



The Global Effects of Subglobal Climate Policies

Carolyn Fischer
Cancun, December 7, 2010



Introduction

- Developed countries are concerned that their efforts to regulate carbon will lead to carbon leakage to nonregulating countries
 - Also worried about competitiveness of their energy intensive industries
- Developing countries are concerned that anti-leakage measures will unfairly harm their energy-intensive sectors
 - Also want rich countries to take responsibility for the carbon emissions associated with their consumption

Measures in Recent Proposals

- American Clean Energy and Security Act of 2009 (ACESA; passed) and American Power Act (proposed) have provisions for “Ensuring Real Reductions in Industrial Emissions”
- Output-based rebates (**OBR**) of allowances for energy-intensive, trade exposed sectors (EITE)
 - Offsets domestic production cost increases (on average) from emissions liabilities
 - Different from grandfathering (as in EU), which is a lump-sum transfer to compensate losses
- Border carbon adjustment (**BCA**) for imports
 - Removes cost advantage for unregulated competitors
 - EU keeps this option on the table
 - Could also consider BCA for exports

Necessary or Nefarious?

- Environmentalists worry can't get major economy reductions without them
 - Hard to ask sectors to take on costs when significant shares of their reductions may be offset by increases abroad
 - Alternatives (exemptions, weak climate legislation) worse
- Trade community fears disguised protectionism
 - Potential conflicts with WTO obligations
- International community worries about common but differentiated responsibilities
 - Negotiations in WTO and UNFCCC already difficult

What's missing from the debate?

- Focus has been on targeted EITE sectors
- Need broader understanding about how climate policies implemented unilaterally (or sub-globally) affect all countries in the global trading system.
- Largest impacts are from the targeted carbon pricing itself, which generates
 - macroeconomic effects,
 - terms-of-trade changes, and
 - shifts in global energy demand and prices
 - changing the relative prices of energy-intensive and non-energy-intensive goods.

