

The Effects of Border Adjustment Policies on Developing Countries

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Presentation May 5th 2009

Trade and Climate Change:

Development Aspects of Climate Change Policies of OECD Countries

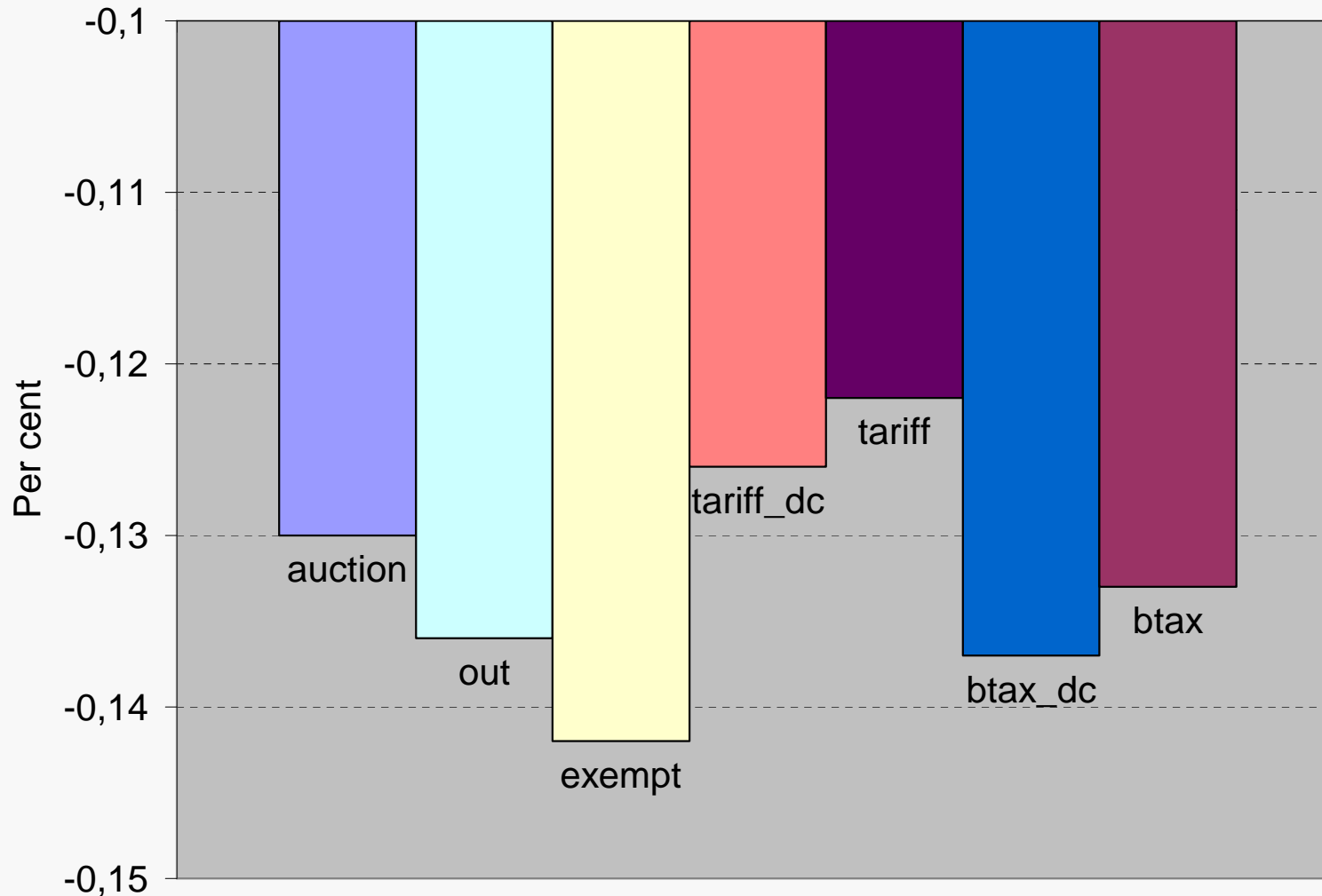
Introduction

- Purpose: Examine effects on welfare, trade and carbon leakage of unilateral U.S. carbon policies
 - Focus on policies towards Energy-intensive sectors (EIS)
 - ◆ Sensitive to carbon policies
 - ◆ Significant international trade volumes
 - Compare different climate policies, i.e., cap-and-trade system with:
 1. Full auctioning
 2. Output based allocation to EIS
 3. Export exemption/rebate for EIS
 4. Import tariffs for EIS
 - Based on embodied carbon (with/without indirect emissions from power production)
 5. Full border adjustment (Export exemption and Import tariffs)

Introduction (cont.)

