Metadata Survey](#)

[User Guide](#)

UN Comtrade Database



“Mais la fourmi se tripote les funicules...”

Jean Rochefort, Les boloss des belles lettres, *Les Fables de La Fontaine*

- Some databases are based on declared values that may be incorrect.
- When using a database, you should take care of the units used and consider with precaution values in other units that results from conversion.
- Bonus: One tricky point of using international trade data is the management of null values.

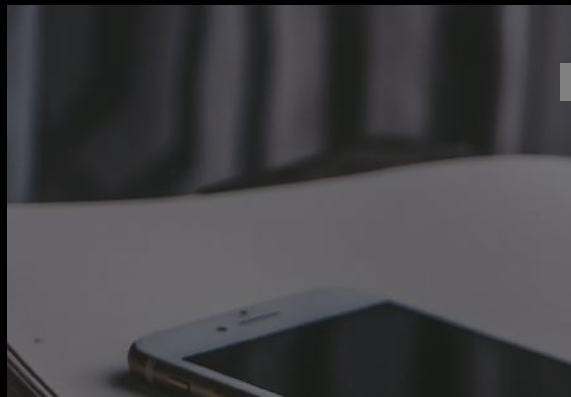


What may be the limitations of those databases?

Or why should we be careful while making the data speak?

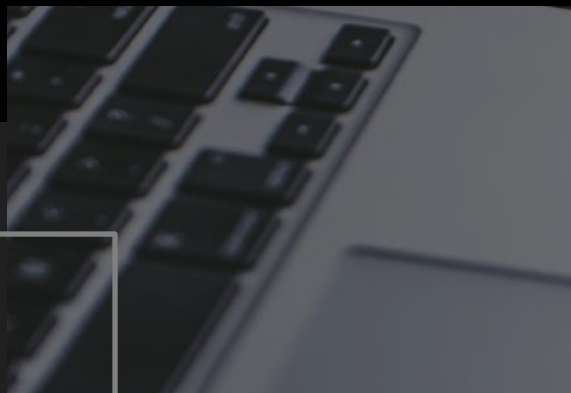
- Correspondence between different classifications used by different databases may be challenging to deal with.
- Traceability is not guaranteed.
- Amendments that aim to add corrections to classifications or a new data collect may, lead to some breaks in statistical series.
- Some measures contain uncertainties that are sometimes high and may misrepresent reality.

- Some databases are based on declared values that may be incorrect.
- When using a database, you should take care of the units used and consider with precaution values in other units that results from



■ What may be the limitations of those databases?

Be cautious when using trade data.



classifications used by different databases may be challenging to deal with.

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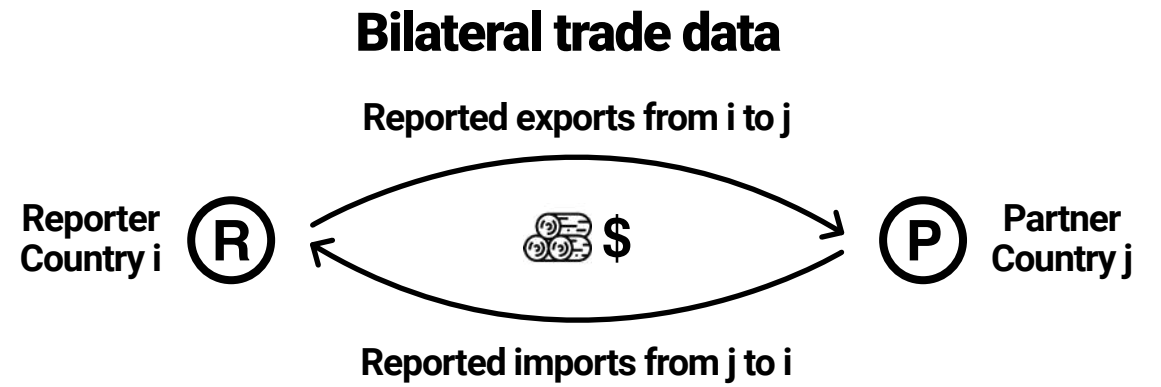
04 Structure and recent dynamics of the international trade of roundwood.



DATA USED

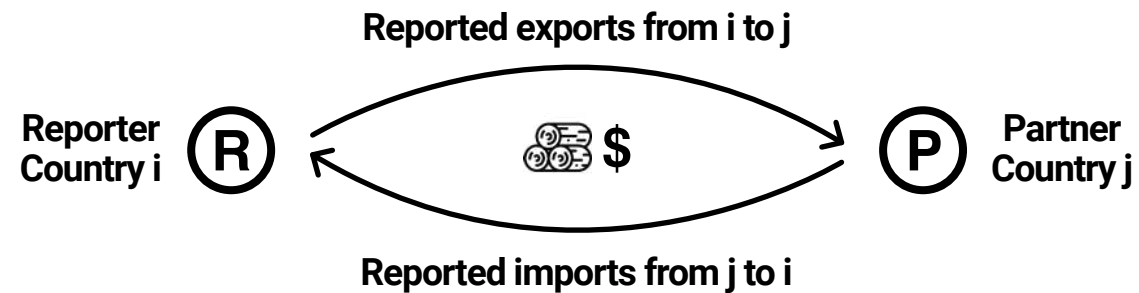
We collect export and import data from the UN Comtrade database from 1996 to 2023 corresponding to FAO product 012 “Wood in the rough other than wood fuel”.

FROM TRADE DATA TO TRADE NETWORKS

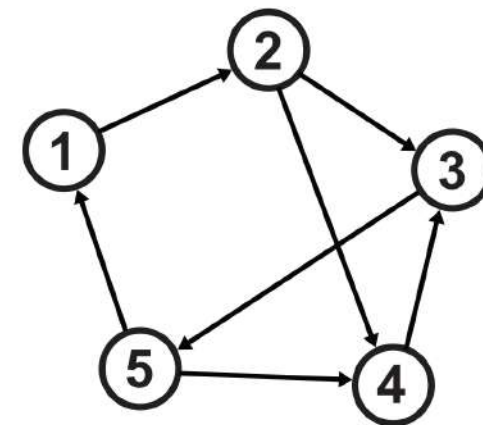


FROM TRADE DATA TO TRADE NETWORKS

Bilateral trade data



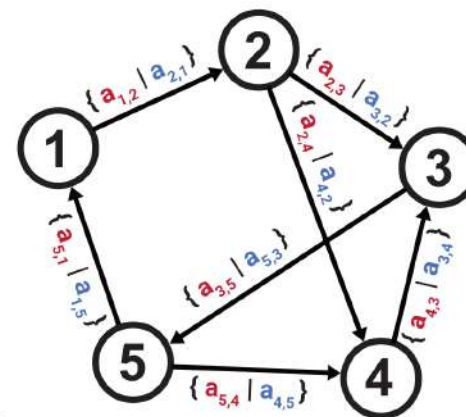
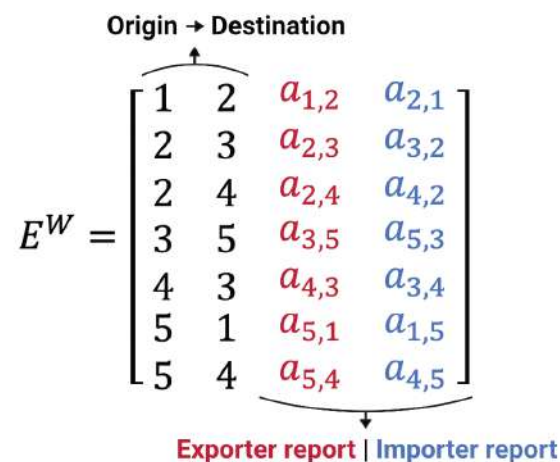
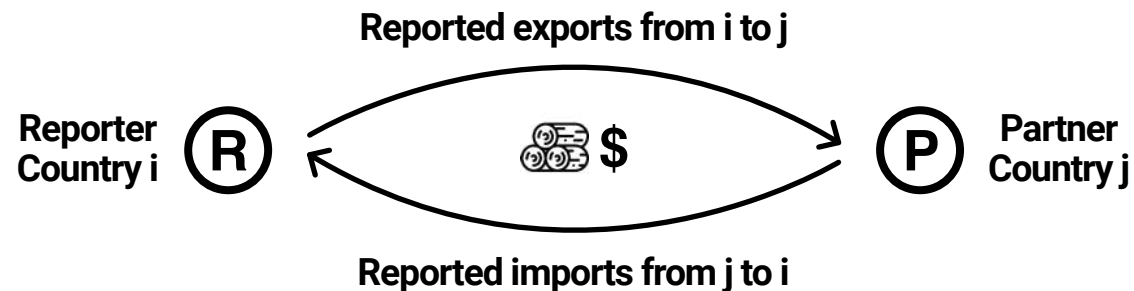
Origin → Destination

$$E^U = \begin{bmatrix} 1 & 2 \\ 2 & 3 \\ 2 & 4 \\ 3 & 5 \\ 4 & 3 \\ 5 & 1 \\ 5 & 4 \end{bmatrix}$$


Unweighted and directed Networks

FROM TRADE DATA TO TRADE NETWORKS

Bilateral trade data



Weighted and directed Networks



World exports of more of \$500 billion or more of industrial roundwood in 2016



**“Mais tout ce bordel dans un brouillard de chicha, on voit que dalle
m**** ! Olivier de Carglass, fait ton taffe non ???”**

Jean Rochefort, Les boloss des belles lettres, Docteur Jekyll et Mr Hyde

METRICS TO ASSESS NETWORK STRUCTURE

NETWORK COMPOSITION

Number of nodes: Nb. of countries involved in trade

Number of pure exporters: Nb. of countries that only export roundwood

Number of pure importers: Nb. of countries that only import roundwood

Number of mixed countries: Nb. of countries that both export and import roundwood

Country profiles: Trade behaviour of countries in relation to exports and imports

NETWORK CONNECTIVITY

Mean number of connections per node: Average nb. of trading partners per country; indicator of the overall connectedness.

Variance in the number of connections per node: Variation in the nb. of trading partners.

Skewness in the number of connections per node: Proportion of low to highly connected countries in the network.

Kurtosis in the number of connections per node: Scarcity or abundance of countries that diverge from the mean connectivity.

MARKET CONCENTRATION

Herfindahl-Hirschman index: Market concentration in the trade of roundwood.

Country contributions to trade value: Share of total value that 'flows' through a given country.

METRICS TO ASSESS NETWORK STRUCTURE

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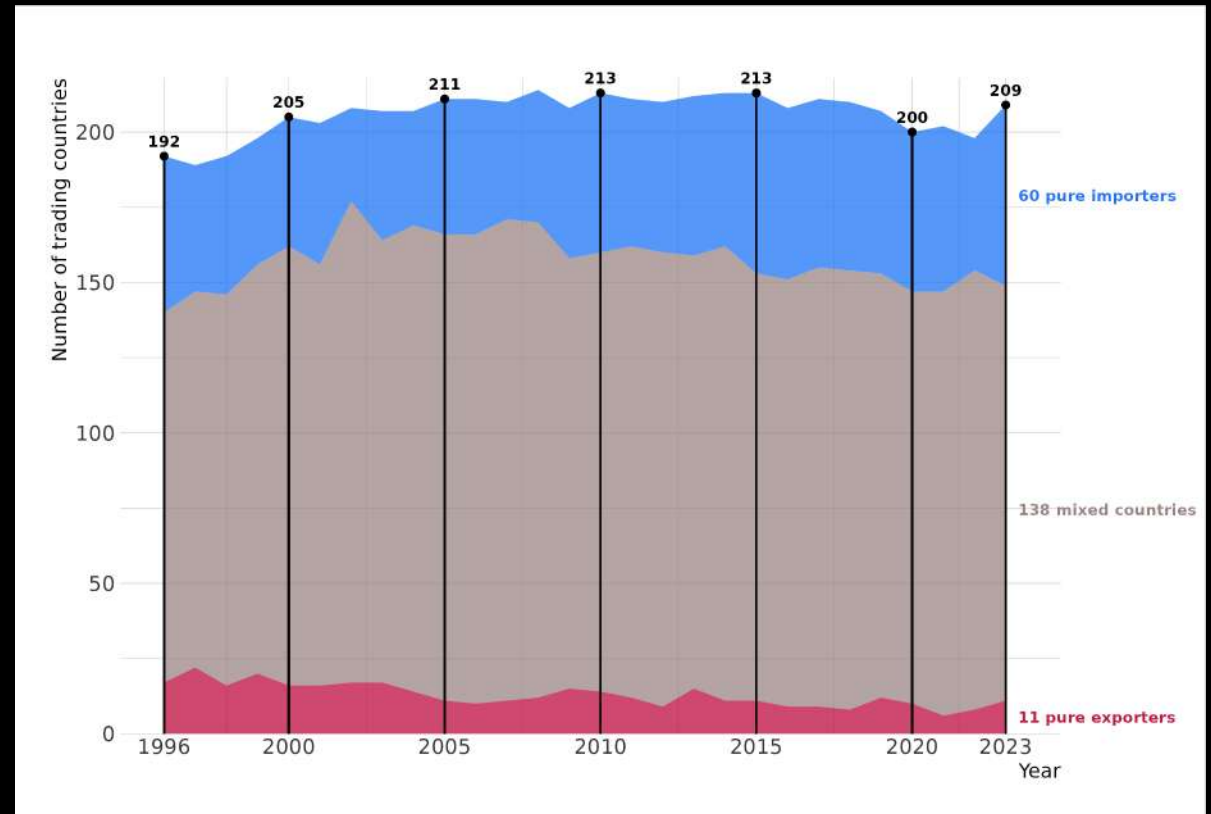


Figure. Number of trading countries in total and per group: pure exporters (red), pure importers (blue), mixed countries (grey); for each year of trade.

The number of countries involved in the roundwood trade fluctuated slightly.