Our Contribution

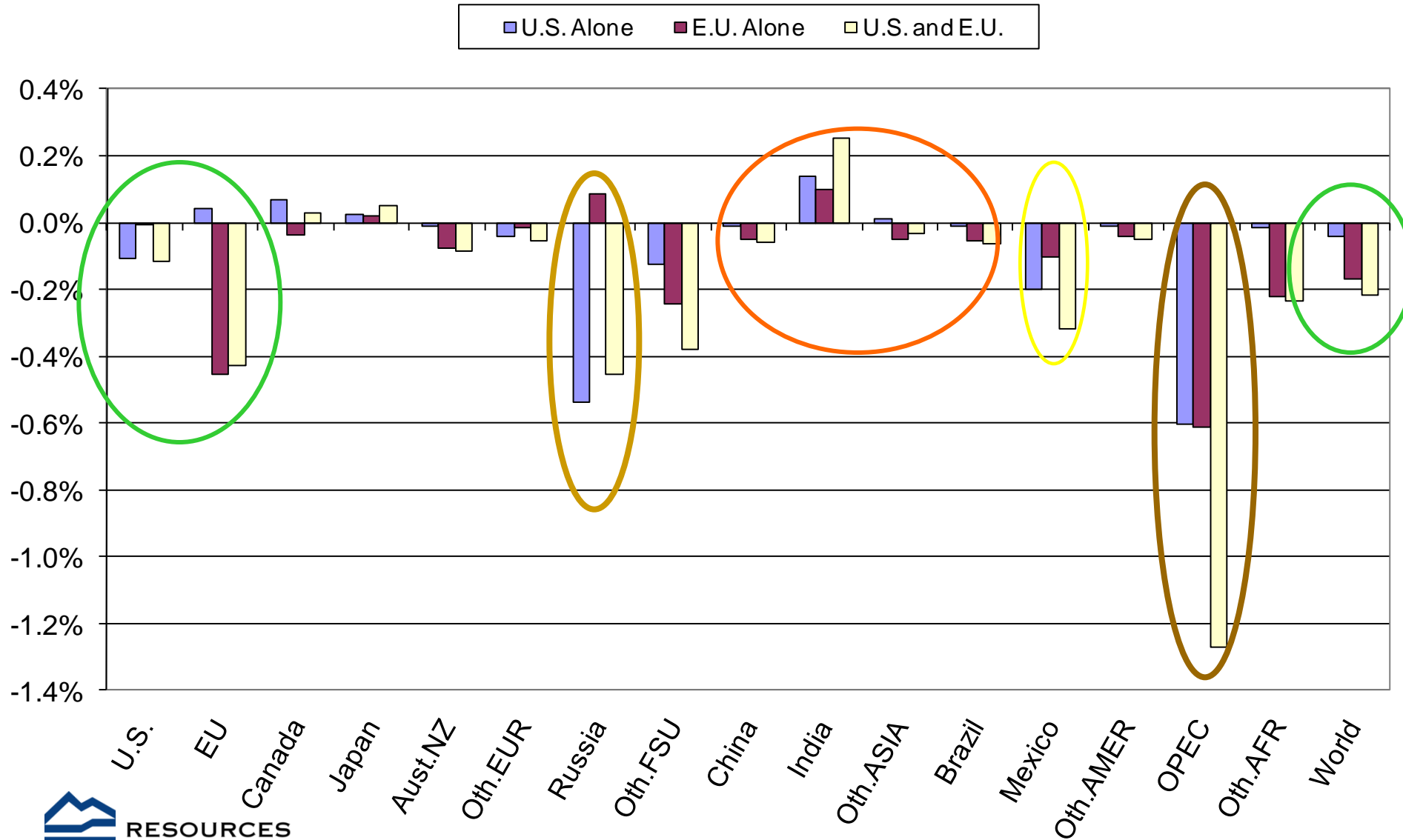
- Effects of climate policies implemented in EU and US on global distribution of economic and environmental outcomes
 - Using global multi-sector, multi-region computable general equilibrium (CGE) model
- How these outcomes may be altered by a variety of complementary policies aimed at addressing carbon leakage.