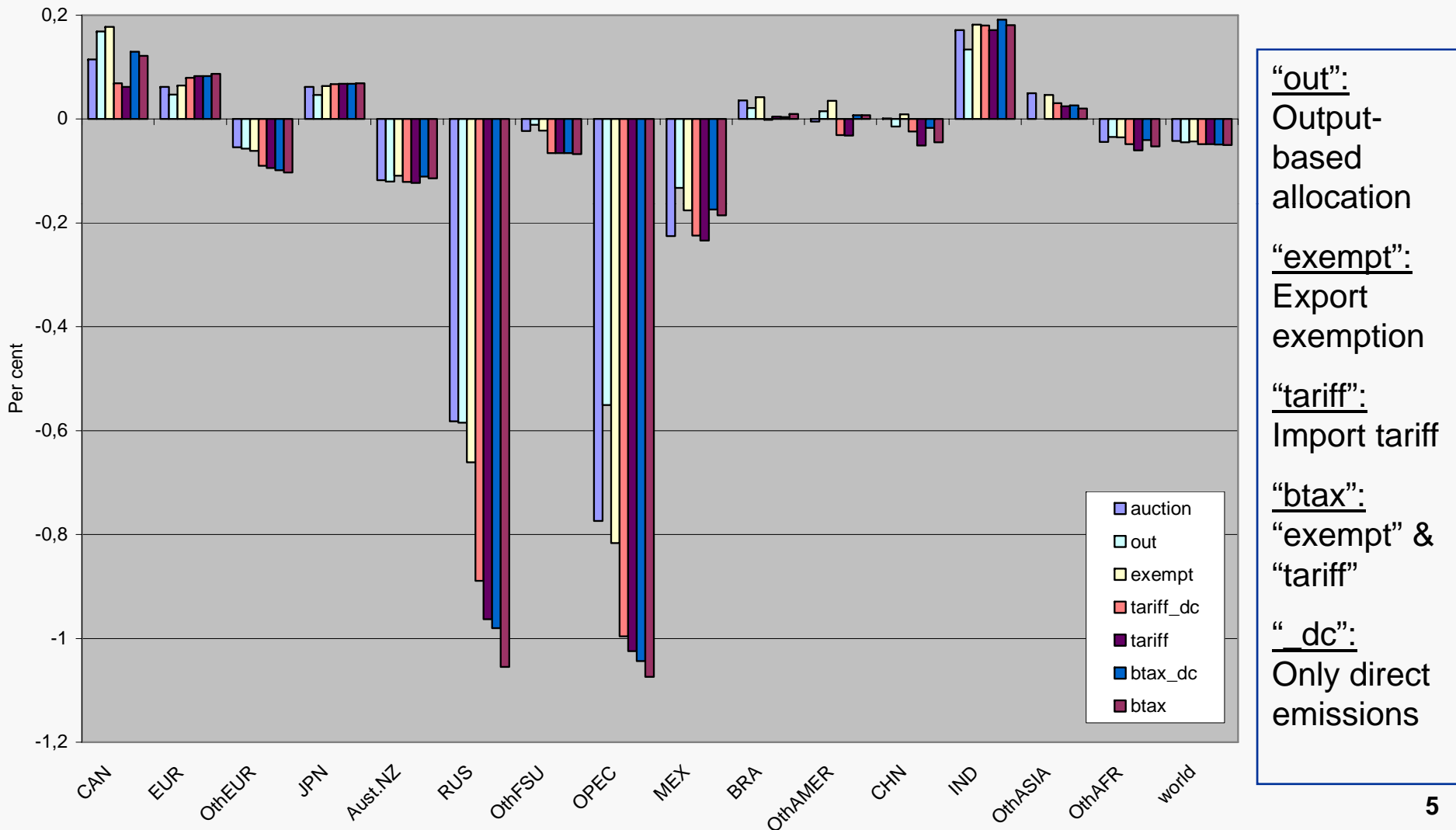
- Method:
 - Global economic model divided into 16 regions(/countries) and 12 sectors/goods
 - ♦ Mostly energy producing and energy intensive sectors
 - Supply and demand in each region and sector is modeled, and so is bilateral trade between regions
 - ♦ Based on GTAP7 database for 2004
- Assumptions:
 - No change in policies in other countries
 - ♦ No cap on emissions in Annex B
- NB! Results are preliminary

Welfare effects in the U.S. of different climate policies (20% cut in emissions)