- ▶ Min: 189
- ▶ Max: 214
- ▶ Mean: 206

Trade network composition

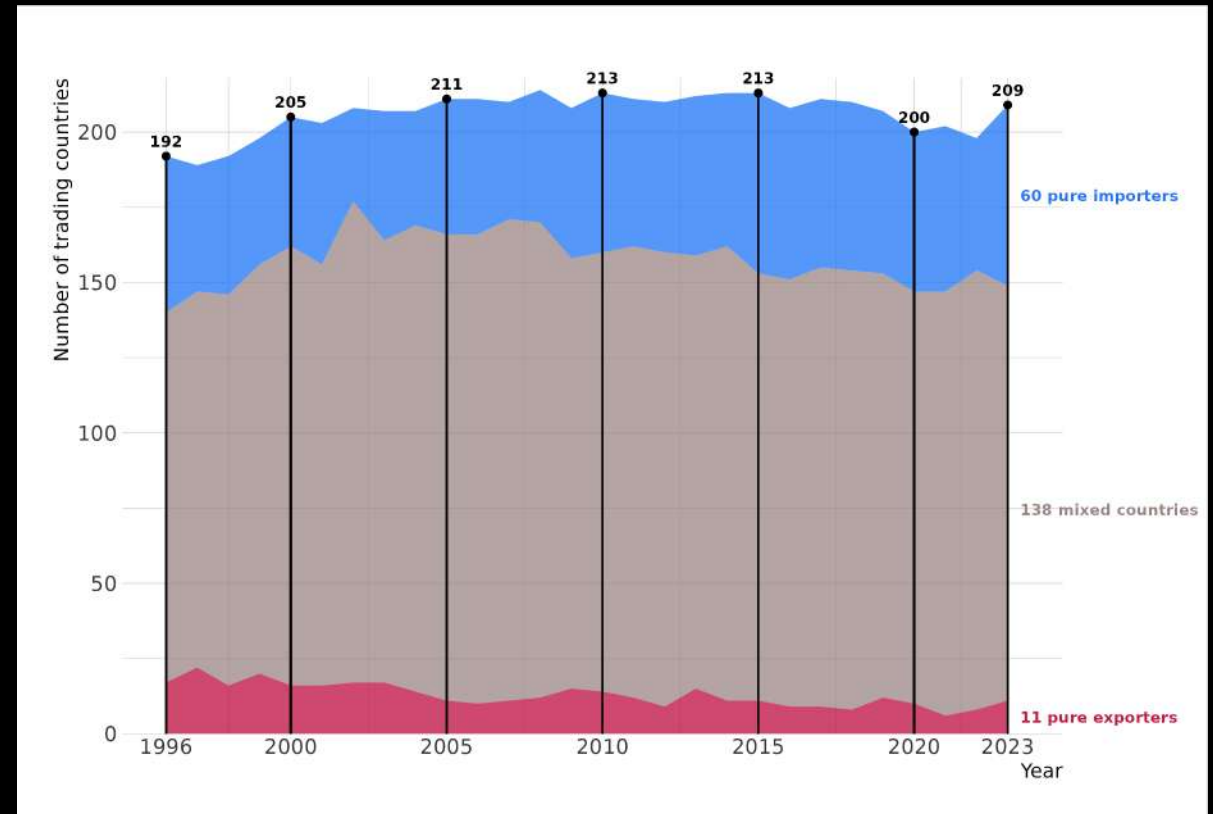


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- ▶ ↓ from 17 to 11
- ▶ 2023 ~ 5.3% of traders

Nb. of pure importers:

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- ▶ 2007-2023: ↑ to 60
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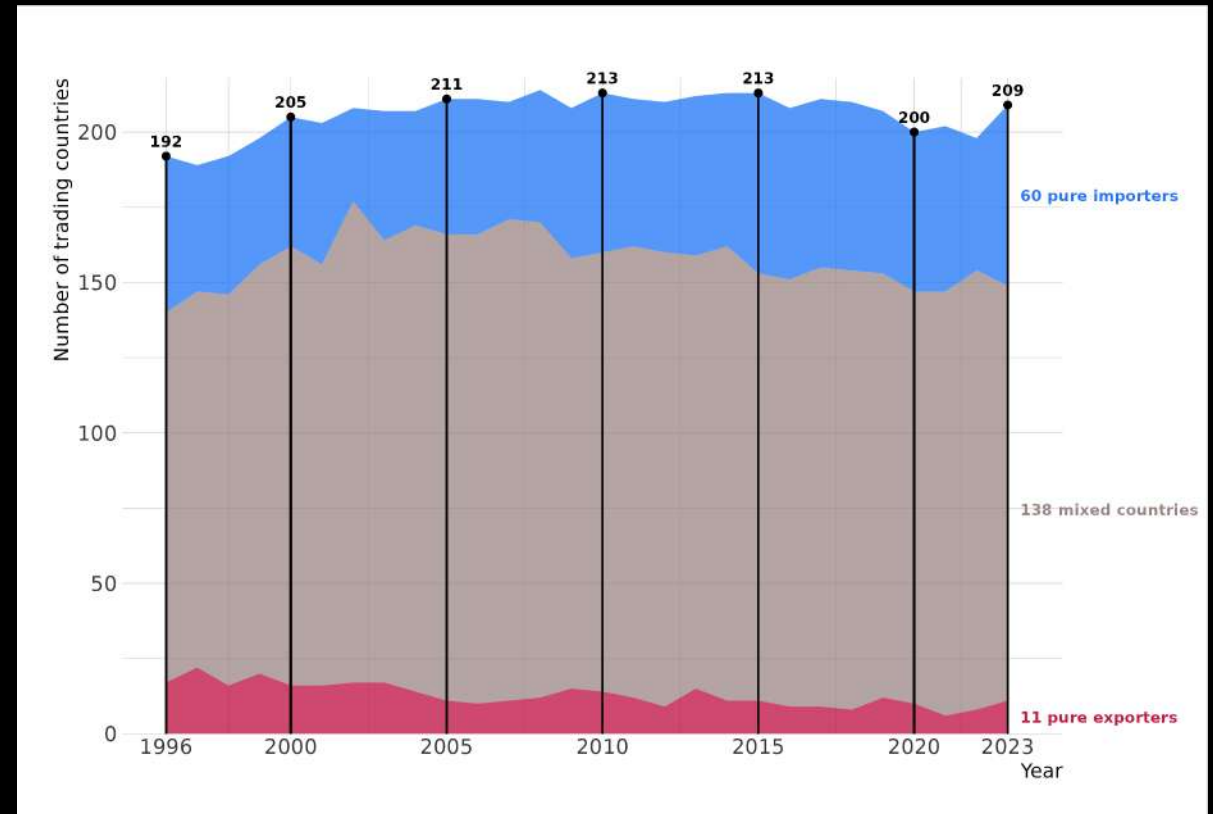


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2023: 66% of the traders are mixed countries
▶ Openness to trade

Short terms drops in the number of pure exporters, pure importers, and mixed countries

Trade network composition

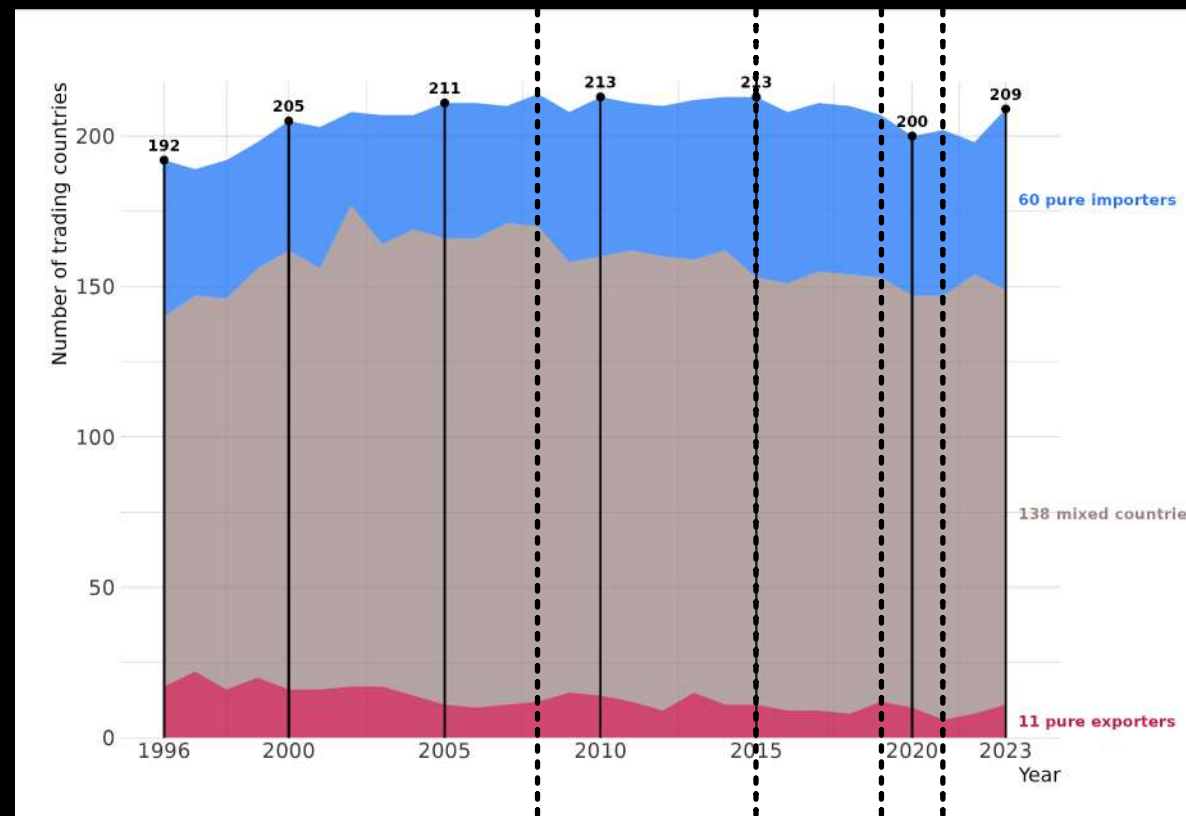


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NETWORK CONNECTIVITY

Mean number of connections per

MARKET CONCENTRATION

Herfindahl-Hirschman index:

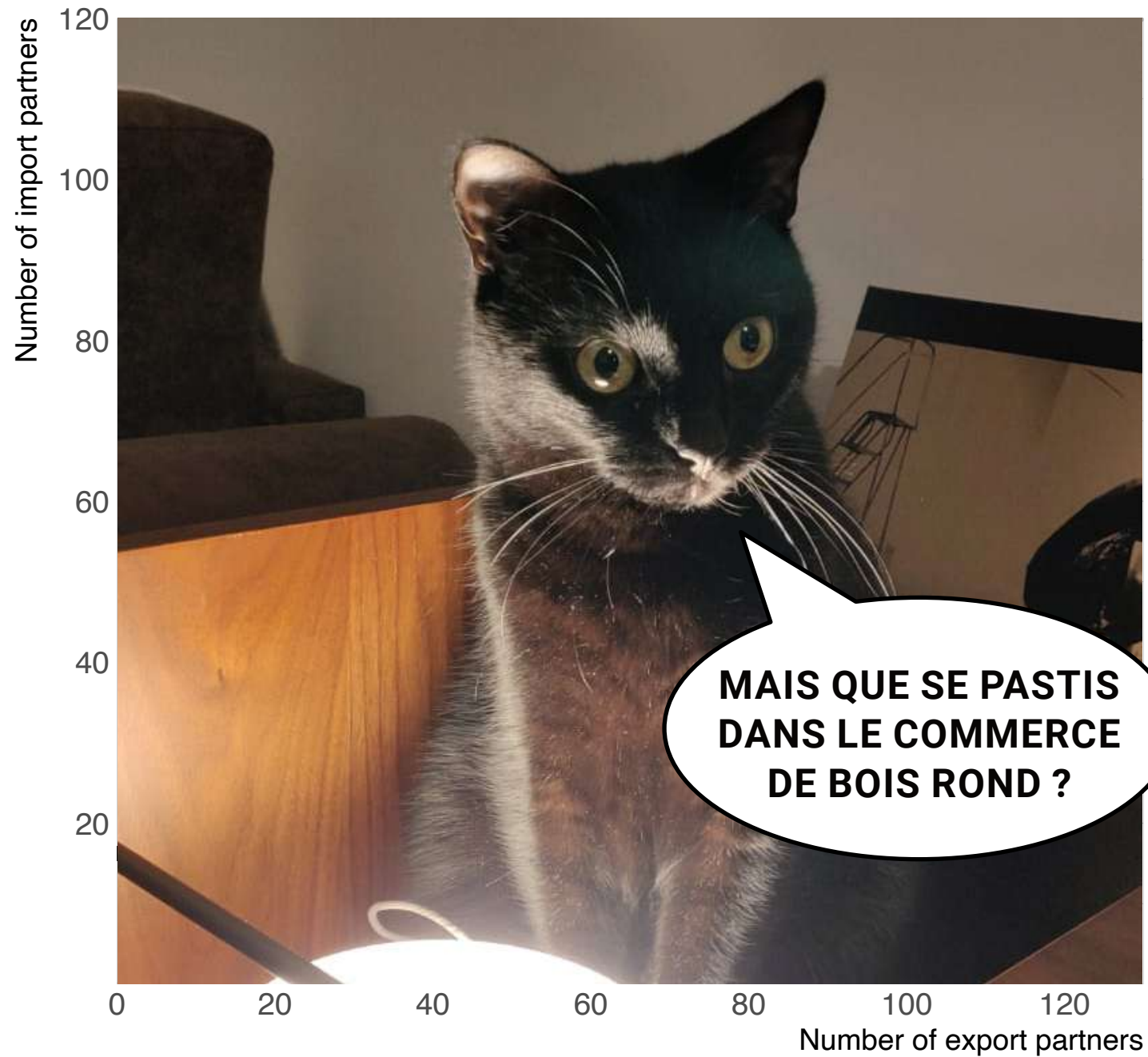
Countries that contributed to at least 1% of the total export or import value in 2020 = 31 countries ~ 15.5% of all trading countries

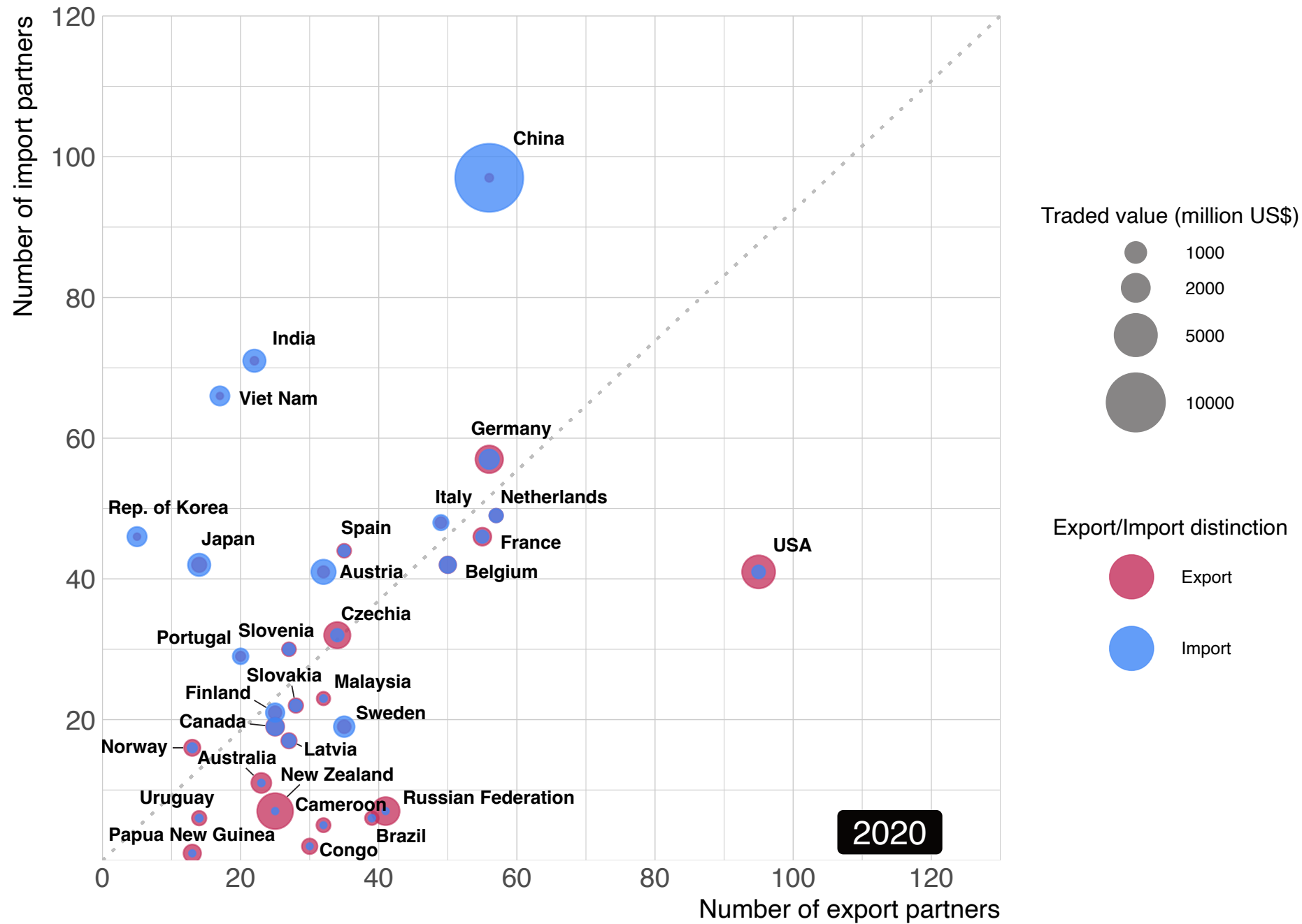
Number of mixed countries: Nb. of countries that both export and import roundwood

