Universität Zürich[UZH]

Topic 12 – Global challenges

Prof. Ralph Ossa

Introduction

- What explains the backlash against globalization? An important driver is the growing perception that international trade is part of the problem when it comes to addressing some of the key challenges of our time.

- In particular, it is increasingly argued that some of the efficiency gains from trade may need to be sacrificed in order to:

  - Maintain peace and security
  - Reduce poverty and inequality
  - Achieve a sustainable economy

Concerns

– **Security**: Rising geopolitical tensions and the COVID-19 pandemic have fueled concerns about the weaponization of trade and exposed vulnerabilities in global supply chains.

– **Inclusiveness**: Rising within-country inequality and uneven gains from globalization have renewed debates about the distributive effects of trade.

– **Climate**: The urgency of decarbonization has prompted doubts about whether international trade is compatible with achieving a sustainable, low-carbon economy.

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WTO perspective

- Unsurprisingly, these themes have therefore featured prominently in recent editions of the WTO's World Trade Report:
  - 2021: *Economic resilience and trade*
  - 2022: *Climate change and international trade*
  - 2023: *Re-globalization for a secure, inclusive and sustainable future*
  - 2024: *Trade and inclusiveness: How to make trade work for all*
  - 2025: *Making trade and AI work together to the benefit of all*
- The overarching conclusion is that trade can actually be an important part of the solution if it is extended to more economies, people, and issues – a process the WTO calls "**re-globalization**."

Overview

- Against this background, we examine the role of international trade in addressing some of the key challenges of our time.

- For each challenge, we summarize the main concerns, outline the perspective of the relevant World Trade Report, and highlight key contributions from the academic literature.

- We address these themes one by one:
  - trade & security
  - trade & inclusiveness
  - trade & sustainability

Trade & security – Concerns

- Disruptions in access to critical imports can have severe economic consequences, fueling concerns about the weaponization of trade and the resilience of global supply chains.

- **Energy and commodities**: The 1970s oil shocks, the 2007–08 food crisis, and the Russia–Ukraine war caused major interruptions in the global flow of oil, gas, grains, and fertilizers.

- **Logistics and transport**: Suez Canal closures, the 2010 Icelandic volcanic eruption, and COVID-19 shipping bottlenecks disrupted key maritime and air corridors and delayed shipments worldwide.

- **Production and inputs**: China's rare earth export restrictions, pandemic-related factory shutdowns, and the global semiconductor supply breakdown disrupted access to essential intermediate goods.