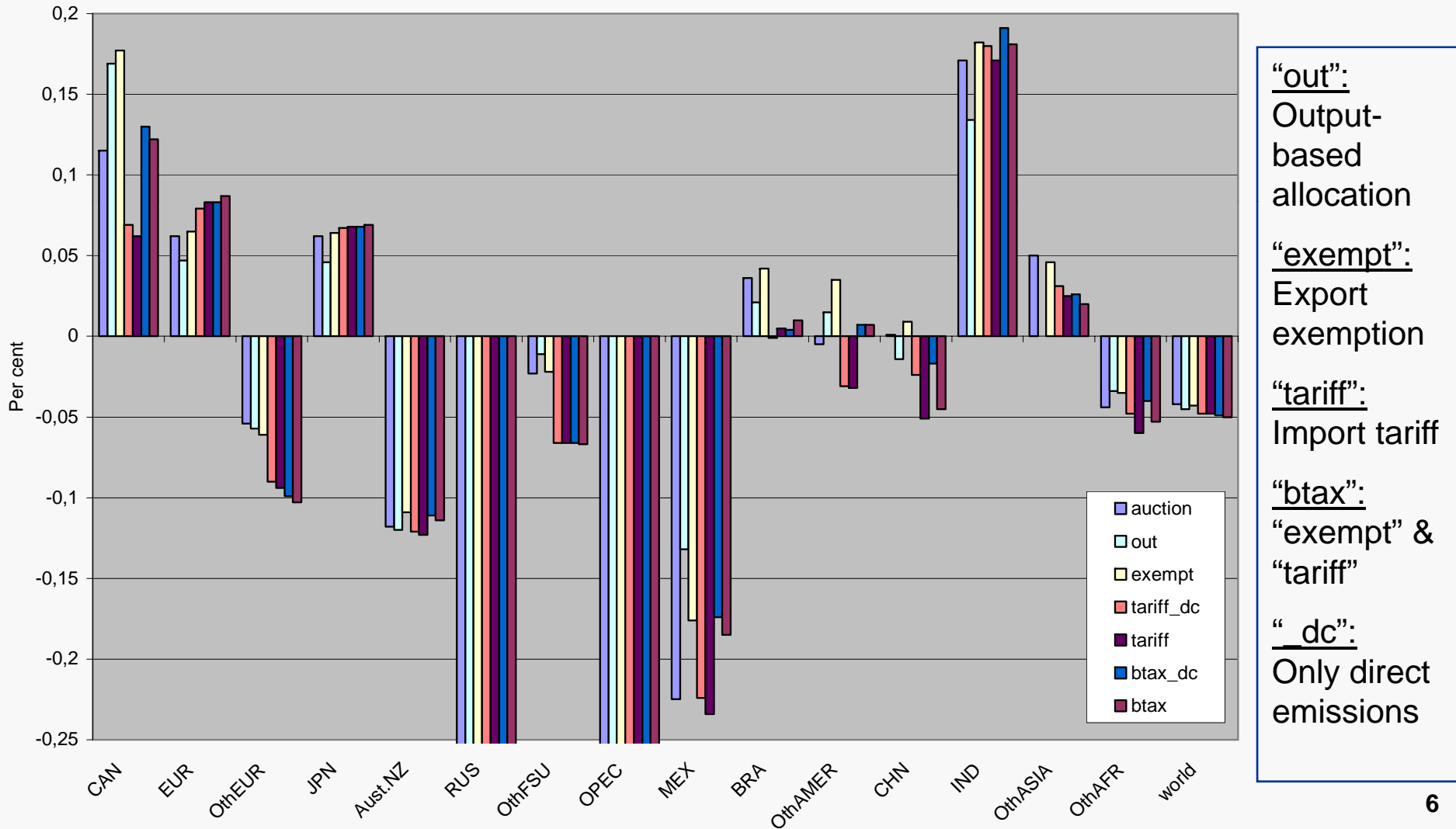


“out”:
 Output-based allocation
“exempt”:
 Export exemption
“tariff”:
 Import tariff
“btax”:
 “exempt” &
 “tariff”
“_dc”:
 Only direct emissions

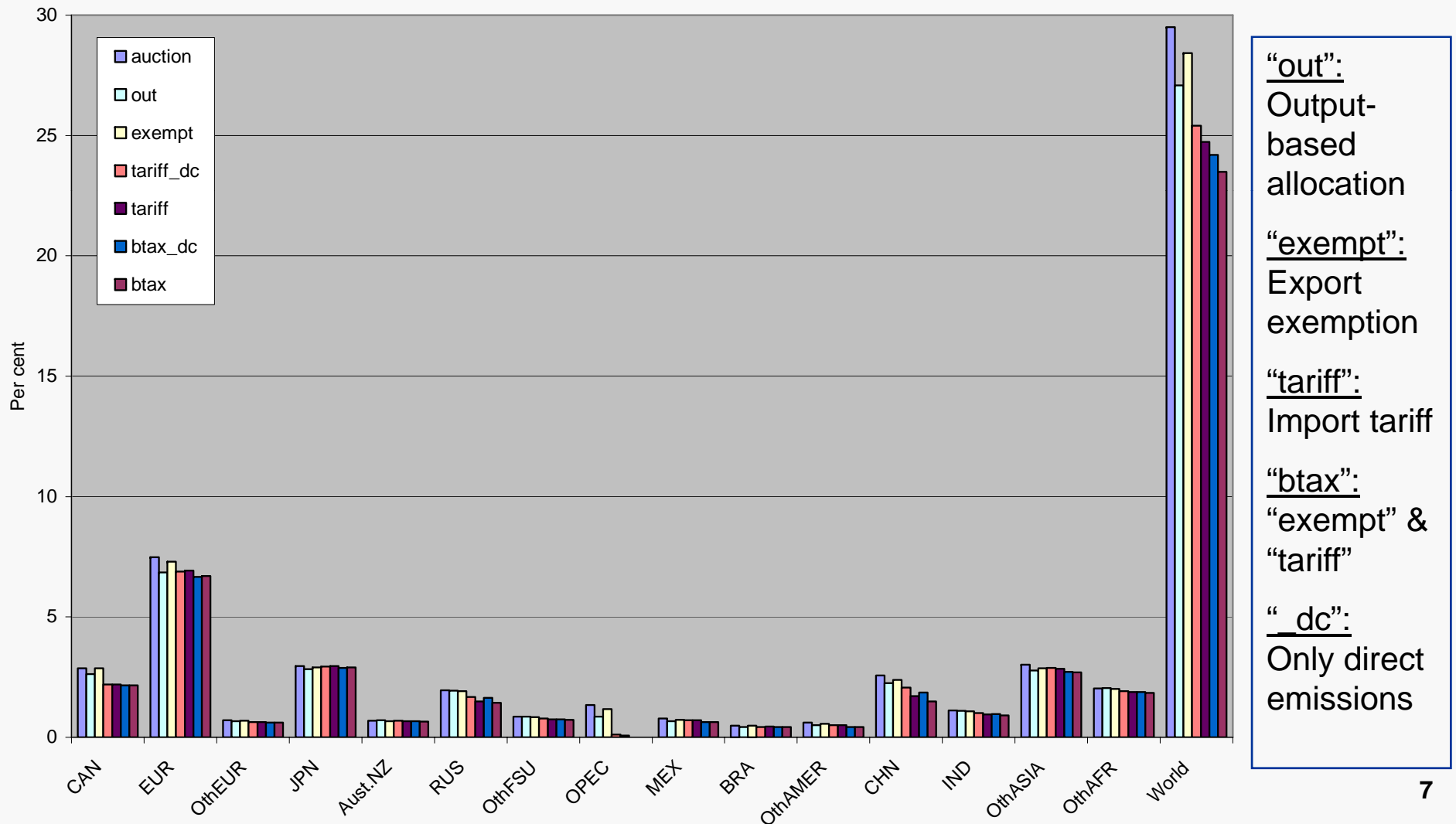
International welfare effects of different U.S. climate policies (20% cut in emissions)



