27th Annual DNB Research Conference

The Macroeconomic Effects of Geopolitical Uncertainty

DeNederlandscheBank

EUROSYSTEEM

Changing Global Linkages: A New Cold War?

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The Macroeconomic Effects of Geopolitical Uncertainty
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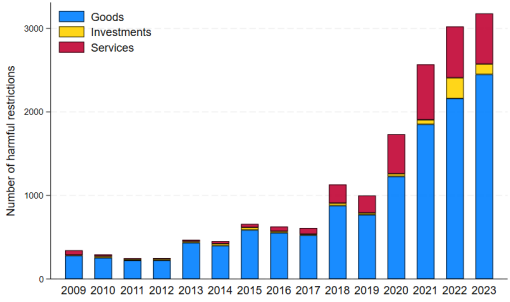
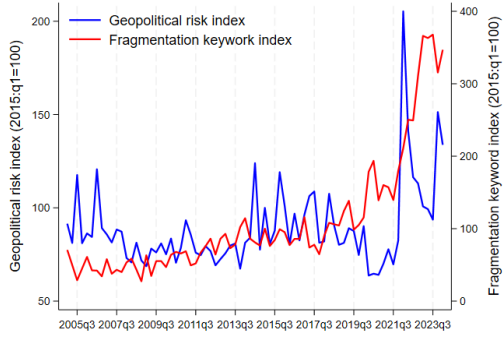
Motivation

Rising fragmentation pressures

Harmful restrictions on trade and investment

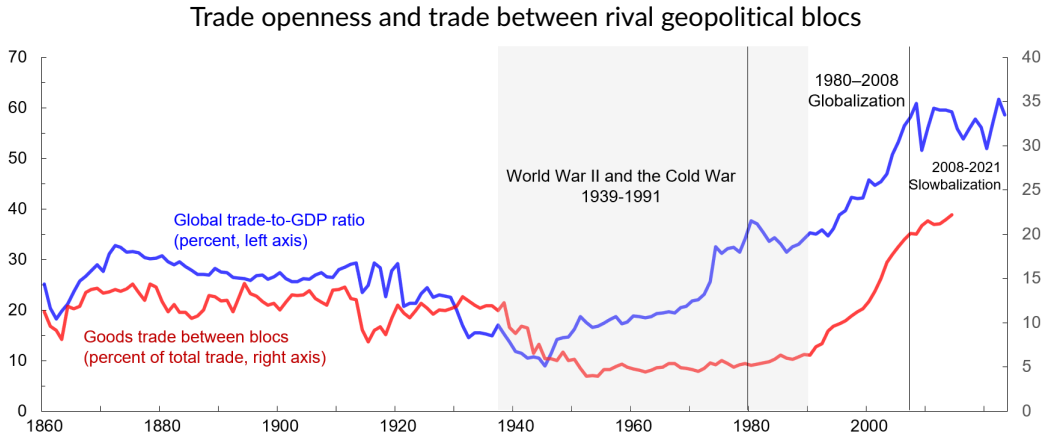


Geopolitical risk and fragmentation index



Sources: Caldara & Iacoviello (2022); Global Trade Alert; Hassan et al. (2019); NL Analytics.
Note: Fragmentation index measures the average number of sentences, per thousand earnings calls, that mention at least one of the following keywords: deglobalization, reshoring, onshoring, nearshoring, friend-shoring, localization, regionalization.

Globalization and trade fragmentation in the past



Sources: Fouquin & Hugot (2016); CEPII; Gokmen (2017); Jordà, Schularick & Taylor Macrohistory Database; IMF World Economic Outlook Database.
Note: Rival geopolitical blocs during the Cold War are defined based on Gokmen (2017).

Key Questions

Key questions

Are geopolitical tensions and the surge of policy measures affecting global linkages?

- Is there realignment of sources of imports and FDI?
- Are trade, investment and capital flows fragmenting along geopolitical lines?
- What is the role of nonaligned countries?

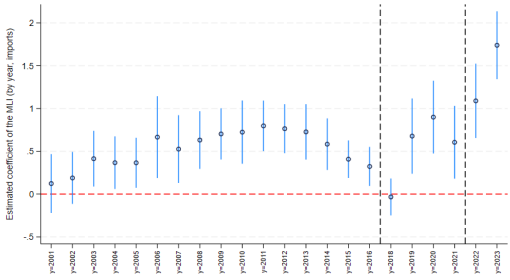
What are the economic consequences of fragmentation?