Policy Scenarios

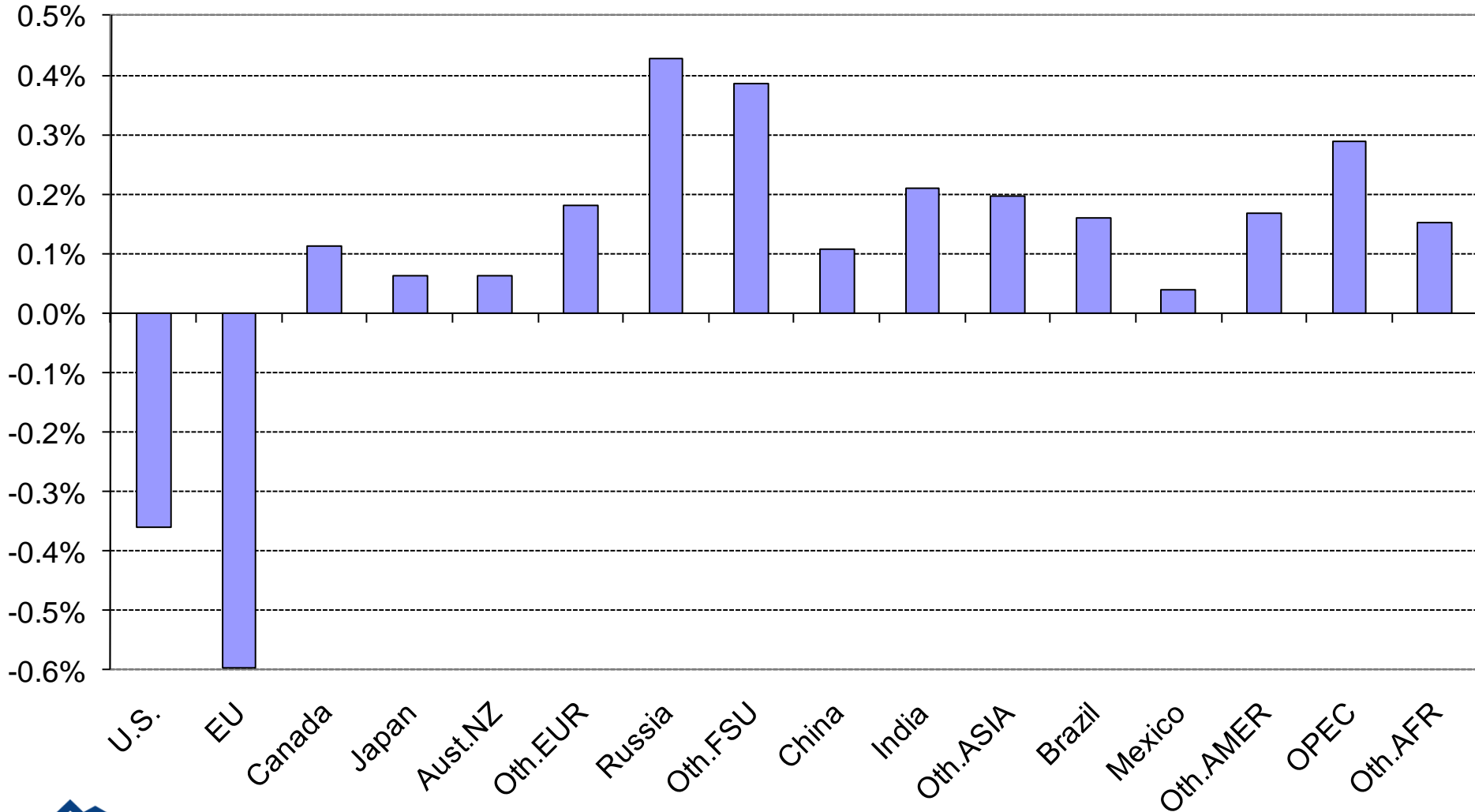
- US and/or EU reduce emissions by 20%
 - No international trading
- Different treatment of EITE sectors
 - Adjust cap to meet same global reductions

	AUCTION	OUTPUT	(REBATE)	TARIFF	(BTAX)	Global emission reduction
1	U.S.	U.S.	U.S.	U.S.	U.S.	4.0%
2	EU	EU	EU	EU	EU	2.4%
3	U.S.&EU	U.S.&EU	U.S.&EU	U.S.&EU	U.S.&EU	6.6%