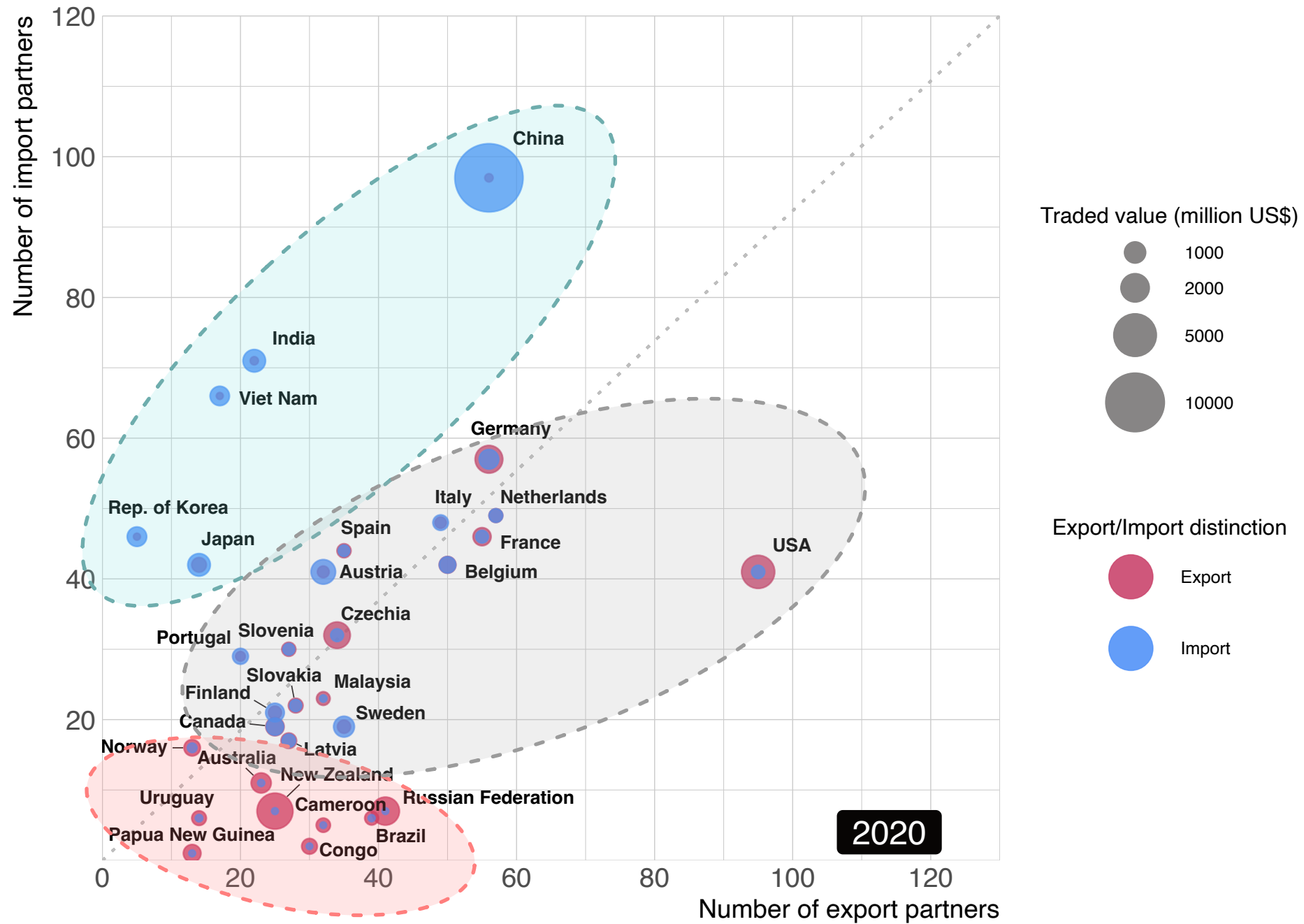
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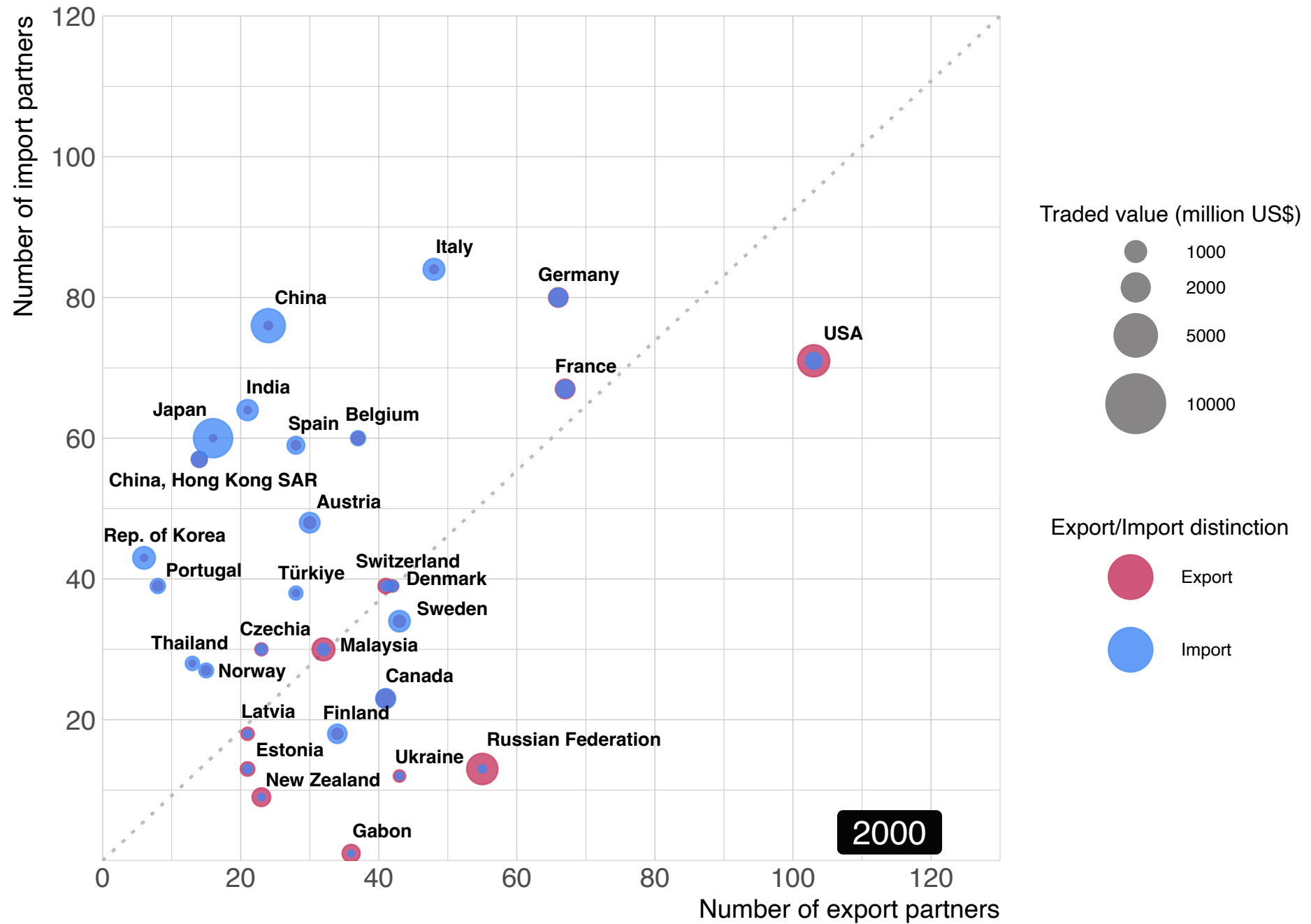
of low to highly connected countries in the network.

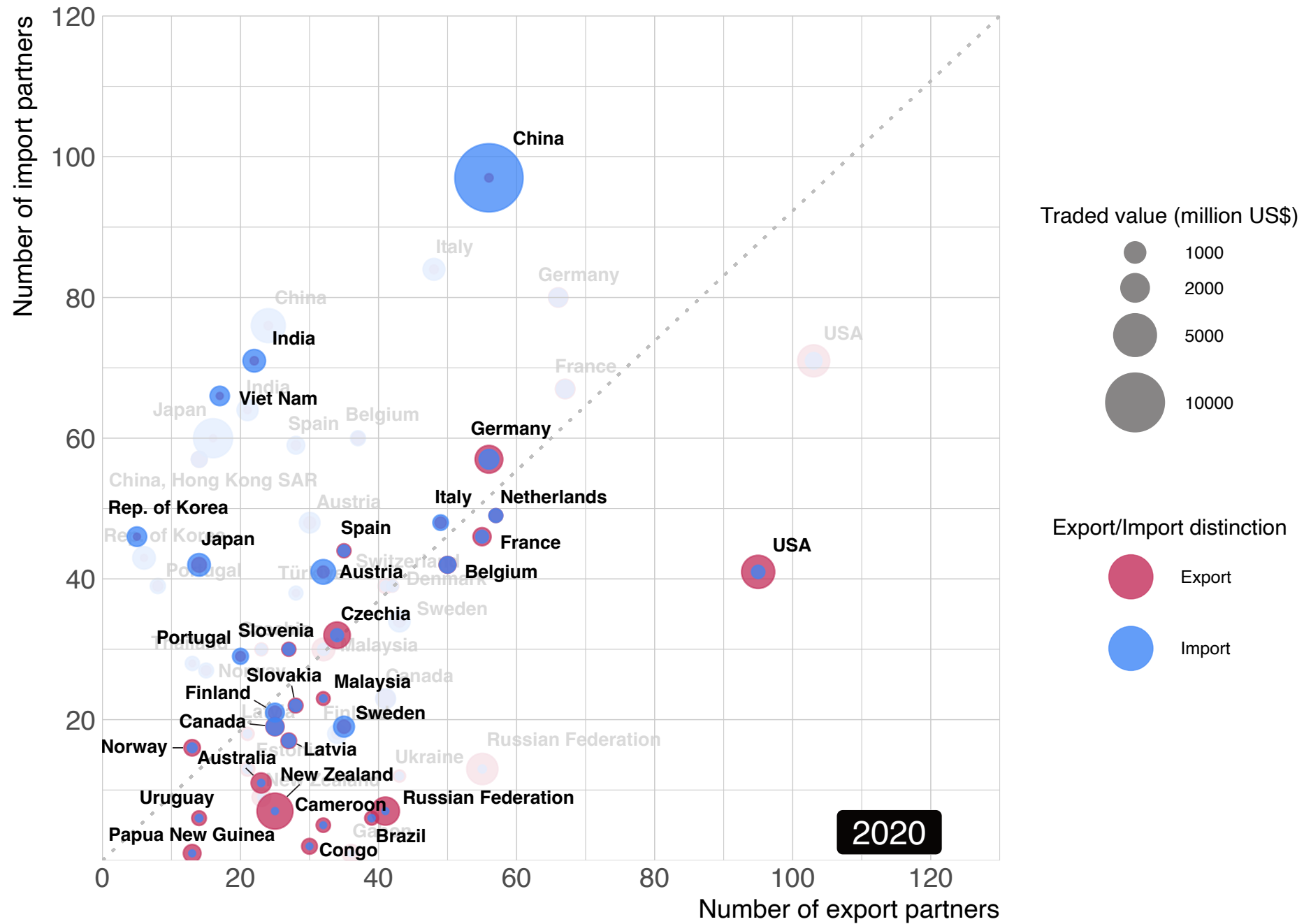
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NETWORK CONNECTIVITY

- ▶ Increase in the mean connectivity during the first half of the study period before decreasing
- ▶ Exporters were, on average, 23% more connected than importers
- ▶ Short-term increases and decreases in mean connectivity were observed from year to year, with some shared by both exporters and importers