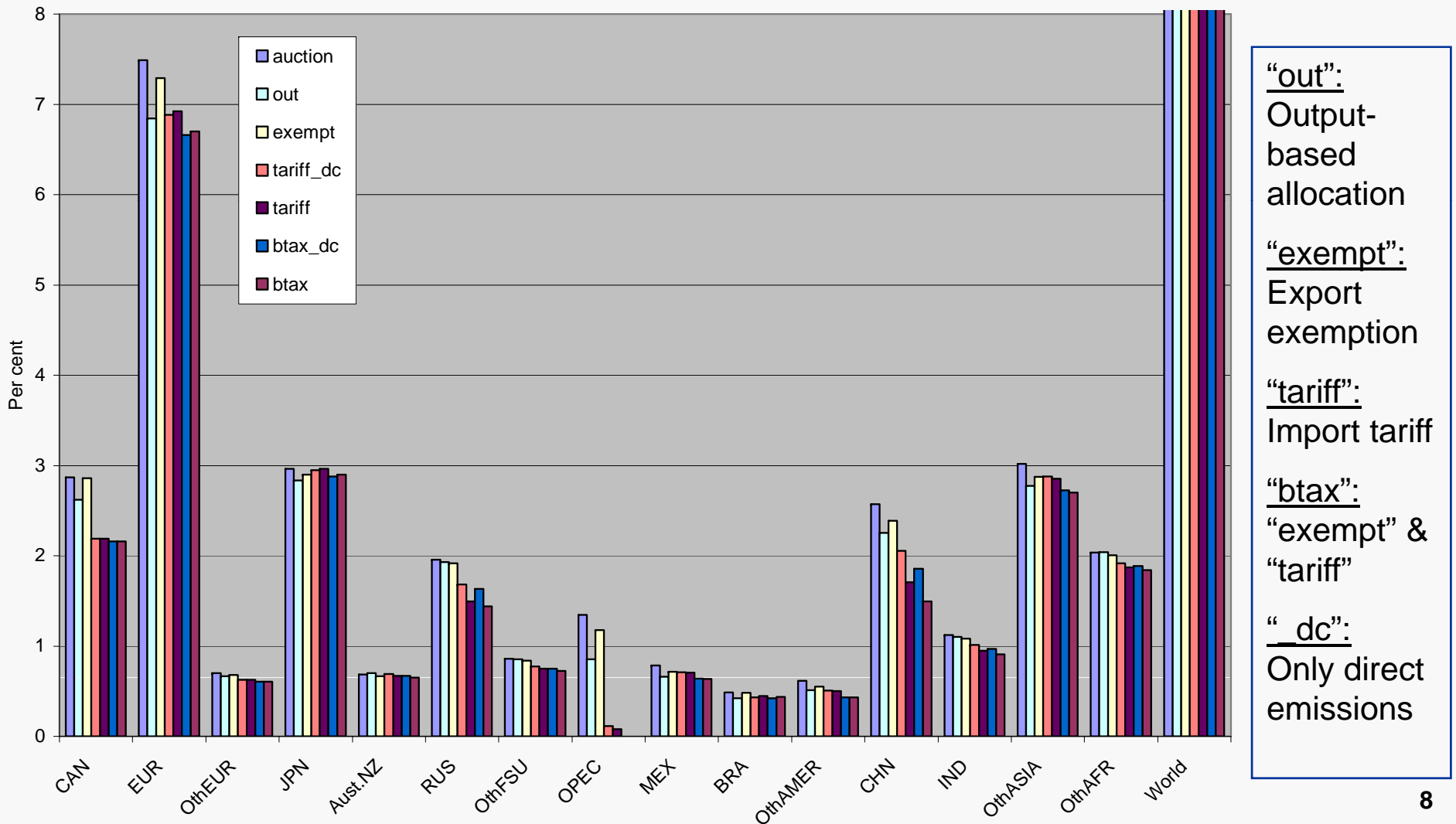
International welfare effects of different U.S. climate policies (20% cut in emissions)