- Are industrial policies (IPs) fueling current account imbalances?
- What might be the spillovers of sectoral policies? The case of EVs in the EU

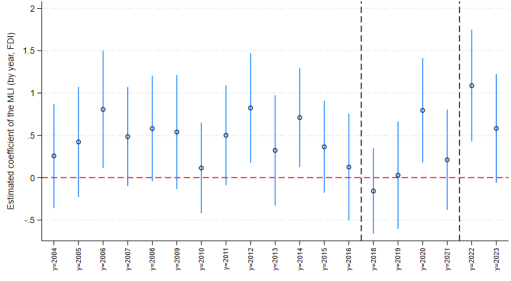
Results

1. Reallocation across import and FDI sources

Reallocation across Import Sources



Reallocation across FDI Sources



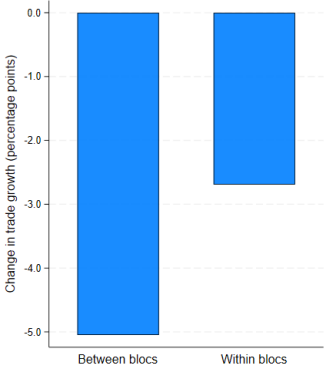
Notes: The figure plots the estimated coefficients on year indicators along with the 90th percentile confidence intervals from regressing the modified Lilien index (MLI) on country and year fixed effects with 2017 the excluded year. The MLI equals 0 if there is no structural change between $t-1$ and t.
Sources: Lilien (1982); Gopinath et al (2024); Trade Data Monitor; fDi Markets.

1. Reallocation across import and FDI sources

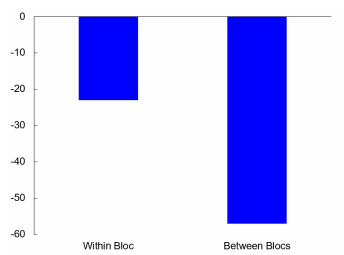
- Import reallocation has increased by roughly 15% after Russia's invasion of Ukraine in the full sample, and by almost 40% in advanced economies compared to the average observed over 2003-2021
- FDI exhibits striking similarity, with reallocation increasing significantly more for advanced economies

2. Emerging fault lines in trade, FDI and financial flows

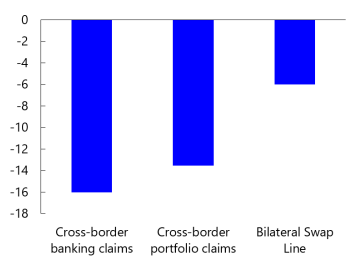
Change in trade growth post war



Change in FDI shares post war



Change in financial flows and geopolitical distance



Notes: The left panel shows the weighted quarterly trade growth averaged over 2022Q2-2024Q1 minus the equivalent for 2017Q1-2022Q1 within blocs, and between blocs. The middle panel shows the percent change in the number of FDI between 2022Q2-2023Q2 and 2018Q1-2022Q1 within and between blocs. The right panel shows the estimated percent change of cross-border financial flows and establishment of swap lines in response to one standard deviation increase in geopolitical distance.
Sources: Gopinath et al. (2024), IMF GFSR Chapter 3 (April 2023), Koosakul and Miksjuk (2024), Trade Data Monitor, COFER, Datastream, FRB, FRED.

2. Emerging fault lines in trade and FDI

	(1)	(2)	(3)	(4)	(5)	(6)
	Trade around the Russian invasion of Ukraine		Trade during the Cold War		FDI around the Russian invasion of Ukraine	
Between Bloc × Post War	-0.1059**	-0.1212**	-0.6092***	-1.1076***	-0.6839***	-0.2274*
	(0.041)	(0.058)	(0.163)	(0.110)	(0.103)	(0.123)
Nonaligned × Post War	0.0403	0.0043	-0.2612**	-0.4641**	0.0227	0.0659
	(0.030)	(0.051)	(0.110)	(0.235)	(0.037)	(0.064)
Observations	259,840	259,780	766,007	687,736	145,058	134,860
Country-pair FE	Y	Y	Y	Y	Y	Y
Time FE	Y	-	Y	-	Y	-
Source x Time FE	N	Y	N	Y	N	Y
Destination x Time FE	N	Y	N	Y	N	Y