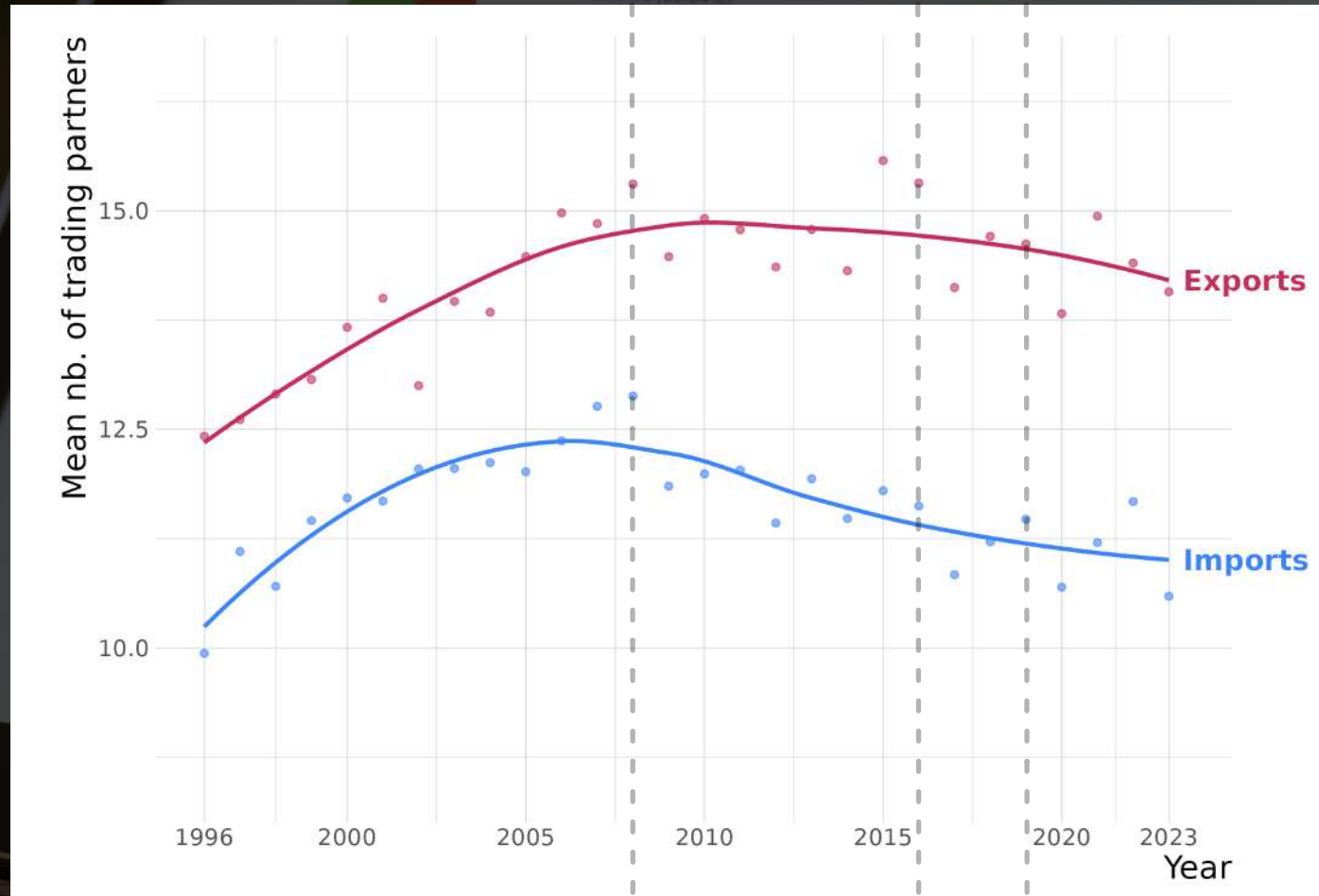


Figure. Mean number of connections per node. Means for exports are in red, means for imports are in blue.

NETWORK CONNECTIVITY

- ▶ High variance in connectivity for exporters and importers
- ▶ Exporters and importers comprise countries with a significantly lower number of connections than average, and others with a significantly higher number of connections than average
- ▶ Still short-term increases and decreases

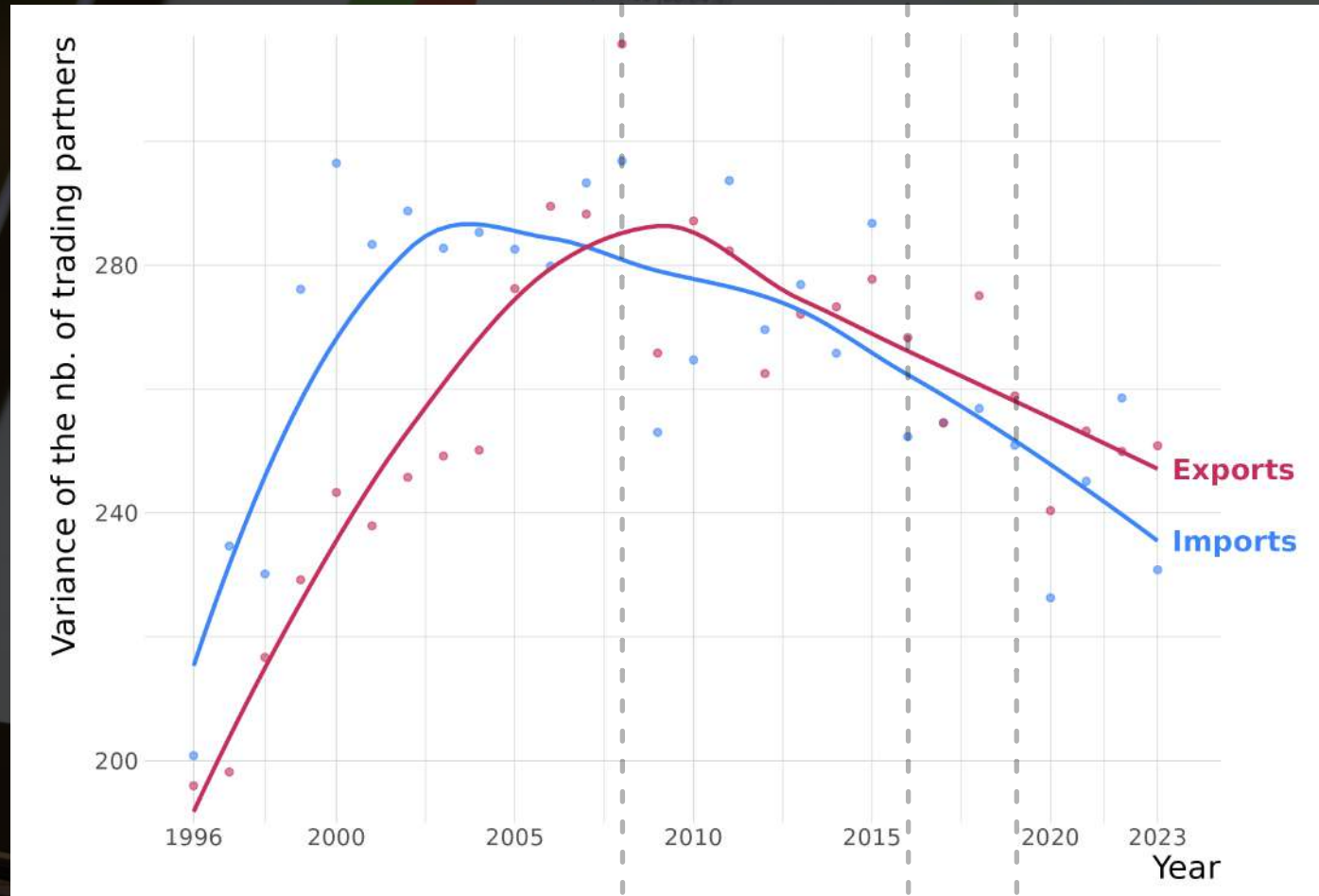


Figure. Variance in the number of connections per node. Variances for exports are in red, variances for imports are in blue.

NETWORK CONNECTIVITY

- ▶ Skewness is always positive for both exporters and importers: greater proportion of countries with low to high connectivity
- ▶ Since 2010, skewness higher for importers than for exporters: greater proportion of poorly connected countries among importers than among exporters

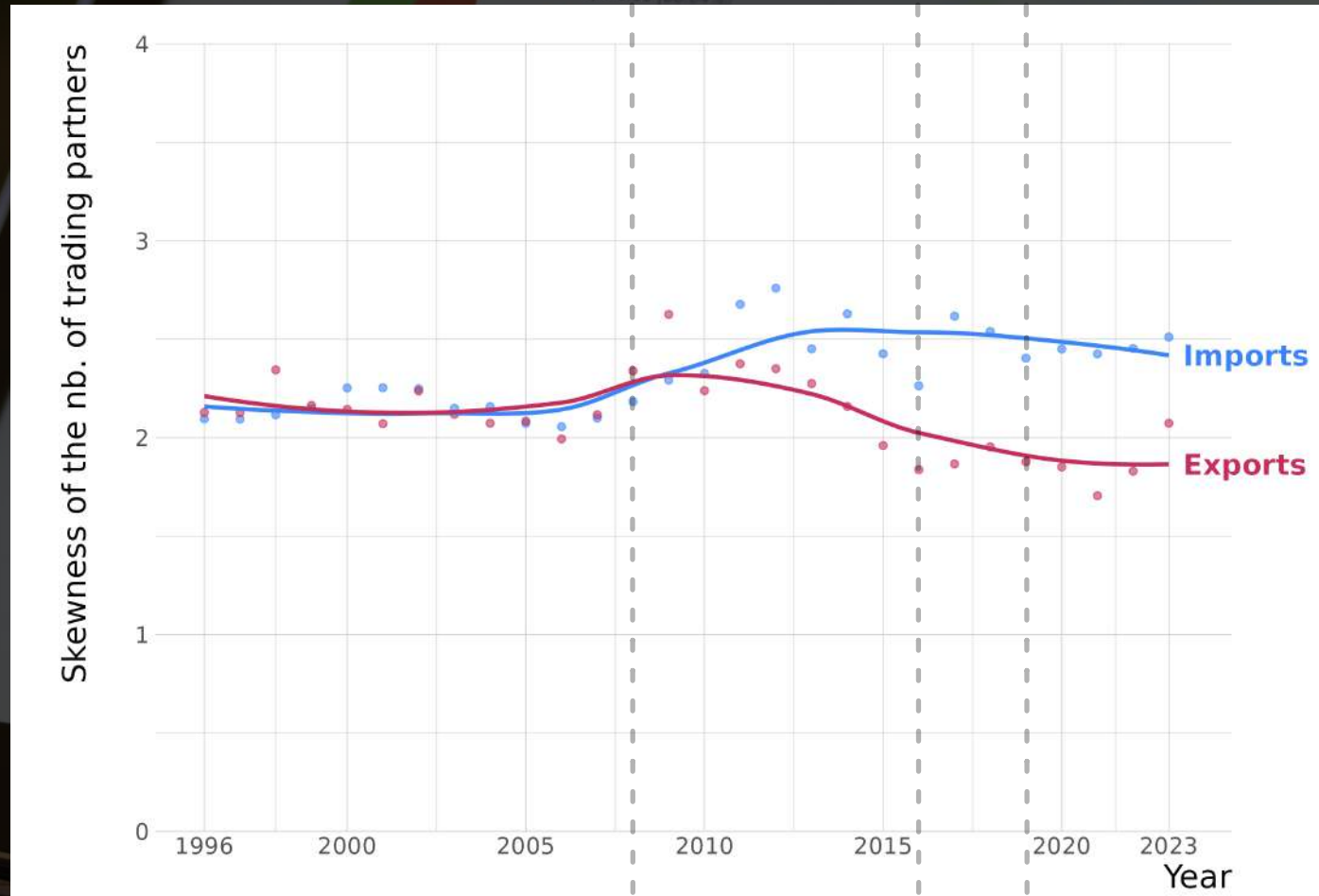


Figure. Skewness in the number of connections per node. Skewness for exports is in red, skewness for imports is in blue.

NETWORK CONNECTIVITY

- ▶ Kurtosis positive for both exporters and importers: countries whose connectivity diverges from the mean connectivity are rarer than those whose connectivity is close to the mean
- ▶ Turning point after 2014: kurtosis recently became higher for importers than for exporters.

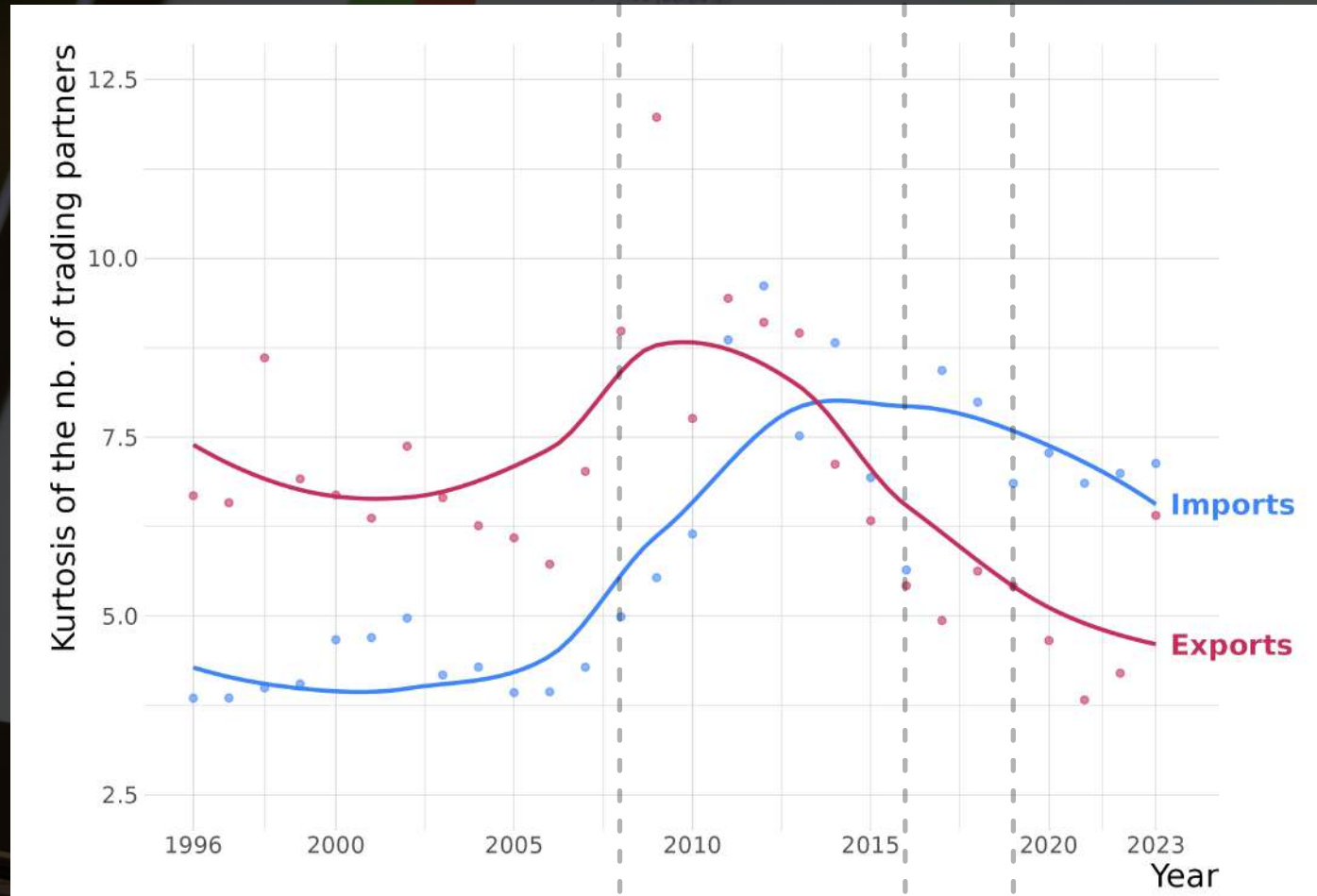


Figure. Kurtosis in the number of connections per node. Kurtosis for exports is in red, kurtosis for imports is in blue.