Trade & security – Policy response

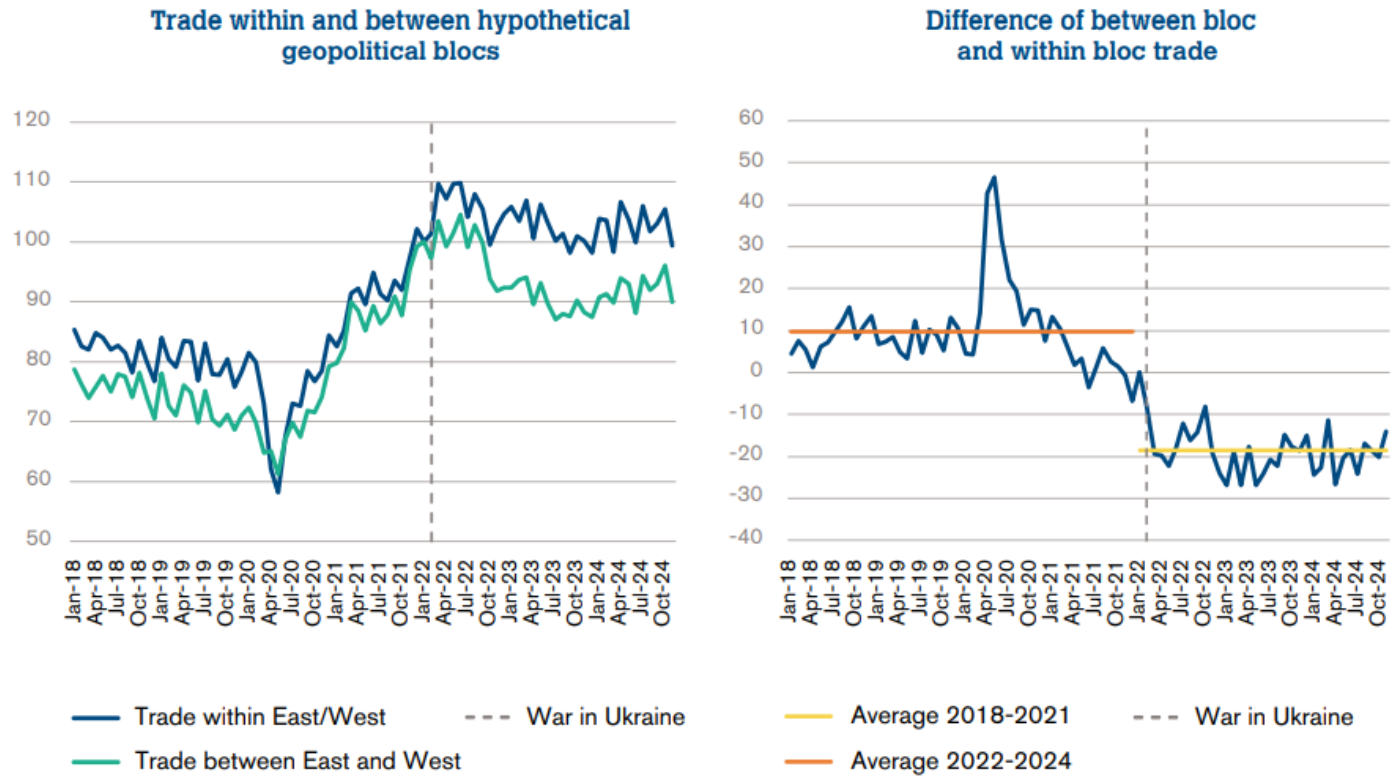
– In response to these concerns, the political debate has become focused on home-shoring, friend-shoring, and de-risking.

– One implication is an increasing fragmentation of international trade along geopolitical lines, with intra-bloc trade growing significantly faster than inter-bloc trade (see next slide).

– This stands in contrast to a long-held view that economic inter-dependence is essential for peace and prosperity.

– A prominent example is European integration, beginning with the European Coal and Steel Community, which aimed to bind former adversaries together to reduce the risk of conflict.

Trade & security – Geoeconomic fragmentation



Source: WTO Global Trade Outlook and Statistics, based on Blanga-Gubbay and Rubinova (2024)

Trade & security – WTO World Trade Report

- The World Trade Report 2023 argues that a strong multilateral trading system is essential for economic security because it provides economies with alternative sourcing options during supply disruptions.

- The COVID-19 pandemic illustrates this point, as global supply chains enabled medical goods trade to rise by 16 percent, personal protective equipment trade by almost 50 percent, and face mask trade by 80 percent in 2020.

- The Report also stresses that expanding economic integration to more economies is necessary to strengthen resilience—a first example of what it terms “re-globalization.”

- The share of highly concentrated “bottleneck products,” meaning goods with few suppliers and large market shares, has more than doubled from 9 percent to 19 percent of traded goods between 2000 and 2021.

Trade & security – Martin et al (2008)

- Martin et al. (2008) analyze how international trade affects the likelihood of interstate conflict, developing a model in which war emerges from bargaining failures under asymmetric information.

- They show that bilateral trade reduces conflict risk because higher bilateral dependence raises the opportunity cost of war for both sides.

- They find that multilateral openness increases conflict risk, as diversified global sourcing lowers bilateral dependence and weakens incentives to compromise in bilateral disputes.

- Using data for 1950–2000, they provide empirical support for these opposing effects, showing that globalization has increased the incidence of localized conflicts even as it reduces the likelihood of global ones.

Trade & security – Caselli et al (2020)

- Caselli et al. (2020) analyze how trade openness affects macroeconomic volatility, revisiting the view that trade raises volatility through increased specialization.

- They show that when country-wide shocks matter, openness can reduce volatility by diversifying exposure across trading partners rather than relying solely on domestic conditions.

- They build a quantitative multisector Ricardian model to separate the specialization and diversification channels and assess their relative importance.

- Using data for 25 countries over 1972–2007, they find that lower trade costs have reduced volatility in most economies, with diversification effects far outweighing specialization effects.