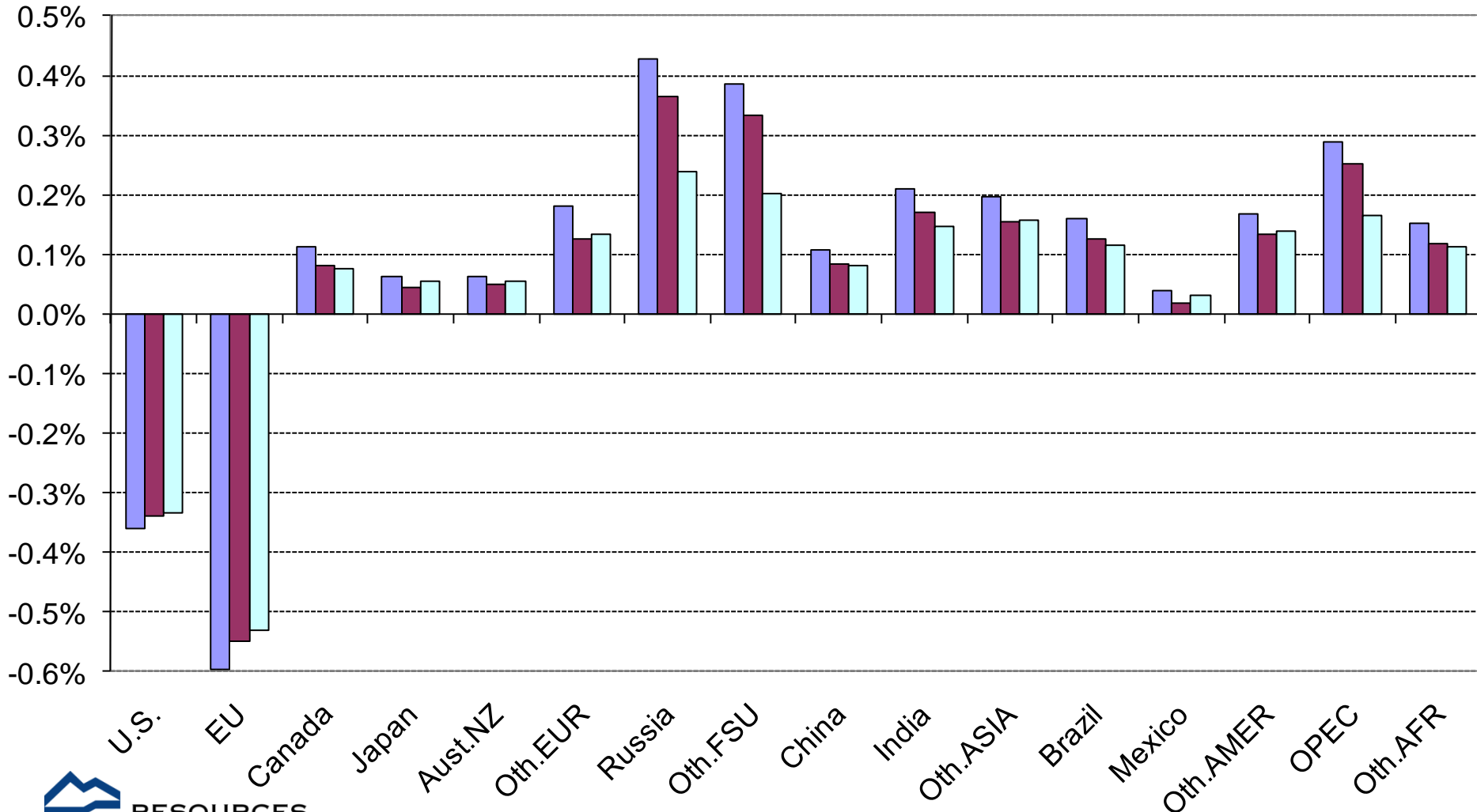
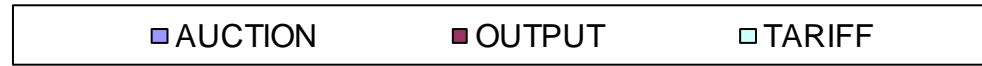
Consumption Effects of Auctioned Caps