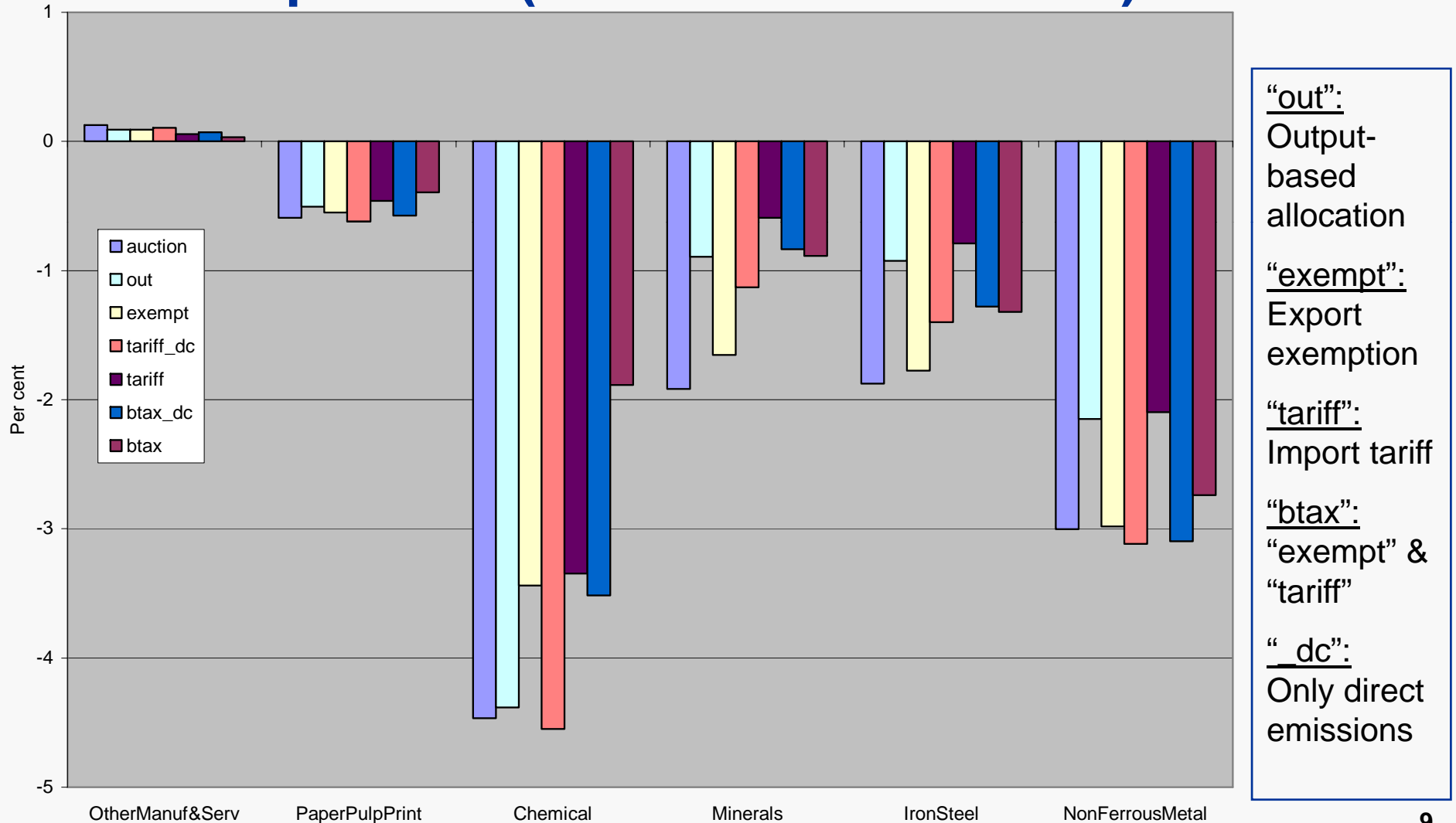
Effects on carbon leakage of different U.S. climate policies (20% cut in emissions)