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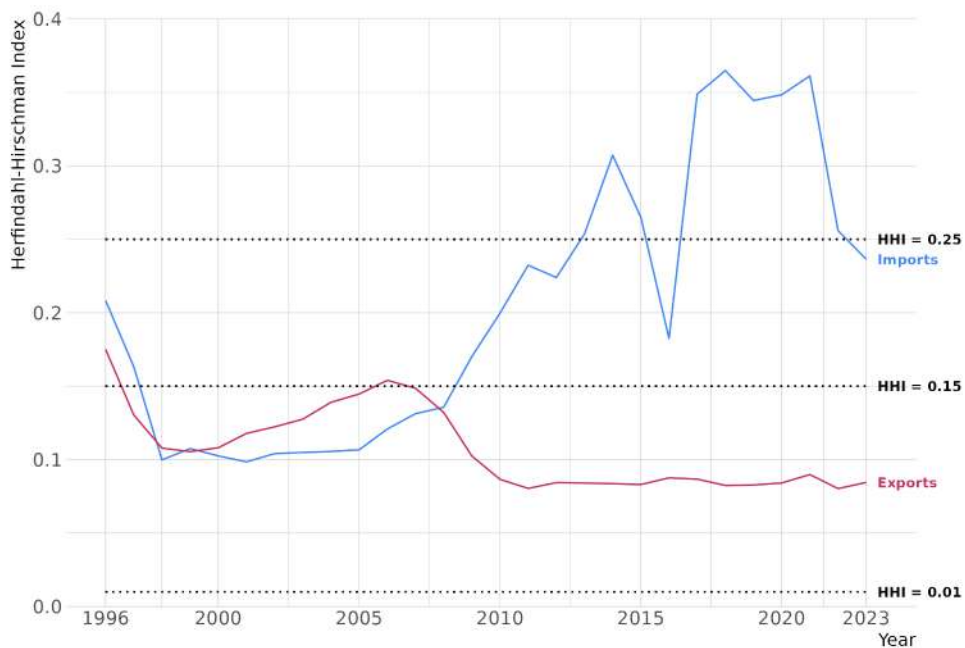
Country contributions to trade value: Share of total value that 'flows' through a given country.



HERFINDAHL- HIRSCHMAN INDEX



HOP HOP HOP, TU
CROIS QUOI LÀ ? QUE
T'ES CONCENTRÉ(E)
COMME LE MARCHÉ ?

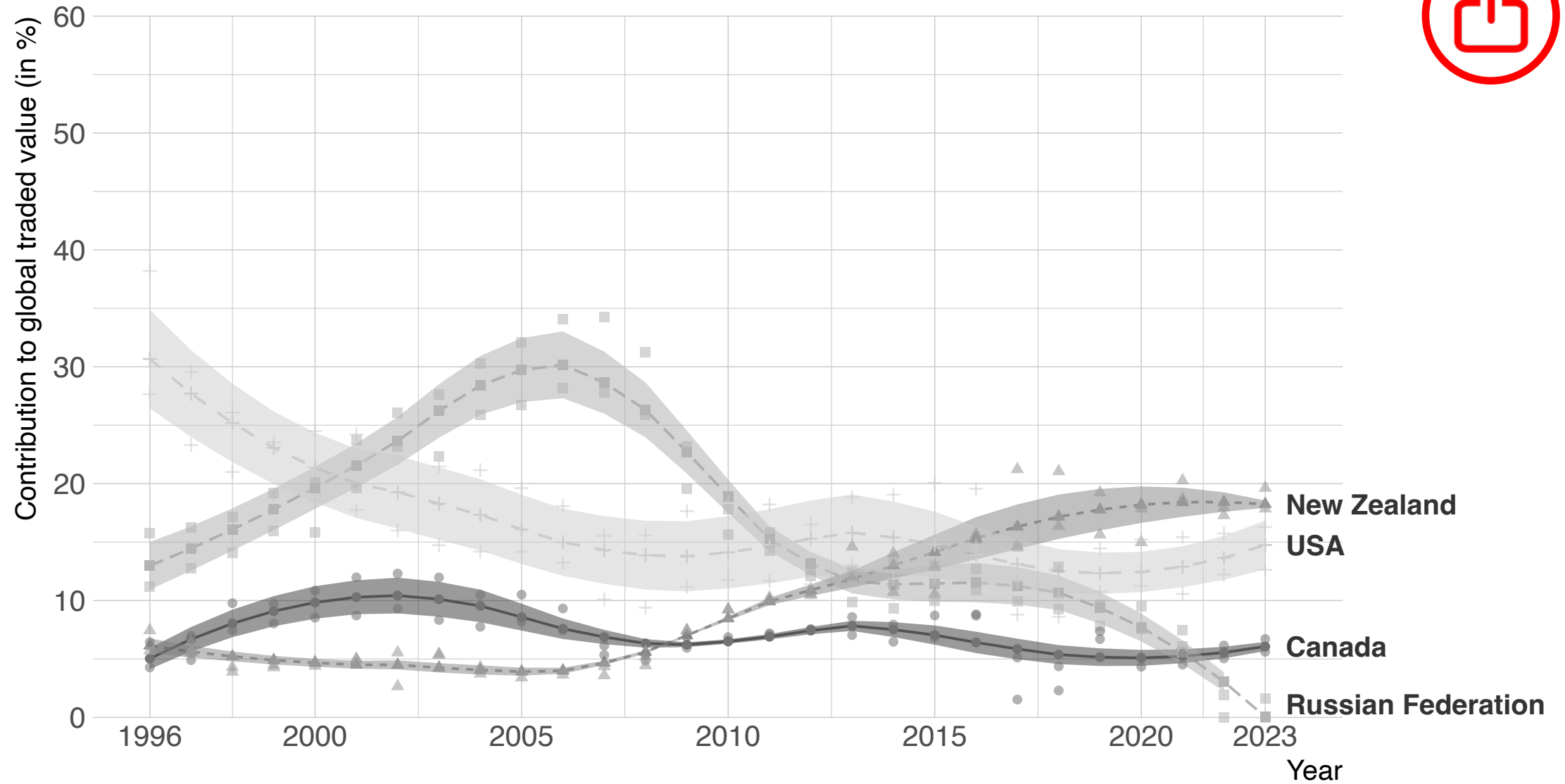


HERFINDAHL- HIRSCHMAN INDEX

Initial fall of HHI for exports and imports: rapid shift from moderate to low market concentration in roundwood trade

Rise then fall of market concentration for exports.

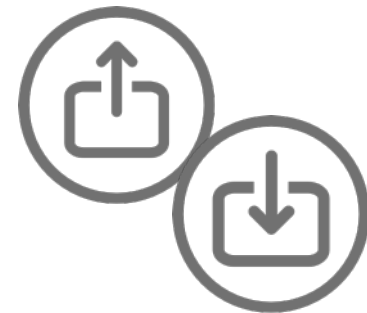
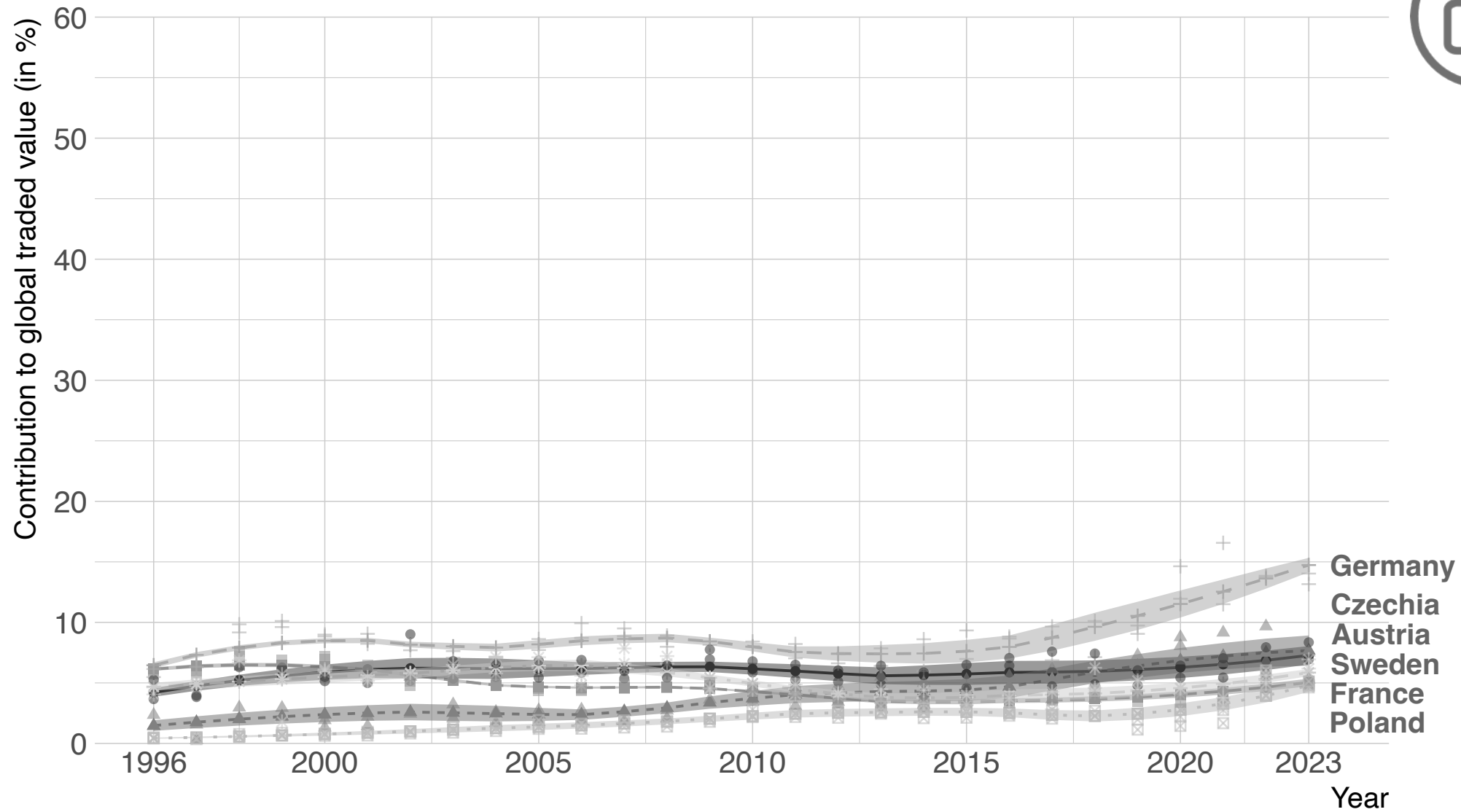
Rising (and falling ?) concentration for imports: highly concentrated market.



La Russie étend les restrictions à l'exportation de bois d'œuvre

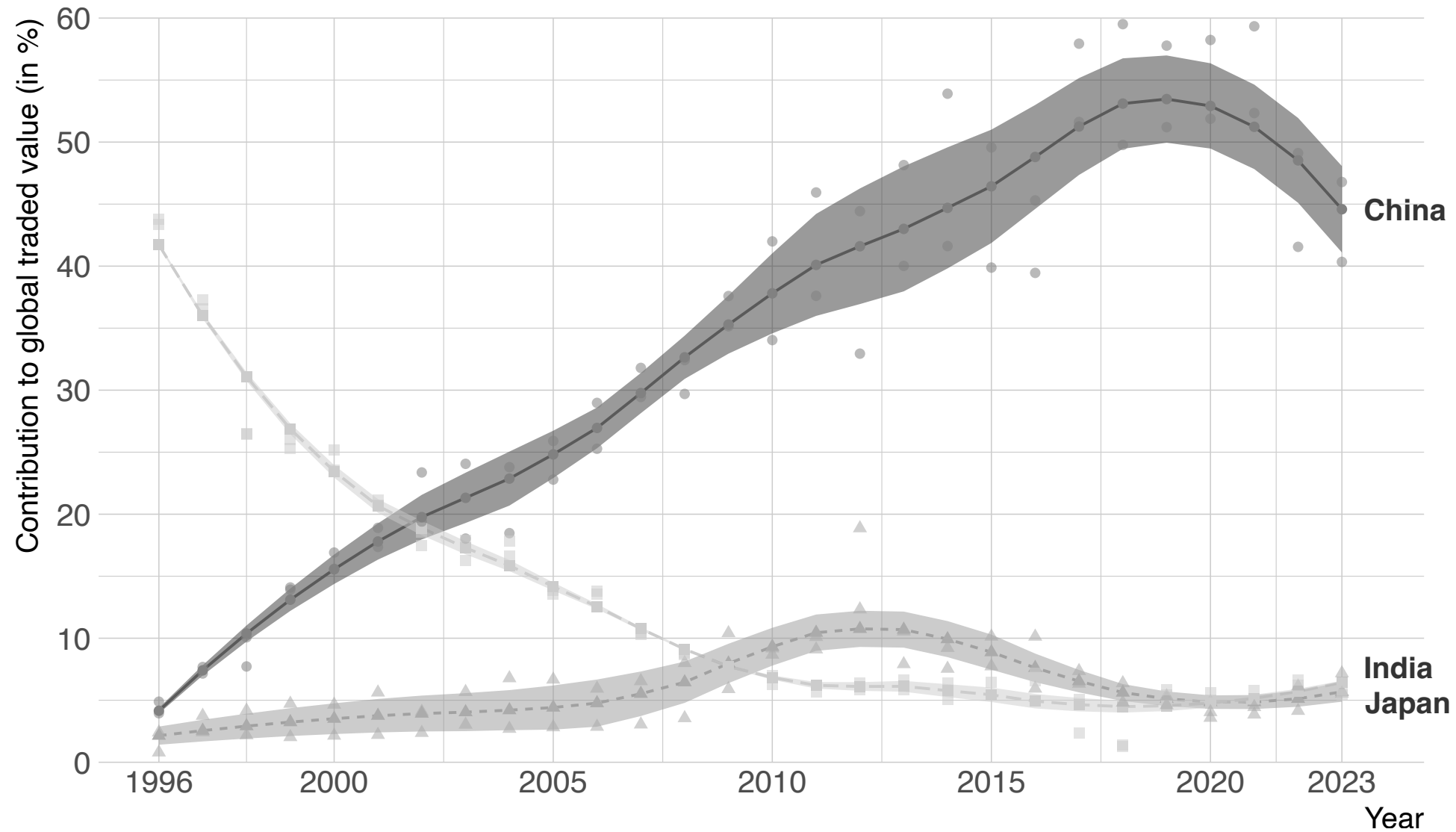
Actualité 14.01.2022

Selon un communiqué de l'agence de presse russe Tass du 2 janvier, le gouvernement russe a confirmé les mesures d'évitement de l'export de bois non transformé qu'il avait annoncées. Les taxes à l'export, déjà en vigueur depuis juin 2021, sont augmentées dans le pays du 2 janvier au 31 décembre 2022 pour les bois dont le taux d'humidité est supérieur à 22% et dont l'épaisseur et la largeur sont supérieures à 10 cm. Une décision visant à empêcher l'exportation de bois brut déguisé en bois d'œuvre.