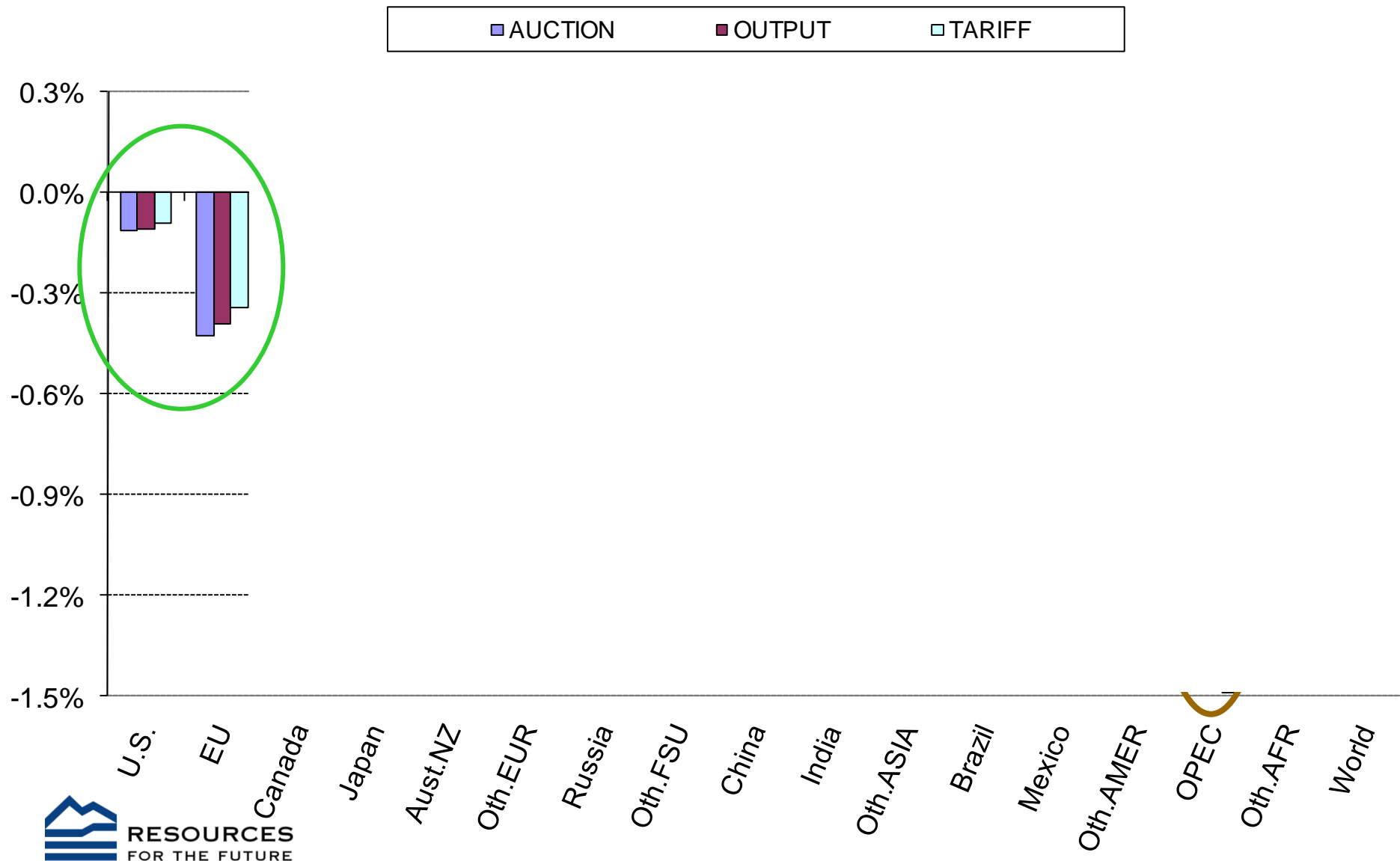
Percentage Change in Total Production, by Region (Joint Caps)