Notes: The table shows the Poisson pseudo-maximum likelihood results for a gravity model where the dependent variable is bilateral trade flows (columns 1-4) and the number of announced FDI (columns 5-6) between source and destination countries. Data are quarterly for the periods 2017:q1-2024:q1 (columns 1-2) and 2010:q1-2024:q2 (columns 5-6), while they are annual from 1920 to 1990 (excluding World War II, columns 3-4). The Post War variable identifies the period following Russia's invasion of Ukraine and is equal to 1 from 2022:q1 onwards. The Cold War dummy is equal to 1 for the years 1947-1990. The Between Bloc variable equals 1 if the source and destination country do not belong to the same geopolitical bloc, and 0 otherwise. The Nonaligned variable equals 1 if at least one country in the pair is nonaligned.
Source: Gopinath, Gourinchas, Presbitero & Topalova (2024).

2. Emerging fault lines in financial flows

	(1)	(2)	(3)	(4)	(5)	(6)
	Total portfolio flows		Portfolio debt flows		Portfolio equity flows	
Between Bloc × Post War	-0.0200**	-0.0213**	-0.0278***	-0.0247***	0.0038	-0.0077
	(0.009)	(0.008)	(0.009)	(0.009)	(0.007)	(0.007)
Nonaligned × Post War	0.0149**	-0.0149	0.0110	-0.0153	0.0159***	-0.0056
	(0.007)	(0.011)	(0.007)	(0.011)	(0.006)	(0.008)
Observations	221,216	221,184	221,216	221,184	221,216	221,184
Country-pair FE	Y	Y	Y	Y	Y	Y
Time FE	Y	-	Y	-	Y	-
Source x Time FE	N	Y	N	Y	N	Y
Destination x Time FE	N	Y	N	Y	N	Y

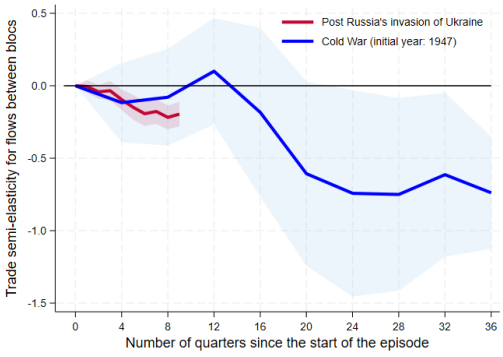
Notes: The table shows the OLS results of the same gravity model used for trade and FDI fragmentation, using semi-annual data on portfolio and equity flows. The dependent variable is the change in the share of portfolio assets by source country s to destination country d between t and $t-1$. This is computed using the Davis, Haltiwanger and Schuh (1996) net growth rate. The Post War variable identifies the period following Russia's invasion of Ukraine and is equal to 1 from 2022:q1 onwards. The Between Bloc variable equals 1 if the source and destination country do not belong to the same geopolitical bloc, and 0 otherwise. The Nonaligned variable equals 1 if at least one country in the pair is nonaligned.
Source: Gopinath, Gourinchas, Presbitero & Topalova (2024).

2. Fragmentation of goods trade, investment and financial flows

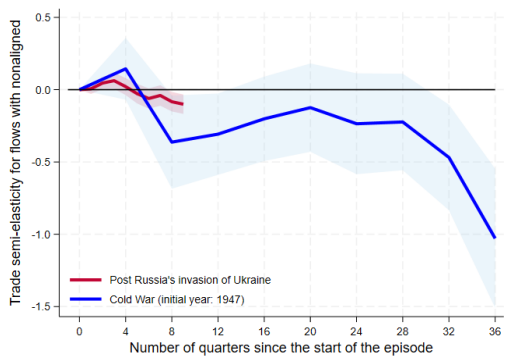
- After the Russian invasion of Ukraine, goods trade and FDI between blocs declined by roughly 12 and 20% more than flows within blocs, respectively
- Similar findings hold also when considering financial fragmentation—after the war, portfolio shares between blocs declined by roughly 0.5 pps more than those within blocs
- The war acted as a 'catalyst' for geoeconomic fragmentation: clear evidence of a slowdown in the flows of goods trade and capital between blocs compared to within blocs after Russia's invasion in Ukraine

2. Trade fragmentation: Now vs the Cold War

Trade between blocs



Trade with nonaligned



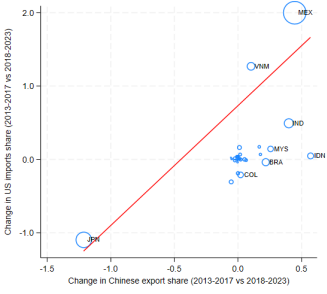
Sources: Trade Data Monitor; Fouquin & Hugot (2016).