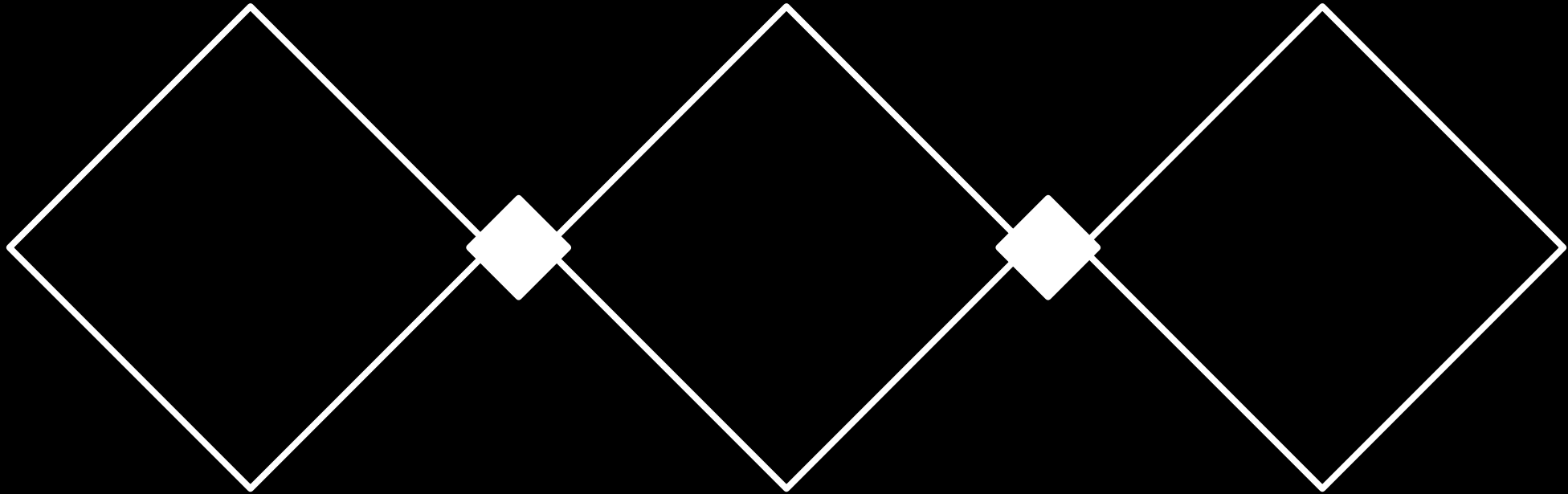




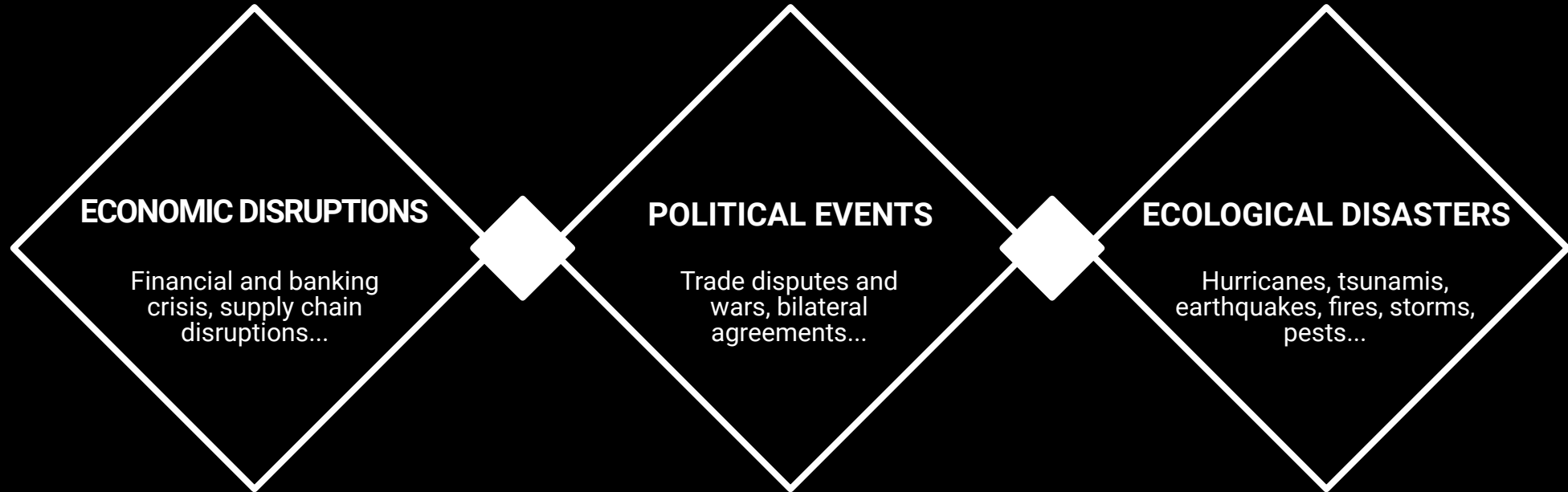
**DO I HAVE YOUR
ATTENTION?**
**eyes of judgement*



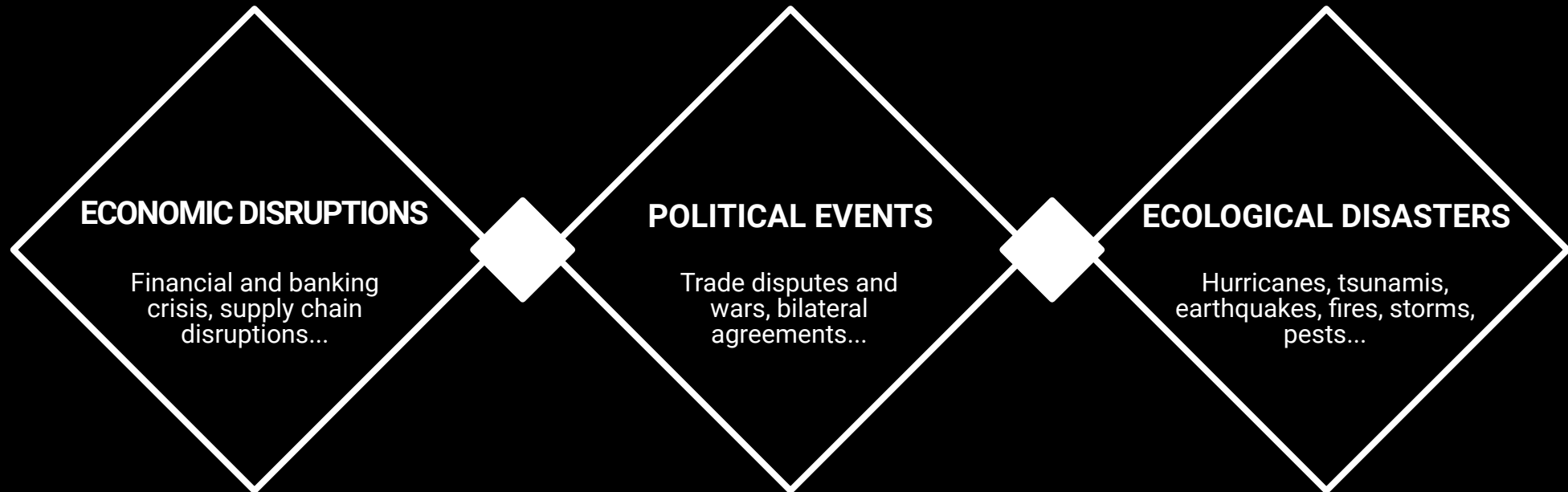
THREE BROAD CATEGORIES OF EVENTS TO EXPLAIN SHORT-TERM VARIATION



THREE BROAD CATEGORIES OF EVENTS TO EXPLAIN SHORT-TERM VARIATION



THREE BROAD CATEGORIES OF EVENTS TO EXPLAIN SHORT-TERM VARIATION



BUT, THE NETWORK SEEMS TO RECOVER THE YEAR AFTER

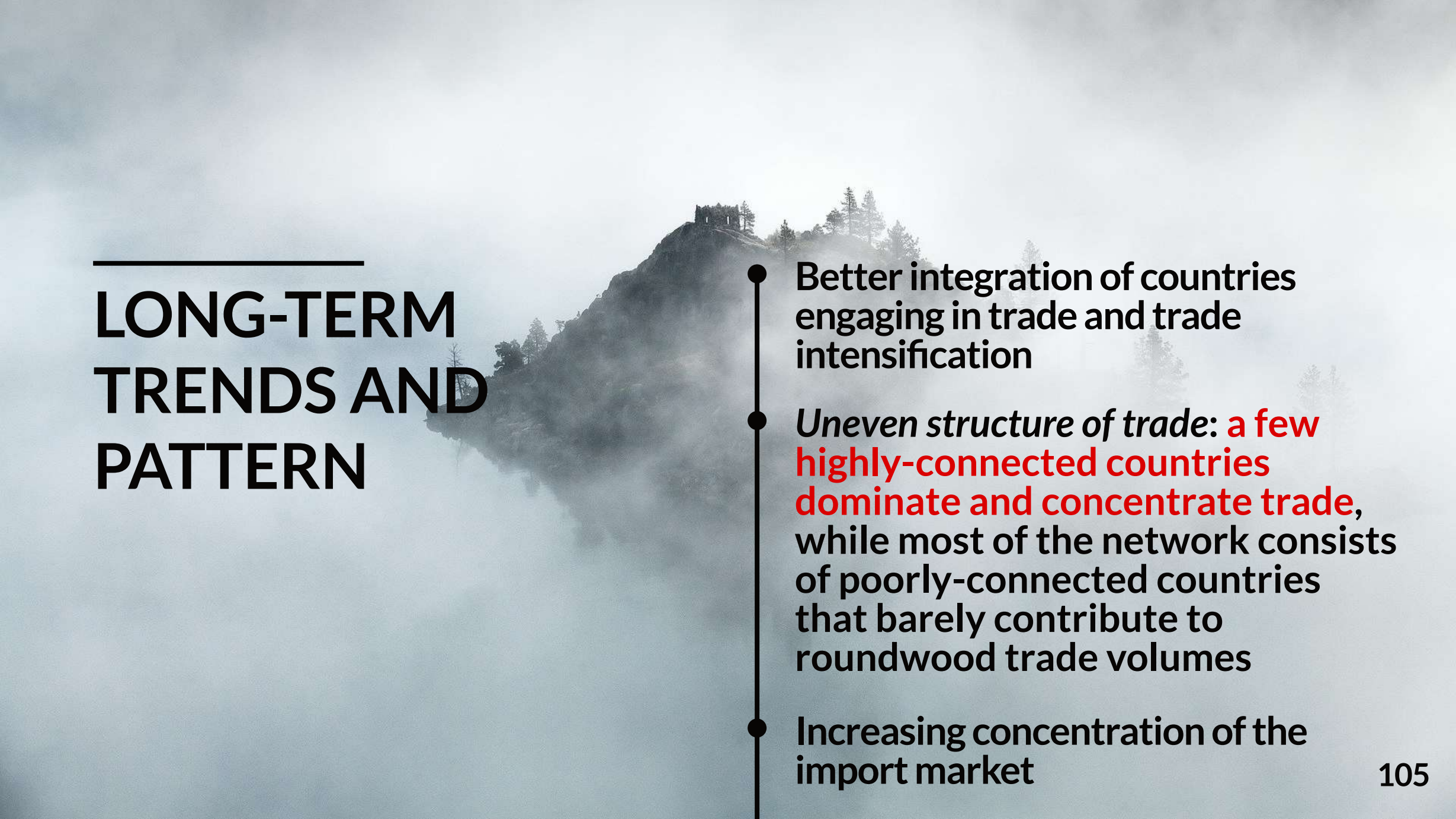
THREE BROAD CATEGORIES OF EVENTS TO
EXPLAIN SHORT-TERM VARIATION



THE TRADE NETWORK IS **RESILIENT** TO
EXOGENOUS SHOCKS AND RATHER FOLLOW
LONG-TERM TRENDS



BUT, THE NETWORK SEEMS TO RECOVER THE YEAR AFTER



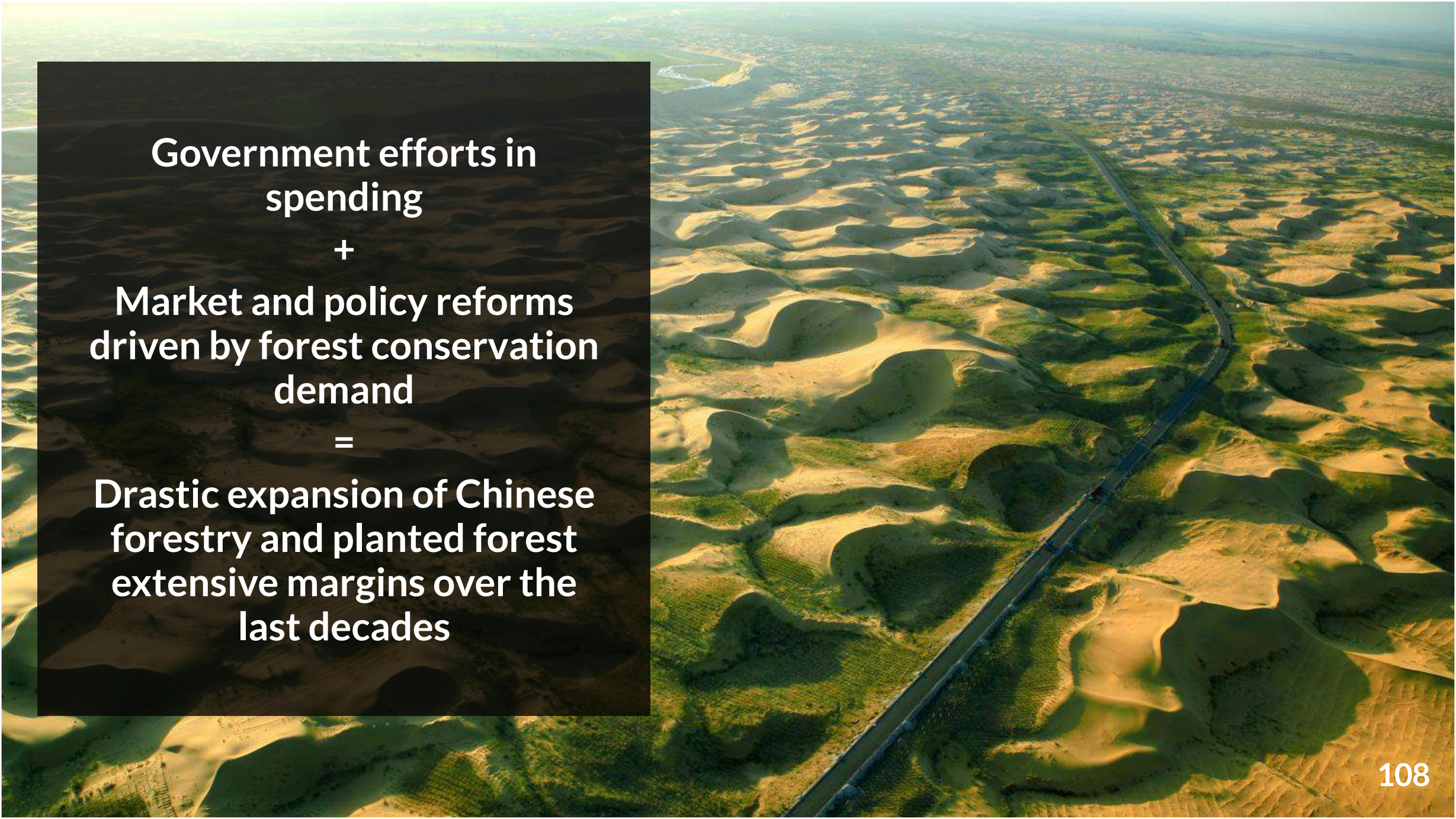
LONG-TERM TRENDS AND PATTERN

- Better integration of countries engaging in trade and trade intensification
- *Uneven structure of trade: a few highly-connected countries dominate and concentrate trade,* while most of the network consists of poorly-connected countries that barely contribute to roundwood trade volumes
- Increasing concentration of the import market