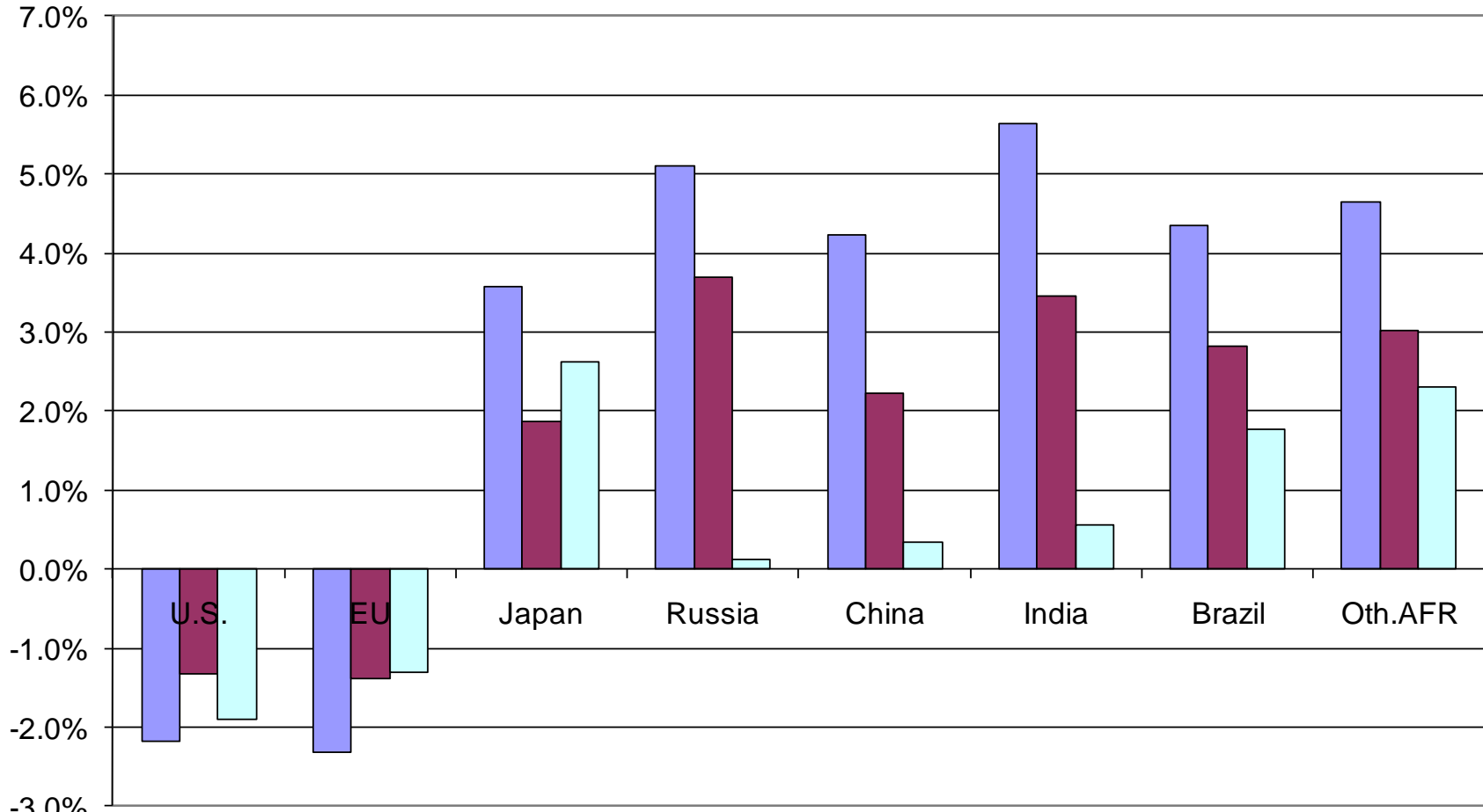
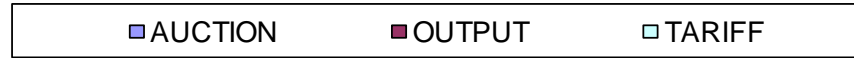
Percentage Change in Total Production, by Region (Joint Caps)