2. Trade fragmentation: Now vs the Cold War

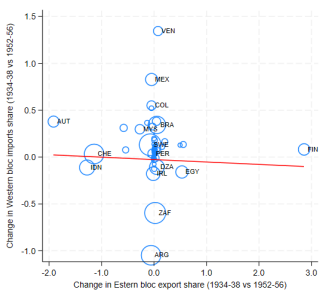
- Trade between the rival Western and Eastern blocs declined by two thirds during the Cold War, relative to trade within these blocs
- While during the Cold War, trade with nonaligned economies declined by around 40%, currently we do not observe any relative reduction in trade and investment flows involving nonaligned countries
- The emerging geopolitical cracks—while still shallow—are a source of concern as the size of the “treatment” today vs the Cold War is very different

3. The emergence of connector countries: Now vs the Cold War

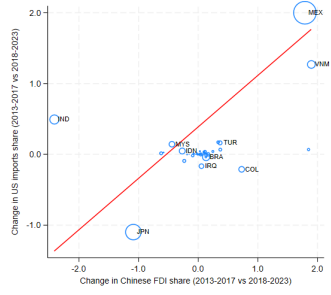
Trade now



Trade during the Cold War



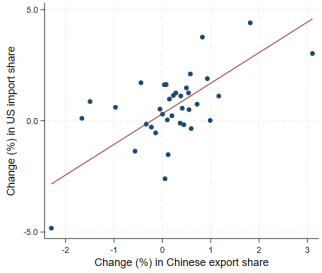
FDI now



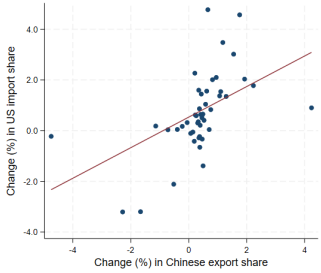
Sources: Trade Data Monitor; fDi Markets. Notes: All panels include only nonaligned countries. Panel A plots the change in U.S. import shares between 2018-23 and 2013-17 against the change in Chinese export shares over the same period. Panel B plots the change of the Western bloc import shares between 1952-56 and 1934-38 against the change of the Eastern bloc export shares over the same period. Panel C plots the change in U.S. import shares between 2018-23 and 2013-17 against the change in Chinese outward FDI over the same period.

3. The emergence of connector countries: Product-level analysis

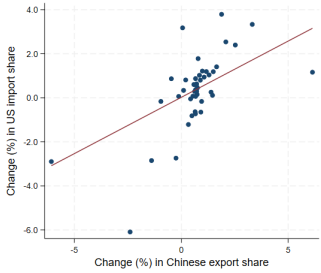
HS2 product level



HS4 product level



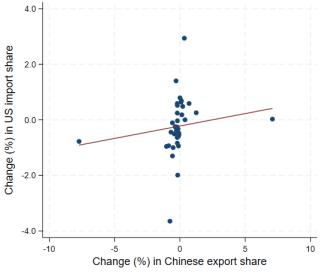
HS6 product level



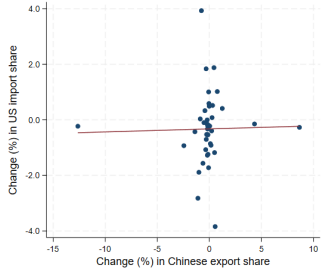
Sources: UN Comtrade. Notes: All panels include only nonaligned countries and products (defined at the HS 6-digit level) targeted by the tariffs imposed by the U.S. administration on Chinese imports in 2018 and 2019. All panels plot the change in U.S. import shares between 2018-2023 and 2013-2017 against the change in Chinese export shares over the same period. The left panel defines products at the 2-digit HS level, while the middle and right panels at the 4-digit and 6-digit HS levels, respectively. The charts are binned scatterplots that absorb product-level fixed effects.