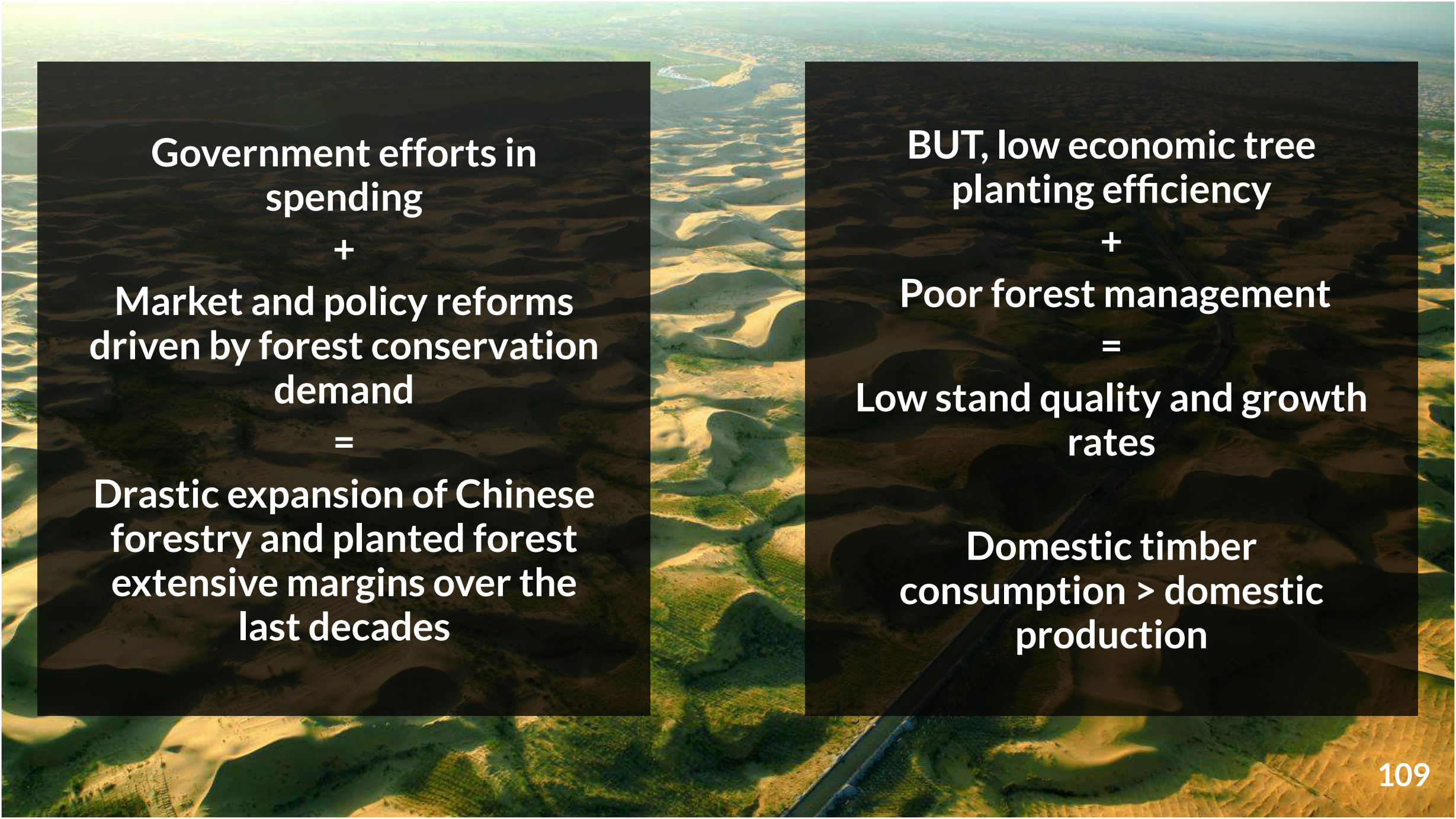


THE CHINESE PARADOX



An aerial photograph of a vast desert landscape, likely the Rubikun Desert in China. The terrain is characterized by rolling sand dunes and patches of green vegetation, possibly the result of afforestation efforts. A long, straight road or railway line cuts through the desert, with a few small structures visible along its path. The lighting suggests a bright, sunny day, casting long shadows across the dunes.

**Government efforts in
spending
+
Market and policy reforms
driven by forest conservation
demand
=
Drastic expansion of Chinese
forestry and planted forest
extensive margins over the
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**BUT, low economic tree
planting efficiency
+
Poor forest management
=
Low stand quality and growth
rates**

**Domestic timber
consumption > domestic
production**

An aerial photograph of a river delta, likely the Yangtze River Delta, showing a complex network of waterways and land. A dark grid pattern is overlaid on the image, creating a structured background for the text.

Government efforts in
spending

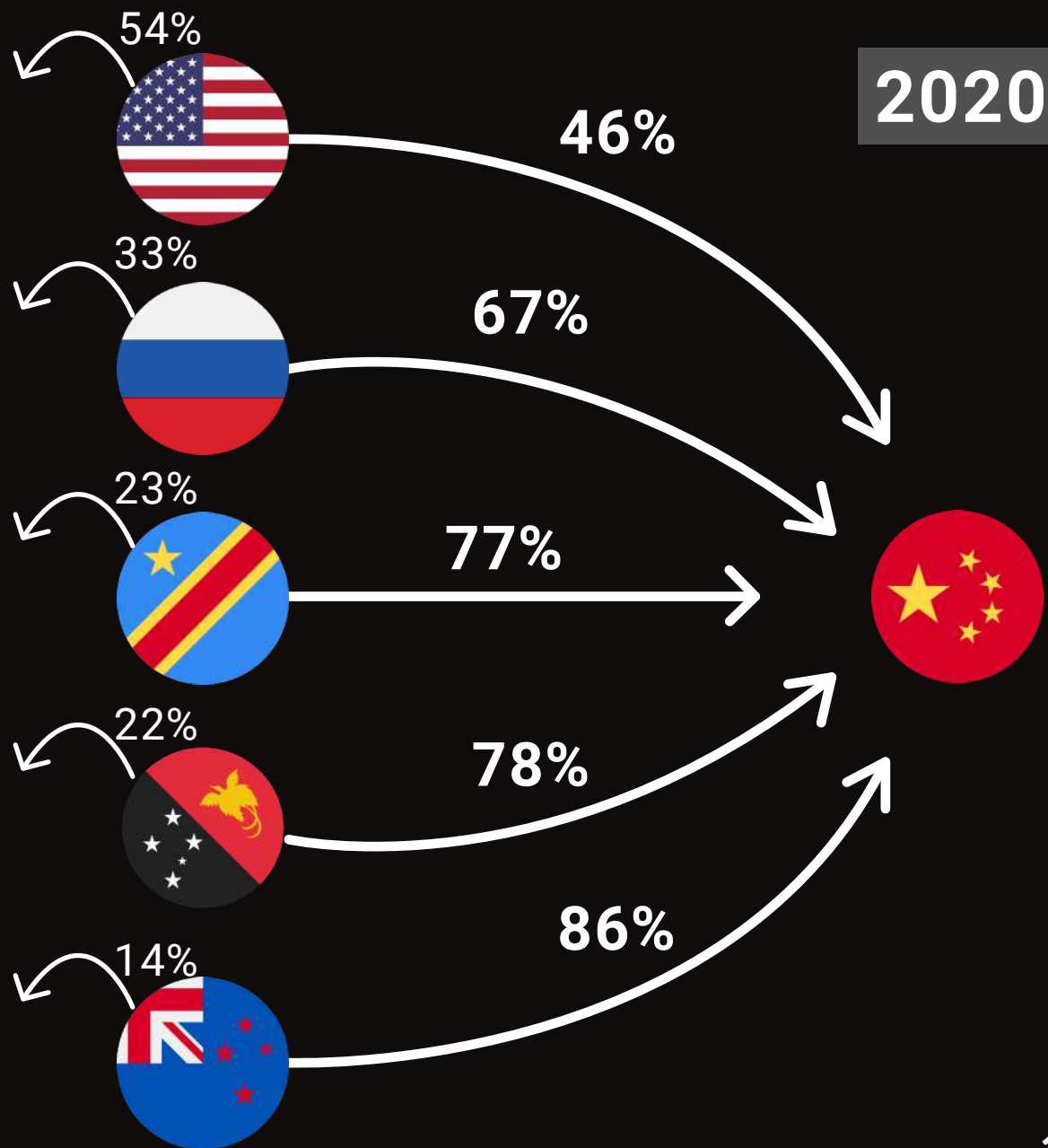
BUT, low economic tree
planting efficiency

**CHINA IS HIGHLY DEPENDENT ON IMPORTED WOOD
PRODUCTS, WHICH NOW ACCOUNT FOR
APPROXIMATELY HALF OF ITS TOTAL TIMBER SUPPLY**

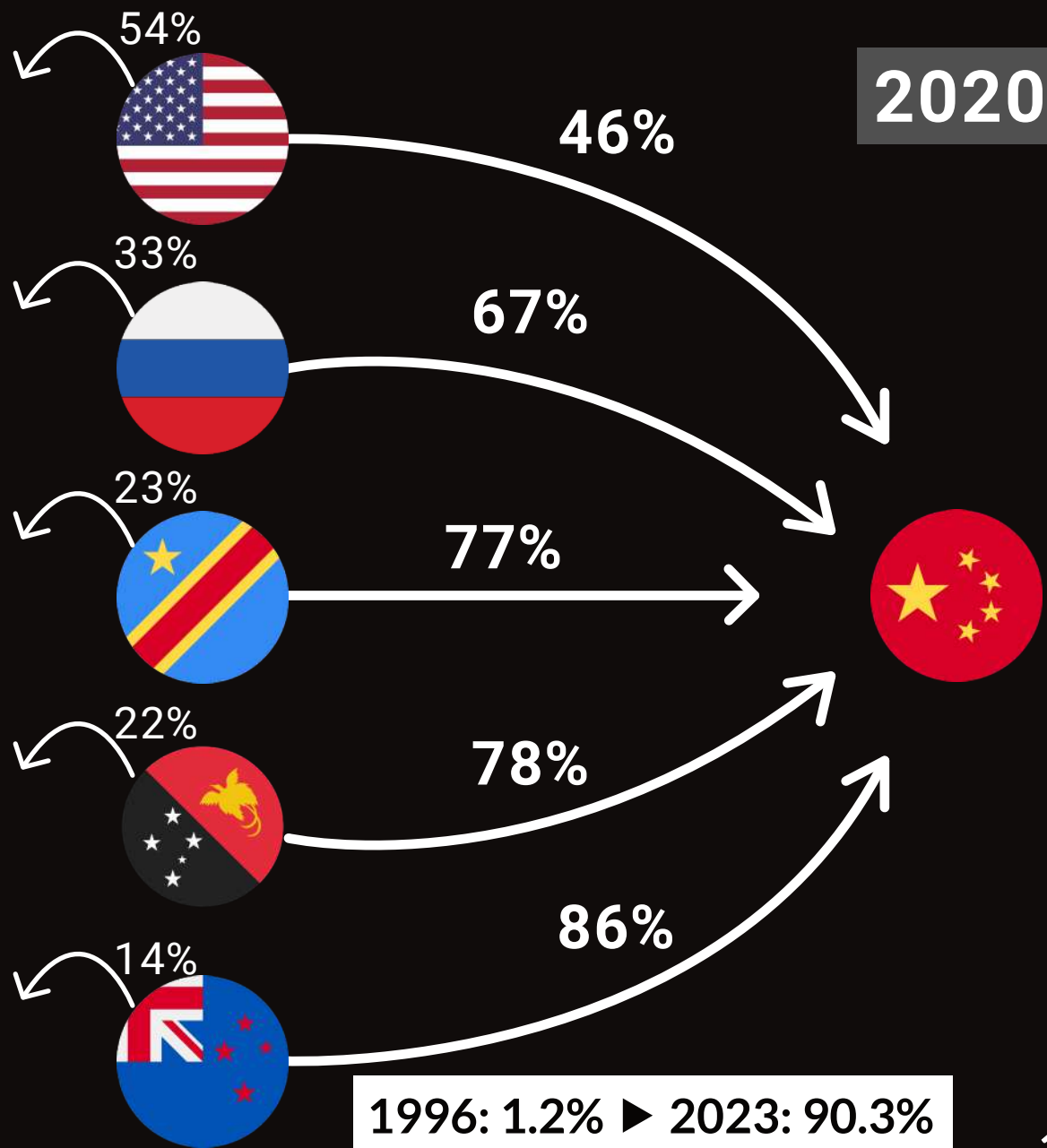
forestry and planted forest
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last decades

Domestic timber
consumption > domestic
production

CO-DEPENDENCE WITH CHINA



CO-DEPENDENCE WITH CHINA



A close-up photograph of several stacked logs of roundwood. The logs are cut into circular cross-sections, revealing a light-colored, textured wood interior. The bark is dark and rough. The logs are arranged in a slightly overlapping manner, creating a sense of depth. A semi-transparent dark horizontal band is overlaid across the middle of the image, containing the title text in white.