Trade & security – Grossman et al (2023)

- Grossman et al (2023) analyze whether firms systematically under- or overinvest in supply chain resilience by modelling sourcing decisions under cost differences and disruption risks.

- They show that two opposing externalities shape private behavior: firms may underinvest because consumers bear part of the cost of disruptions, but they may also overinvest because surviving a disruption yields extraordinary profits when competitors cannot produce.

- The net distortion is ambiguous and depends on demand characteristics and parameter values, implying that optimal policy may call for reshoring, offshoring, neither, or both.

- For practical policy purposes, the efficiency case for broad intervention is weak, as firms are not systematically misaligned in one direction.

Trade & inclusiveness – Concerns

– There is a widespread perception that inequality is rising, with the rich getting richer and the poor getting poorer — and that trade is partly to blame.

– This perception is reinforced by the “China shock” literature, which highlights labor-market disruptions in the United States linked to import competition from China.

– Many also believe that trade exploits developing economies by relying on low wages, weak labor protections, or the extraction of natural resources.

– More broadly, globalization is seen as benefiting large firms and highly skilled workers while leaving more vulnerable groups behind.

Trade & inclusiveness – WTO World Trade Report

- Trade has been a major driver of inclusiveness, fostering income convergence, poverty reduction, and broad improvements in living standards since the creation of the WTO.

- But many economies and people remain left behind, held back by low trade participation, high trade costs, commodity dependence, and domestic barriers that limit access to new opportunities.

- Achieving true inclusiveness requires a comprehensive strategy that couples open trade with strong domestic policies and deeper international cooperation on issues like climate, digital, and development.

- For the WTO, the priority is to promote greater policy coherence by strengthening cooperation with other organizations, updating the rulebook, and enhancing information sharing and participation.

Trade & inclusiveness – Evidence

- We discussed the evidence in detail in Topic 5 (“Trade and inequality”) and Topic 8 (“Trade, growth, and development”).

- Overall global income inequality has been falling since the 1980s, driven by a sharp decline in between-country inequality, even though within-country inequality has risen in many economies.

- The rise in within-country inequality is due primarily to technology, policy, and institutional change, although trade has also played a role.

- Trade accounts for around one-third of the income convergence between low- and middle-income economies and high-income economies since 1995.

Trade & sustainability – Concerns

– Many assume that “buying local” is inherently “buying green,” a view reinforced by widespread buy-local campaigns.

– Trade is often associated with high transport emissions, since goods move long distances by truck, ship, plane, or train.

– There are concerns about “pollution havens,” where firms might relocate dirty production to economies with weaker environmental standards.

– More broadly, critics fear that global competition pressures governments to lower environmental regulations to attract investment.

Trade & sustainability – WTO World Trade Report

- Trade's environmental impact is multi-channel: it raises emissions through production and transport but lowers them by spreading cleaner technologies and improving efficiency.

- Environmental problems are global: fragmentation would slow green technology diffusion, raise mitigation costs, and weaken collective climate action.

- Re-globalization can support the green transition: deeper integration, especially in services and digital trade, reduces carbon intensity and enables cleaner patterns of specialization.

- Cooperation is essential: aligning trade and environmental policies ensures that climate measures reinforce rather than undermine each other.

Trade & sustainability – Shapiro (2016)

- Shapiro (2016) quantifies the environmental costs of international trade by combining a structural gravity model with detailed data on CO_2 emissions from global shipping and production.

- He finds that international trade increases global CO_2 emissions by about 5 percent, but that the economic gains from trade outweigh these environmental costs by a factor of more than 100.

- Regulating CO_2 emissions from shipping—such as through carbon taxes—raises global welfare, though the distributional effects vary: rich countries gain while many poor countries lose due to their reliance on heavy, fuel-intensive exports.

- The central message is that shipping emissions are economically meaningful but environmentally modest, and that well-designed carbon pricing can improve welfare without undermining the overall benefits of trade.