3. The emergence of connector countries: A placebo test

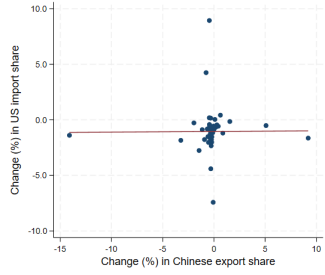
HS2 product level



HS4 product level



HS6 product level



Sources: UN Comtrade. Notes: All panels include only nonaligned countries and products (defined at the HS 6-digit level) targeted by the tariffs imposed by the U.S. administration on Chinese imports in 2018 and 2019. All panels plot the change in U.S. import shares between 2013-2015 and 2010-2012 against the change in Chinese export shares over the same period. The left panel defines products at the 2-digit HS level, while the middle and right panels at the 4-digit and 6-digit HS levels, respectively. The charts are binned scatterplots that absorb product-level fixed effects.

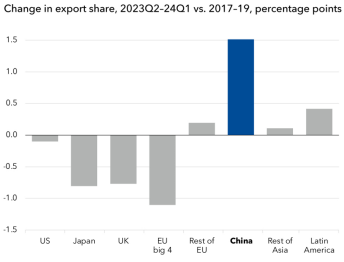
3. The emergence of connector countries: Now vs the Cold War

- There is growing evidence that direct links between the U.S. and China are simply being replaced by indirect links
- A 1% increase in the US import share between 2013-17 and 2018-23 is associated with a 1.6% higher share of Chinese exports and a 0.7% increase in the share of FDI from China over the same period
- The correlation between gains in U.S. import shares and the rise in imports from China holds at various level of product disaggregation and is stronger for products subject to the Trump tariffs

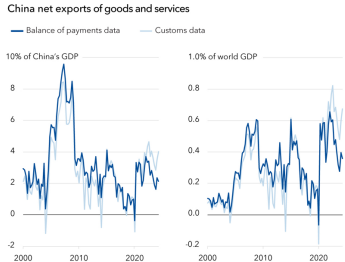
Effects of Fragmentation

1. Inward Strategies and the Current Account: Still Connected

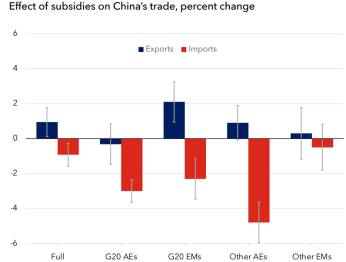
China's exports



China's trade surplus

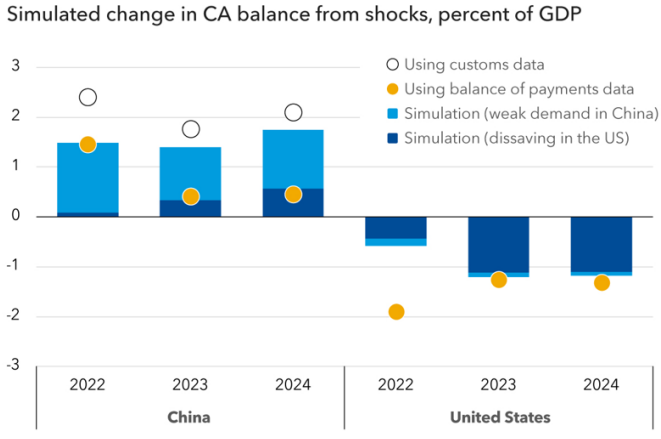


Effect of subsidies



Sources: Gourinchas et al. (2024), Rotunno and Ruta (2024), China National Bureau of Statistics, China State Administration of Foreign Exchange, IMF Direction of Trade Statistics, IMF World Economic Outlook database.
Notes: In the right panel, bars show coefficient estimate and capped lines are the associated 90 percent confidence intervals.

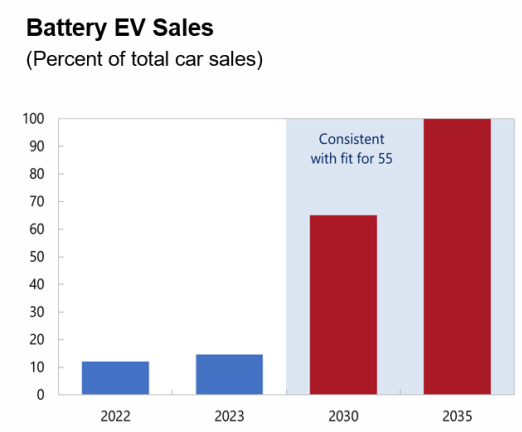
1. Inward Strategies and the Current Account: Still Connected