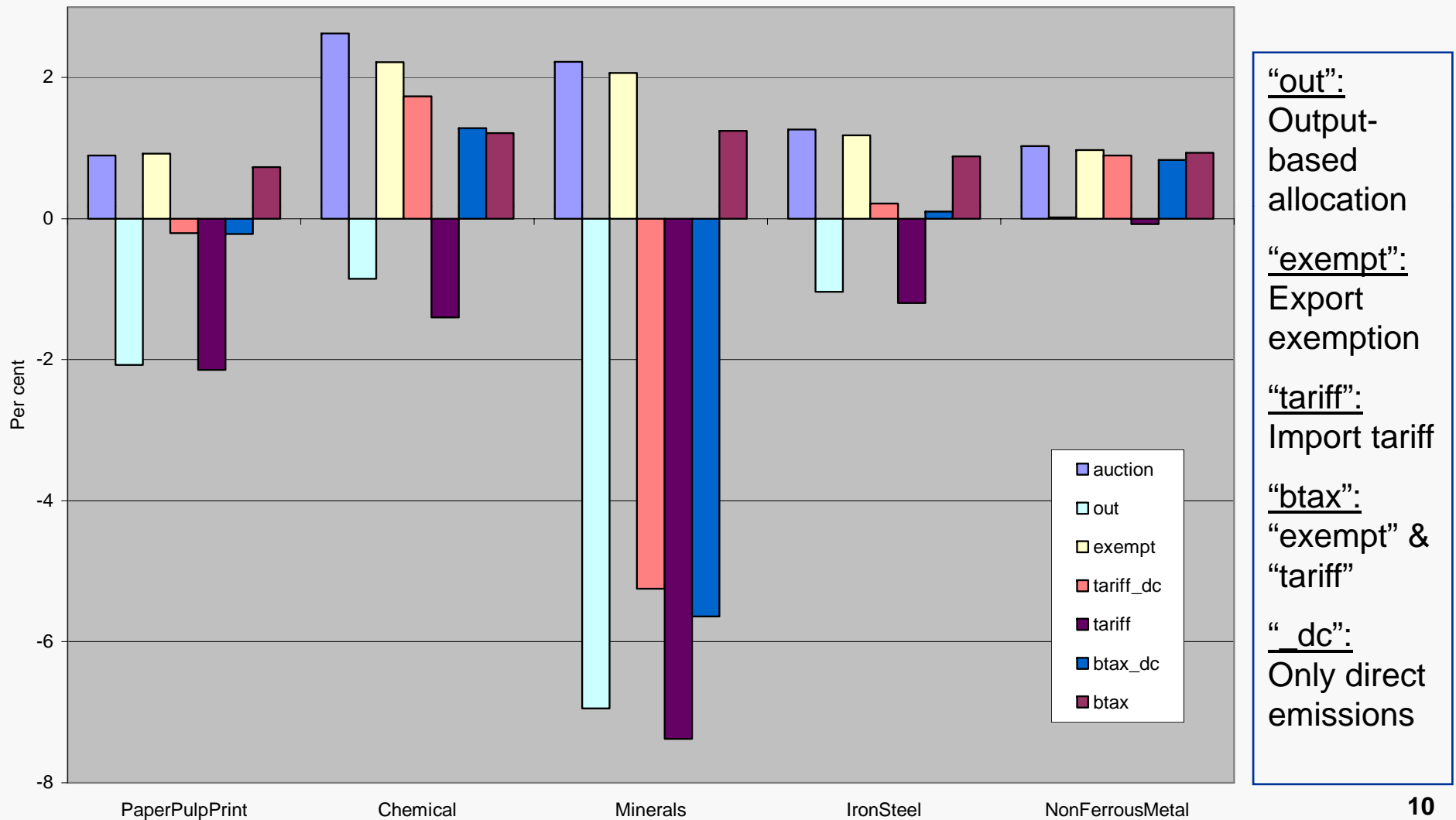
Effects on carbon leakage of different U.S. climate policies (20% cut in emissions)



Effects on U.S. production of different U.S. climate policies (20% cut in emissions)



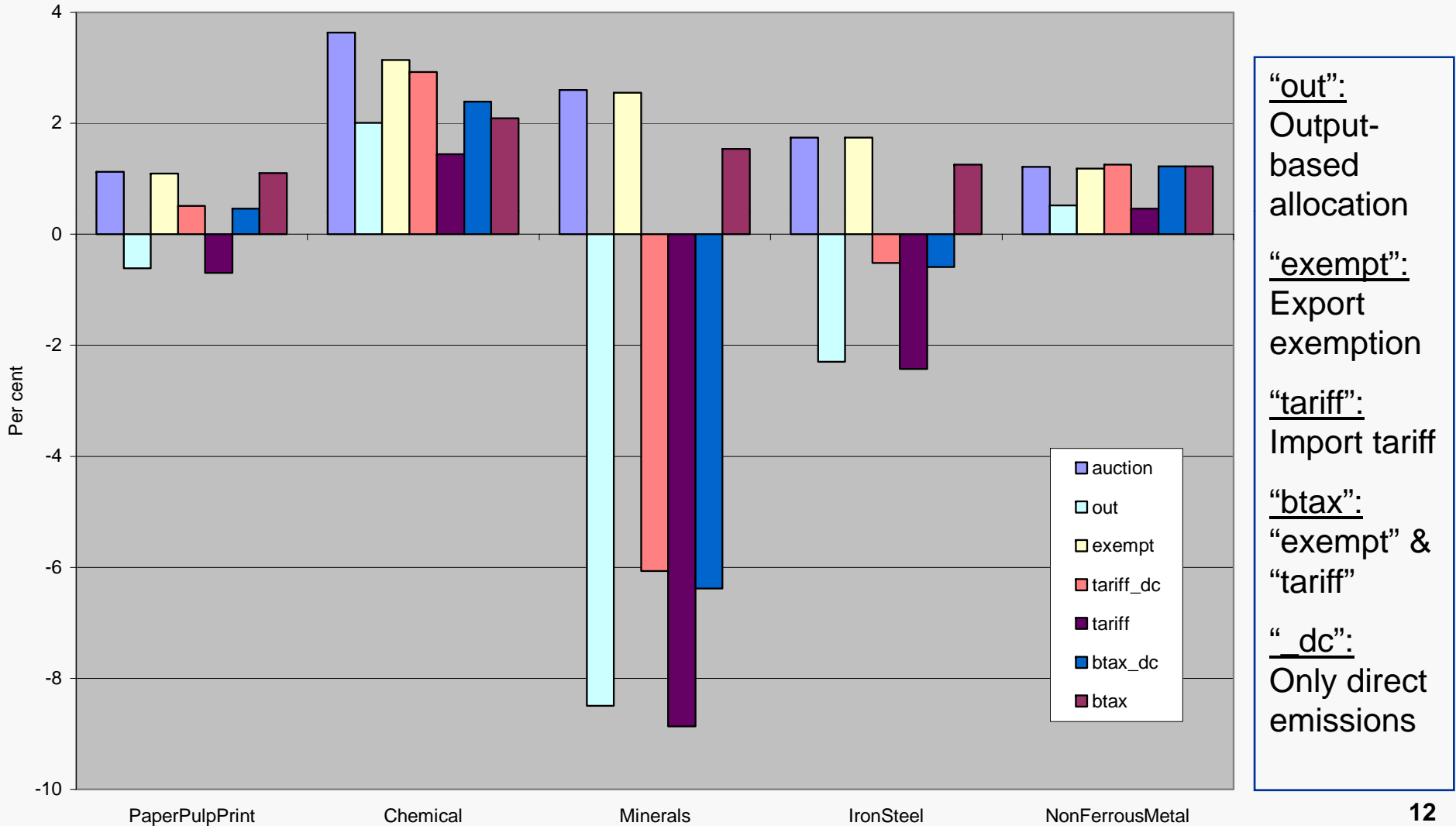
Effects on Chinese exports of different U.S. climate policies (20% cut in emissions)