Trade & sustainability – Le Moigne et al (2024)

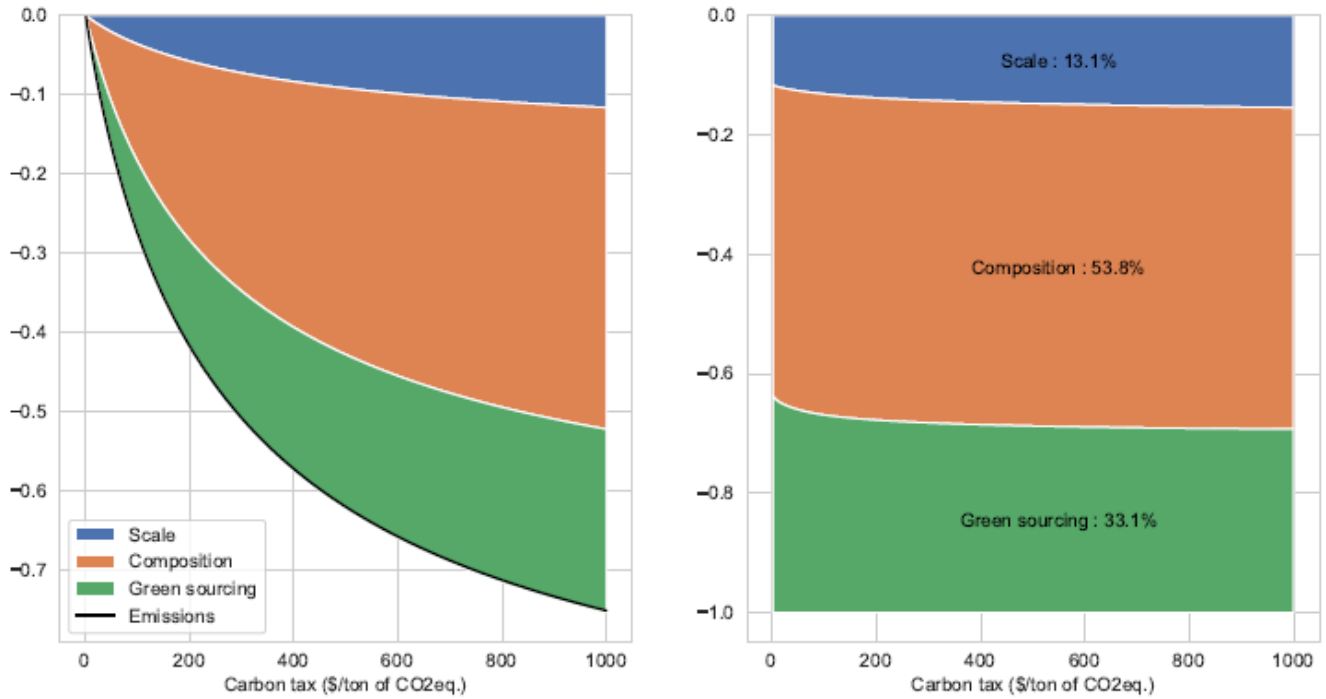
- Le Moigne et al. (2024) show that climate policy can unlock large environmental gains from trade by inducing economies to specialize according to their **environmental comparative advantage**.

- This parallels economic comparative advantage, but environmental gains do not arise naturally — they require supportive climate policy such as carbon pricing.

- A quantitative multi-country, multi-industry model shows that about one-third of total emissions reductions under a carbon tax stem from these trade-enabled gains.

- The key insight is that production emissions far exceed transport emissions, and can be significantly reduced by reallocating production toward lower-emission countries.

Trade & sustainability – Le Moigne et al (2024)



Note: The left panel shows the proportional reduction in greenhouse gas emissions for varying levels of carbon taxes decomposed into three effects. The right panel shows the contributions of each effect to the overall emissions reduction for varying levels of carbon taxes.

Source: Le Moigne et al (2024)

Trade & sustainability – Staiger (2022)

- Staiger (2022) has a discussion on border carbon adjustments such as the European Union's Carbon Border Adjustment Mechanism (CBAM).

- His main point is that applying the EU carbon price to the carbon content of imports overcompensates for the market-access loss induced by the EU's carbon price.

- A true "leveling of the playing field" requires a non-discriminatory MFN tariff that raises the price of imports by exactly as much as the carbon price raises the cost of EU production.

- Campolmi et al. (2025) show quantitatively that such a tariff would outperform the EU's CBAM in terms of global emissions and EU welfare, while avoiding the major welfare losses for trading partners that a comprehensive CBAM would create.

Conclusion

- We explored how trade can be part of the solution to some of the key challenges of our time:
  - trade & security
  - trade & inclusiveness
  - trade & sustainability

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