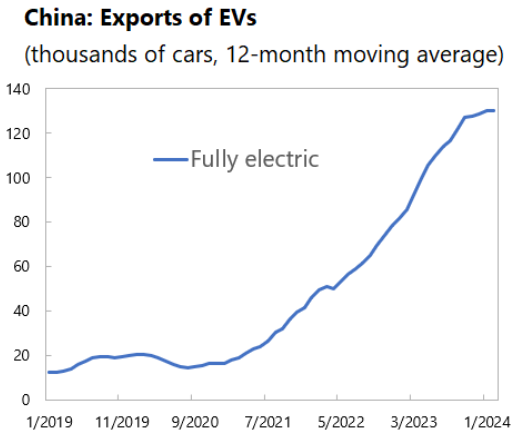
Sources: Gourinchas et al. (2024), China National Bureau of Statistics, China State Administration of Foreign Exchange, IMF FSGM.
Notes: Simulations reflect negative investment and consumption shocks ("weak demand in China") versus October 2021 WEO forecasts. "Dissaving in the US" shows positive consumption and investment shocks leading to lower household saving rates and fiscal balance compared to pre-COVID average. Circles show data outturns as deviations from the 2016-19 average; in 2024, they reflect year-to-date averages.

2. Sectoral Policies: The Case of EVs in EU

EU's planned transition to EV



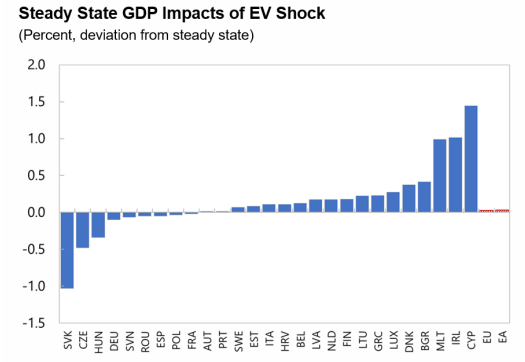
China's EV exports



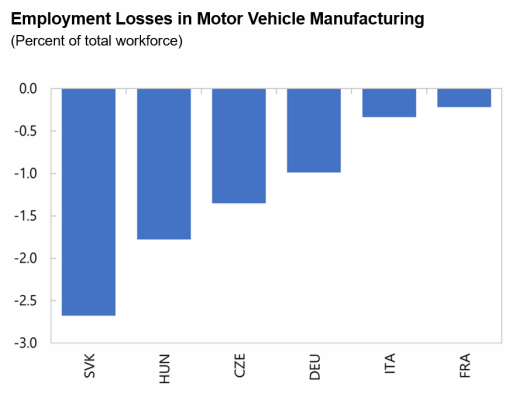
Sources: Wingender et al. (2024), IEA, European Commission, CEIC, China Customs.

2. Sectoral Policies: The Case of EVs in EU

Heterogeneous impact of the EV shock in EU



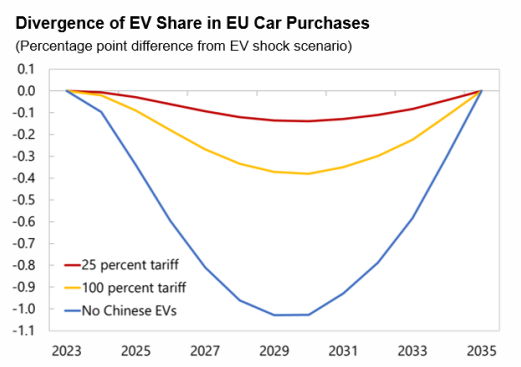
Challenging transition for labor markets



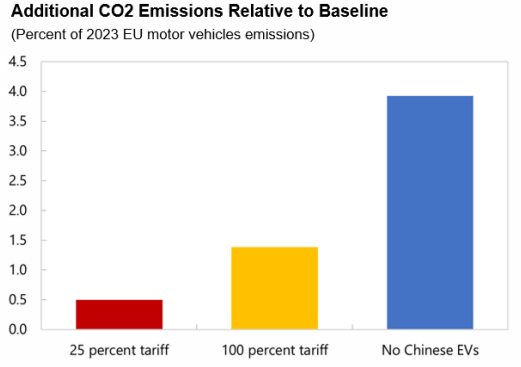
Sources: Wingender et al. (2024), OECD; PWT; Fontagné et al. (2022).
Notes: The EV Shock scenario assumes a permanent 15 percent increase in TFP in the Chinese automotive sector and a preference shift towards EVs, resulting in a 15 percentage point increase in the share of EU spending on Chinese automotive sector output in steady state.