ROUNDWOOD TRADE FLOWS ARE PREDOMINANTLY DEMAND-DRIVEN

Shanghai

1984

2016

114



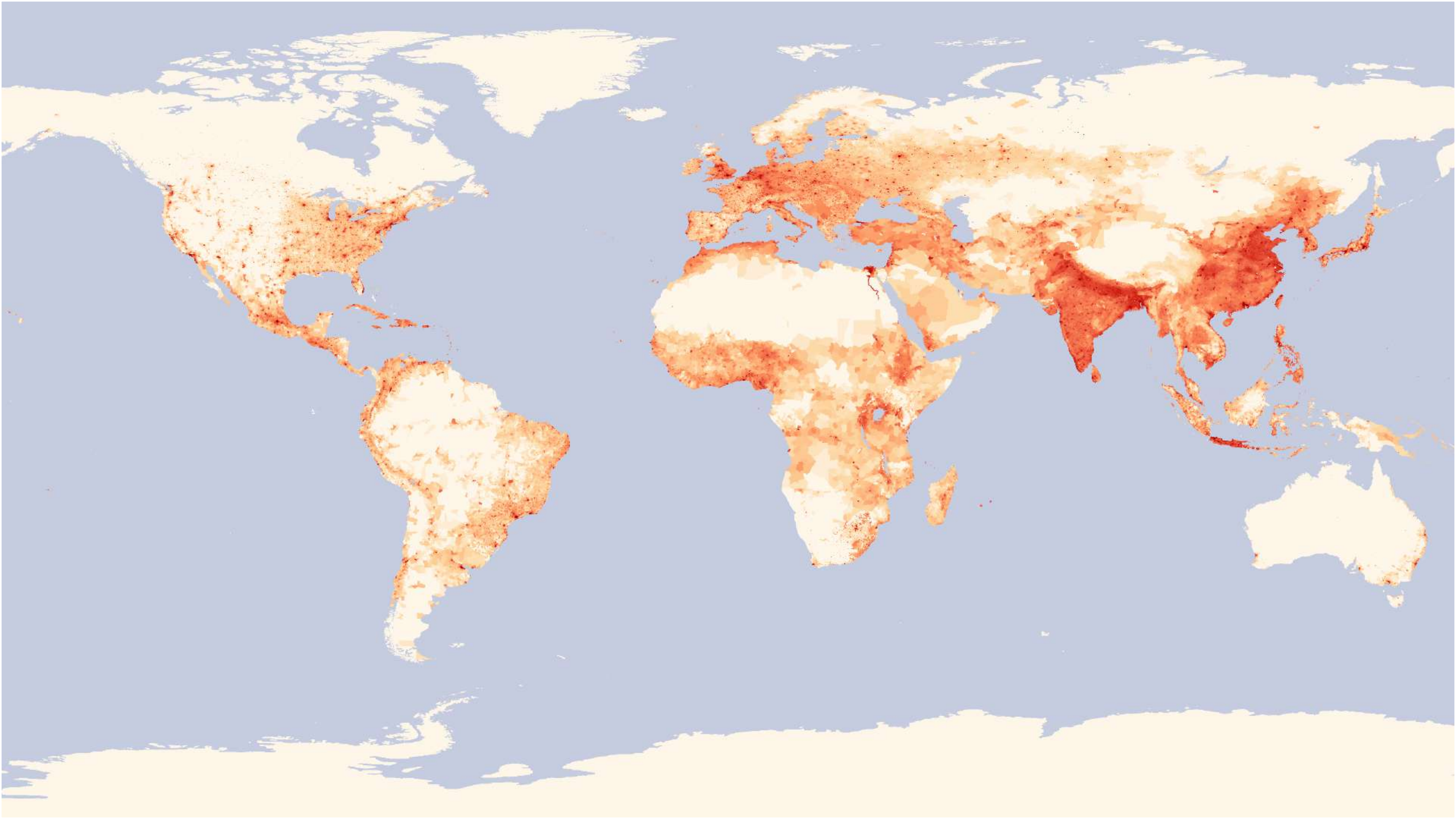
Shanghai

URBANIZATION IS A MAJOR DETERMINANT OF MATERIAL CONSUMPTION

1984

2016

115



La fuite du chêne français en Chine

Mardi 13 juillet 2021

▶ ÉCOUTER (5 MIN)



Grumes de chêne dans une scierie de l'Indre, juillet 2021 ©Radio France - Anne-Laure CHOUIN

La filière bois française lance un cri d'alarme : les volumes de chêne français achetés par la Chine en ce moment pourraient bien mettre le secteur en péril. Ces exportations massives constituent autant de matière première que ne pourront pas travailler les scieries et les artisans français.

La France laisse-t-elle partir ses chênes vers la Chine ? Depuis quelques mois, avec la hausse de la demande en bois et l'envolée du cours des matières premières, on assiste à une ruée des acheteurs étrangers, particulièrement chinois, sur le chêne français. Notamment parce que la Russie, grand producteur de chêne, a décidé de stopper ses exportations. Mais également parce que la Chine souhaite préserver ses forêts.

C'est donc en partie la France qui répond à la demande internationale, au détriment de sa propre filière bois. Les scieries et les artisans craignent de ne bientôt plus pouvoir se fournir.

Accueil / France - Monde / Environnement

La Chine vide la France de ses forêts et de son bois, une "aberration économique et écologique" selon les instances



Selon la FNB, les achats chinois de chênes français ont grimpé de 42 % à fin mai, par rapport à 2020. / Unsplash

Nos dernières vidéos



Cugnaux : le peintre Bernard

Les plus lus

Lus

Commentés

1 Télé - médias. Polémique dans "La France a un Incroyable Talent" : la production de M6 s'explique sur la séquence de la flûte

2 Cyril Hanouna. Insultes de Cyril Hanouna envers Louis Boyard : Olivier Véran et Yaël Braun-Pivet réagissent et tacent cette "dérive" du débat

3 Sécurité. Armes à feu, munitions, couteaux... les Français vont pouvoir se débarrasser de leurs armes non déclarées

4 Votre retraite. Retraites complémentaires Agirc-Arrco : pourquoi le projet de transfert des cotisations pourrait plomber la réforme des retraites

5 Faits divers. Aminat qui a appelé à porter l'abaya dans son lycée, assure avoir agi pour médiatiser "l'injustice" des lycéennes voilées

—— The withdrawal of China

01 *External geopolitical shocks:* Russia's 2022 roundwood export ban, war in Ukraine, US-China trade war

02 *Domestic self-sufficiency policies* to reduce reliance on wood imports (National Reserve Forest Project)

03 *Domestic structural economic changes:* real estate crisis, increasing labor costs, pivot to tech.-intensive capital exports



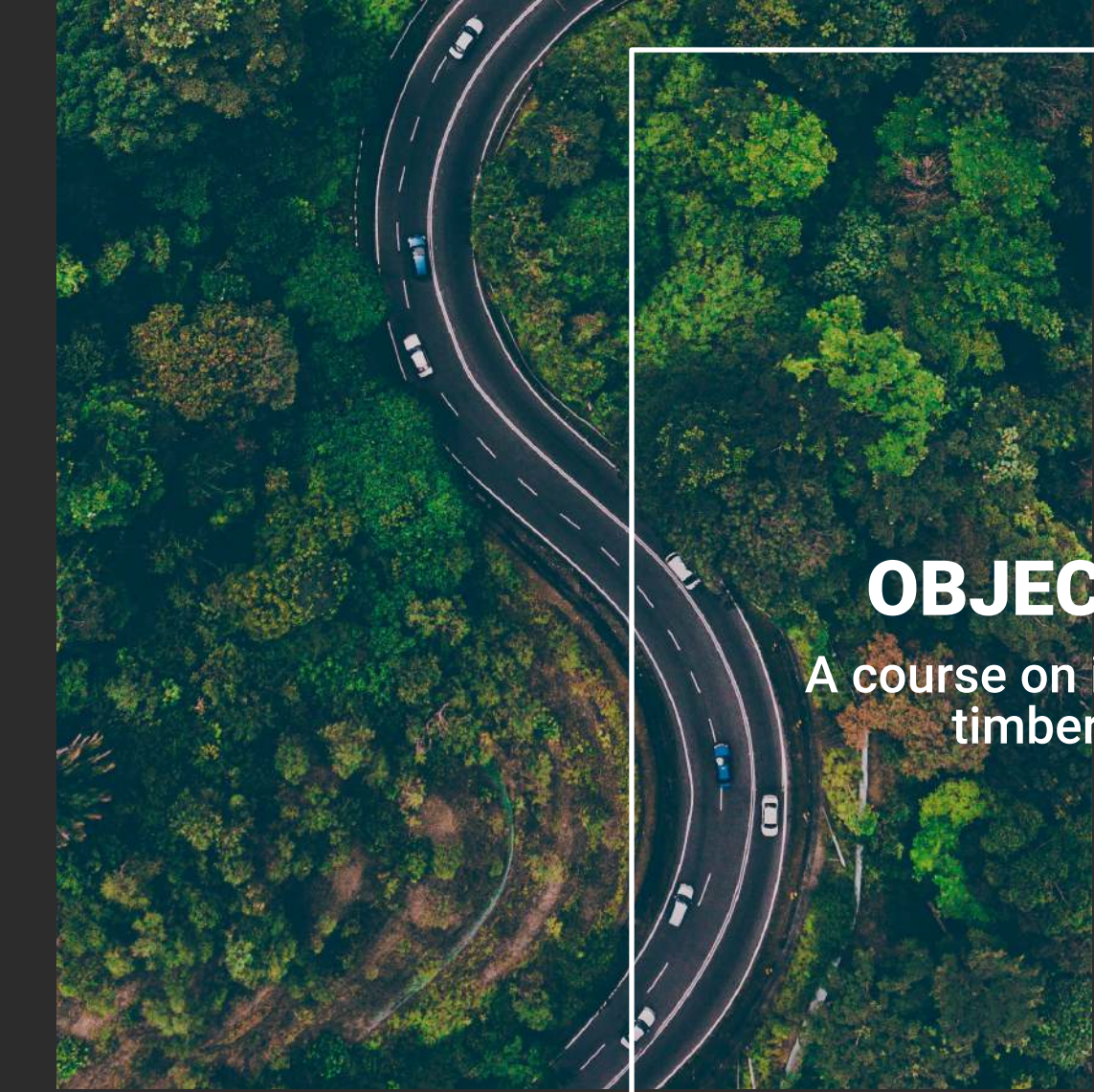
Towards a potential “post-China” era in the global roundwood market

- ▶ China’s declining integration into the roundwood trade network is likely to continue
 - ▶ Necessity for major exporters to identify new, sustainable markets for timber supply (e.g., New Zealand)
 - ▶ The world is becoming increasingly fragmented and marked by policy uncertainty
-



A dark, moody photograph of a forest floor. In the foreground, several large, cut logs are stacked horizontally. The background is filled with dense green foliage and tall, thin trees, creating a sense of depth and a natural setting. The overall tone is somber and contemplative.

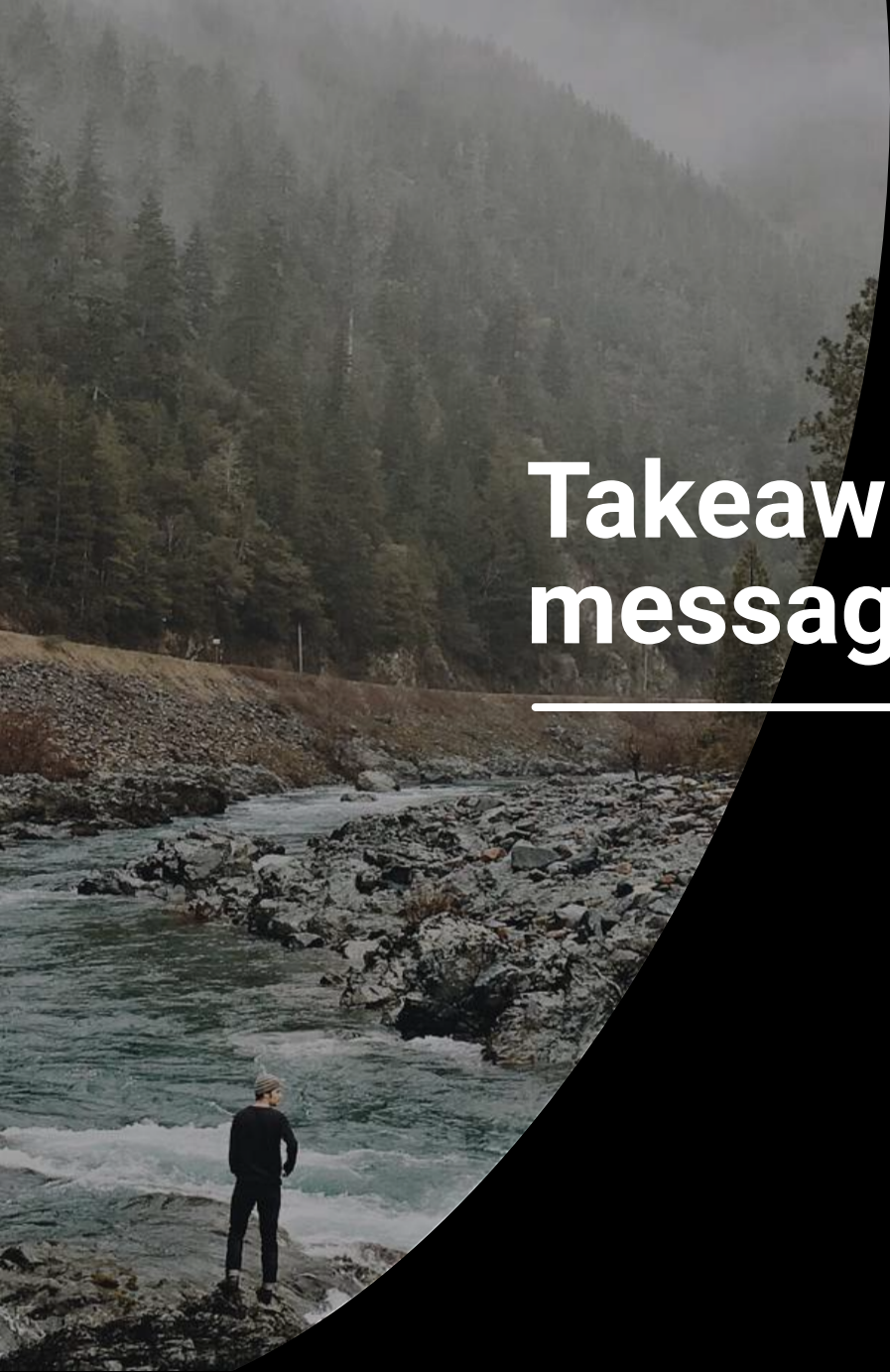
05 Conclusion, and some takeaway messages.

An aerial photograph of a winding asphalt road with white dashed lines, curving through a dense, lush green forest. Several cars are visible on the road, including a white car, a blue car, and a dark car. The road curves from the top left towards the bottom center of the frame.

OBJECTIVES

A course on international
timber trade

- 1 Taking a step back: from France to international forest issues.
- 2 International trade data for wood products: scope and limits.
- 3 Data storytelling: what do the data say?
- 4 A game of trade: theoretical intuitions on trade mechanisms.



Takeaway messages

- The roundwood trade network shows **short-term resilience to exogenous disruptions**
- It follows **long-term trends**, becoming more interconnected and structurally concentrated
- It presents an **uneven structure** where highly-concentrated countries dominate and concentrate trade
- It is **polarized around China's market dominance**, which rapidly grew to concentrate over 56% of total trade value by 2021, due to its import demand, with **potential co-dependences**
- The **recent decline in China's contribution** post-2021—a result of geopolitical shocks, domestic self-sufficiency policies, and structural economic shifts—**signals a fundamental shift** in trade

Thank you!