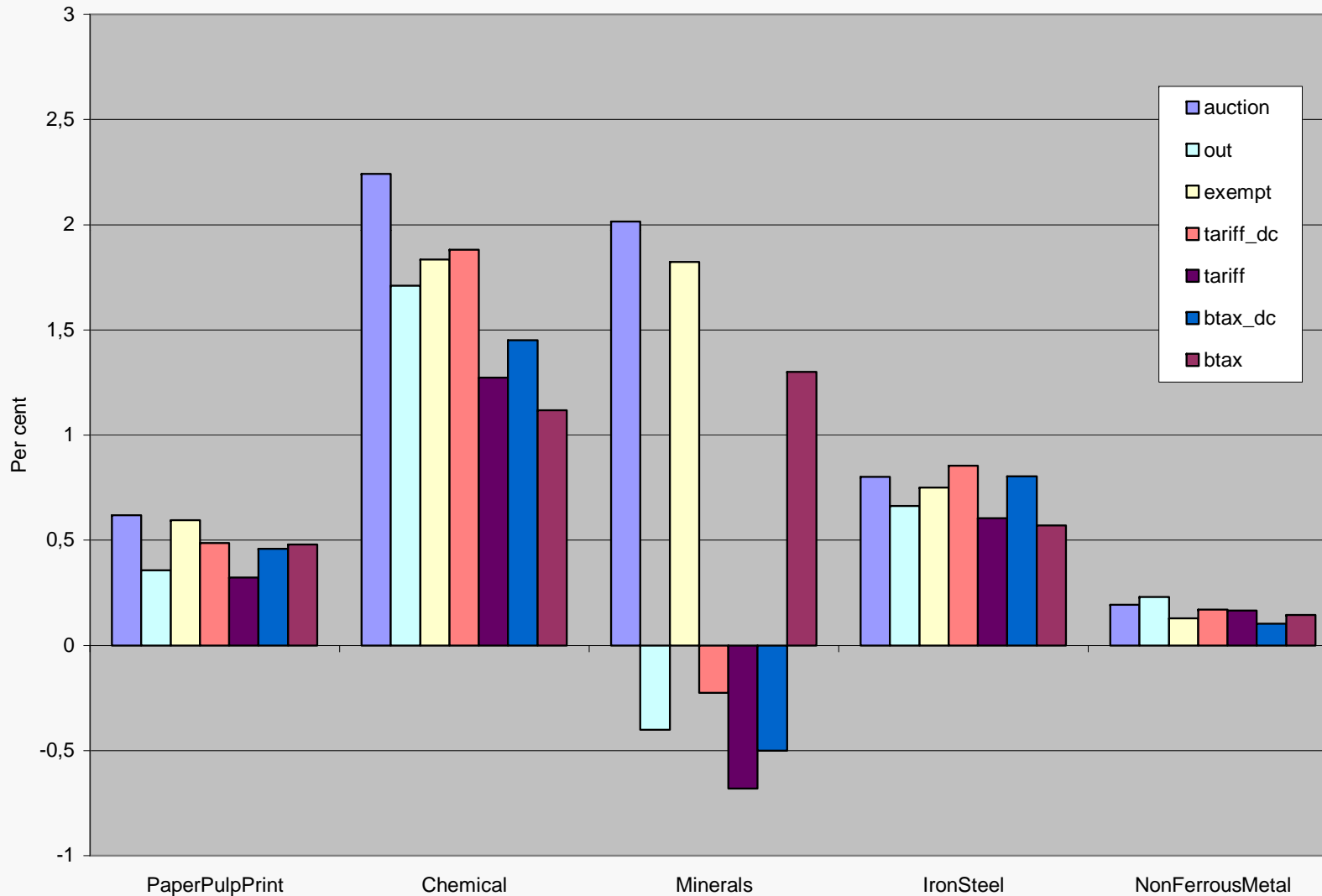
Some conclusions

- Total welfare effects are significantly affected by impacts in fossil fuel (FF) markets
 - FF exporters lose and FF importers gain
 - FF effect is strengthened by tariffs and reduced by output-based all.
- Majority of leakage takes place in other OECD countries
 - Coordination of OECD policy reduces leakage problem
 - Border adjustment policies more effective than output-based all.
- Trade in energy-intensive goods is significantly affected by choice of climate policy