2. Sectoral Policies: The Case of EVs in EU

EU tariffs raise costs to attain climate targets



…and may result in additional emissions



Sources: Wingender et al. (2024), IEA (2021).
Notes: The EV Shock scenario assumes a permanent 15% increase in TFP in the Chinese automotive sector and a preference shift towards EVs, resulting in a 15pp increase in the share of EU spending on Chinese automotive sector output in steady state. The 25% tariff and 100% tariff scenarios additionally assume European countries respectively impose a 25% tariff and a 100% tariff on all Chinese imports from the automotive sector. The No Chinese Vehicles scenario additionally assumes prohibitive barriers to Chinese automotive imports into the EU. Additional emissions calculated assuming that average EV lifetime emissions are half of ICE emissions with a typical vehicle lifespan of 15 years, based on IEA (2021).

Conclusions

Summary and Key Takeaways

- Trade and investment between blocs is decreasing, compared to trade and investment within blocs, similar to the Cold War period.
- While the decoupling remains small compared to the Cold War, it is in its early stages and could worsen significantly if geopolitical tensions persist and restrictive trade policies continue to mount
- Different from the early years of the Cold War, a set of nonaligned connector countries are rapidly gaining importance and serving as a bridge between blocs
- The emergence of connectors underpins the strength of global trade, but does not necessarily increase diversification, strengthen supply chains, or lessen strategic dependence
- Aggregate external imbalances are still largely driven by domestic macro forces
- Inward strategies, however, generate international trade spillovers and can have unintended consequences, threatening the achievement of global goals

Technical Details

Data sources

- Bilateral trade data:
  - Current period: Trade Data Monitor has monthly data on 115 countries accounting for $>$ 95% of world GDP (plus COMTRADE for specific exercises)
  - Cold War: the Historical Bilateral Trade and Gravity dataset (TRADHIST) by Fouquin and Hugot (2016)

- Bilateral FDI data from fDi Markets cover over 320,000 investment-level announced projects between 186 countries, from January 2003 until December 2023

- Bilateral geopolitical distance: we use the ideal point distance (Bailey et al. 2017), based on voting patterns at the UNGA, to assign countries to hypothetical blocs

Key advantage $\Rightarrow$ analyzing trade and FDI in the same gravity setting and comparing the current period with the Cold War one (*only* for trade)

Defining geopolitical blocs

- We define 3 groups of geopolitically aligned countries using the similarity of countries' voting patterns at the UNGA to capture countries' bilateral political attitudes towards one another (Aiyar, Malacrino and Presbitero, 2024):
  - U.S. leaning bloc, which includes countries in the top quartile in their political proximity to the U.S.;
  - China leaning bloc, which includes countries in the top quartile in their political proximity to China; and
  - Nonaligned countries, comprising the remaining economies.

- Robustness: narrower definition of blocs with a larger group of nonaligned economies.

Cold War period $\Rightarrow$ bloc definition based on Gokmen (2017), with Western and Eastern blocs, plus the nonaligned.

Empirical approaches

- Reallocation measured by a standard measure of structural change

$$MLI_{rt} = \sqrt{\sum S_{irt} \times (ln(x_{irt}/x_{irt-1}) - ln(X_{rt}/X_{rt-1}))^2}$$

where x_{irt} is imports/FDI from source i, X_{rt} is overall imports/FDI of country r in year t, and $S_{irt} = x_{irt}/X_{rt}$.

- Trade and investment fragmentation estimated in a standard gravity framework:

$$Y_{sdt} = \beta_1 Between\ Bloc_{sd} \times Post_t + \beta_2 Nonaligned_{sd} \times Post_t + \delta_{sd} + \tau_{st} + \phi_{dt} + \epsilon_{sdt}$$

where Y is the USD value of trade or the number of announced FDI projects between source s and destination d countries in period t. $Post_t = 1$ after Russia's invasion of Ukraine (from 2022:q1 onward).

- Connector countries: for nonaligned countries we look at the correlation between changes in U.S. import shares vs changes in Chinese export shares (overall and at the product-level, up to HS6)