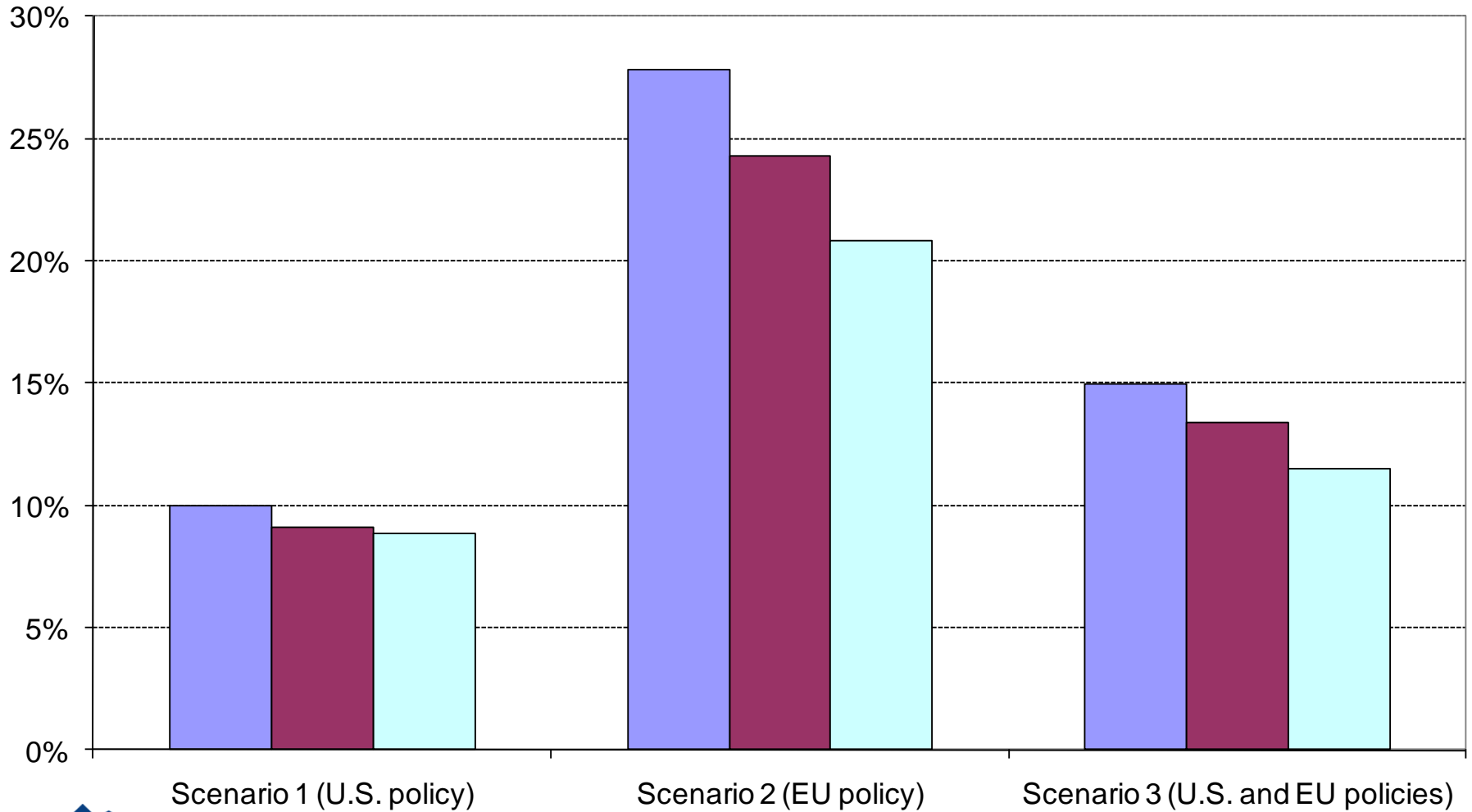
Consumption Effects of Joint U.S. and EU Action by Policy Option



Changes in Exports of EITE Products (Joint Policies)



Global Leakage Effects



Distribution of Leakage

- 40% of leakage to Annex B countries
 - Large share to Russia
 - More for US unilateral policy
- Effects of adjustment policies
 - hardly reduce leakage to other OECD countries, and also to Latin American and African countries.
 - The largest impacts on leakage are in Asian countries, former Soviet Union, and OPEC.

A Tempest in a Teapot (in a really big Tempest)?

- Main effects on global welfare, emissions, and leakage arise from the primary climate policies themselves
- Developing nations do not actually gain economically from developed country efforts to reduce GHGs.
- Nor do their sectors targeted specifically by anti-leakage policies necessarily lose, compared to a world without any climate policies.
- Ultimately, it is in all countries' interest to mitigate climate change as comprehensively and cost-effectively as possible, and the larger question is whether or not unilateral anti-leakage policies can help in that transition.

Thanks!

- Coauthors:
 - Chris Boehringer
 - Knut-Einar Rosendahl
- Funders:
 - Norwegian Research Council
 - ENTWINED Program of the Mistra Foundation