Effects on Indian exports of different U.S. climate policies (20% cut in emissions)



Effects on Other Asian exports of different U.S. climate policies (20% cut in emissions)



“out”:
 Output-based allocation

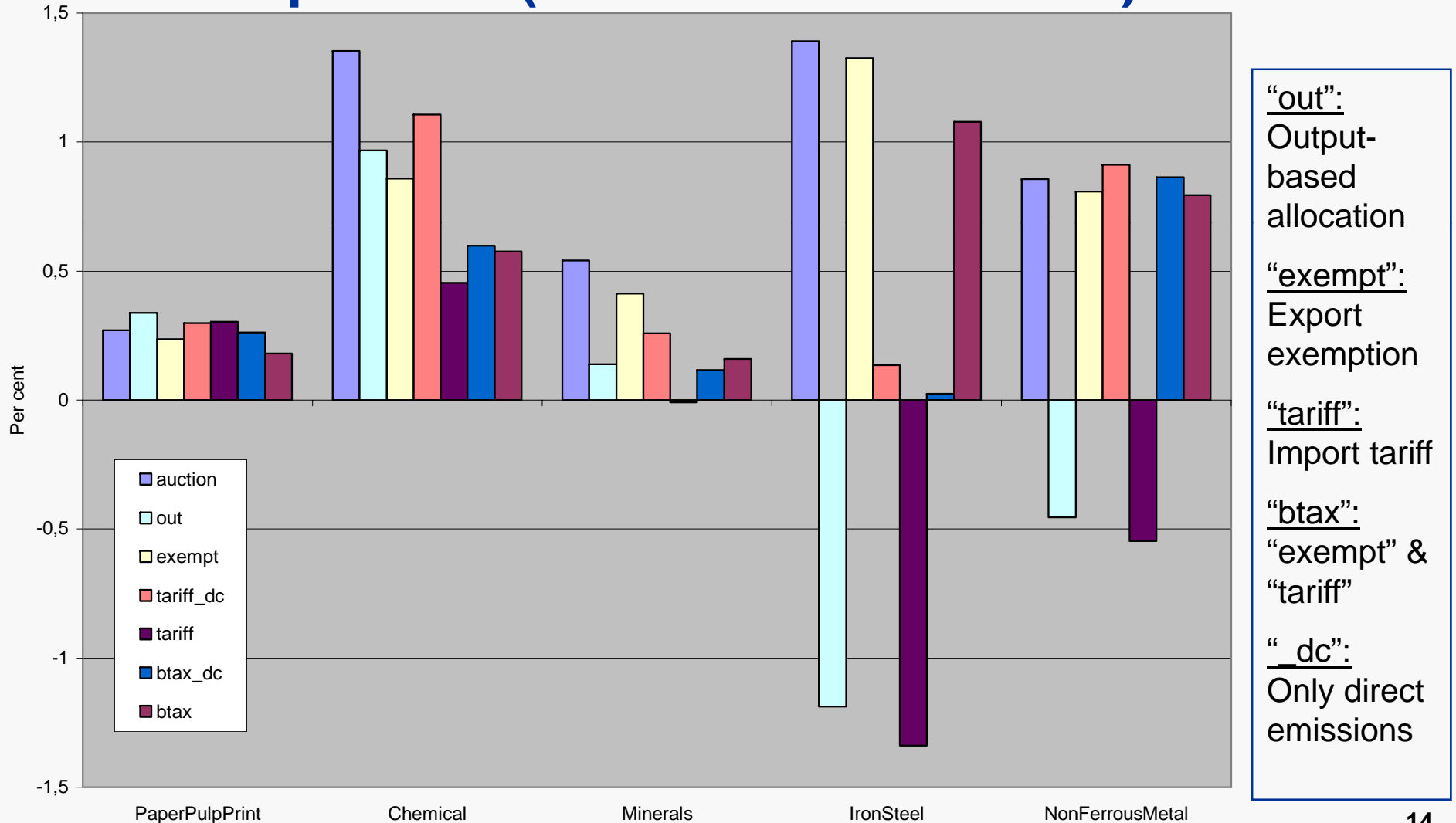
“exempt”:
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 Only direct emissions

Effects on Other African exports of different U.S. climate policies (20% cut in emissions)



Effects on Brazilian exports of different U.S. climate policies (20% cut in emissions)

