TOWARDS NET-ZERO EMISSIONS: IMPACTS ON TRADE AND INCOME ACROSS AND WITHIN COUNTRIES

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June 10, 2022

HOW ARE WE ANALYZING THE POTENTIAL IMPACTS OF CC ON TRADE AND TRADE ON CC?

Global Trade and Regional Integration Unit’s work on trade and CC:

- “The Trade and Climate Change Nexus : The Urgency and Opportunities for Developing Countries” Brenton, Chemutai (2021)
- Climate Change Development Reports (10+ countries this FY)
- “Reshaping Global Value Chains in Light of COVID-19: Implications for Trade and Poverty Reduction in Developing Countries” (2022) by Brenton, Ferrantino, Maliszewska
- “Pandemics, Climate Mitigation and Reshoring: Impacts of a Changing Global Economy on Trade, Incomes and Poverty” (2022) by Chepeliev, Maliszewska, Osorio-Rodarte, Seara e Pereira and van der Mensbrugghe

Several mitigation policies are emerging; how are we analyzing the potential impacts?

- Methodology and scenarios
- Impacts on income, trade an GVCs
- Linking global trade with global energy model and focusing on distributional aspects using microsims

The modelling work in the CCDRs

Implementation of NDCs

2035

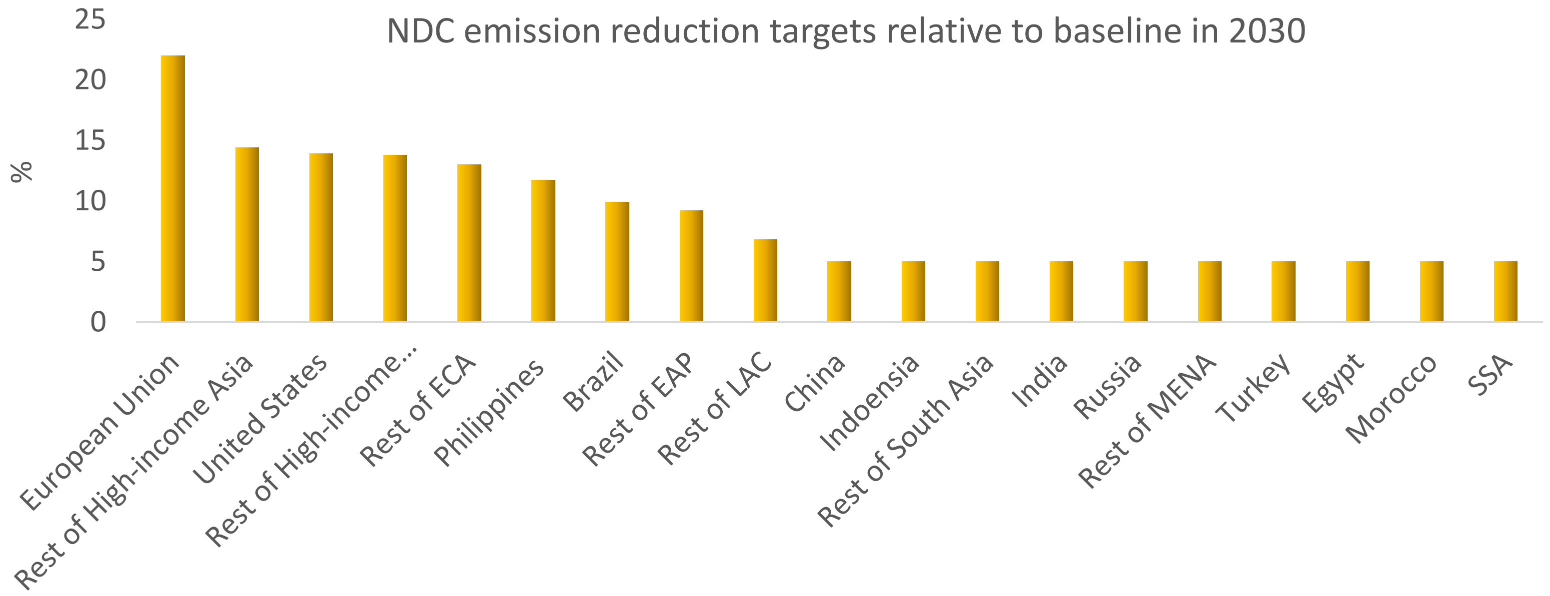
For countries with relatively low ambitions in relation with current policies, a minimum of $30/tCO2 is imposed in 2035, further growing at 5% per year.

NDC emission reduction targets

2030

Carbon Price trajectory is assumed

For EU, the carbon price is growing at 3% per year post-2030 (due to the relatively high initial ambition).



- Carbon price is imposed on all emitting agents, including final consumers.
- EU Green Deal is incorporated in this scenario

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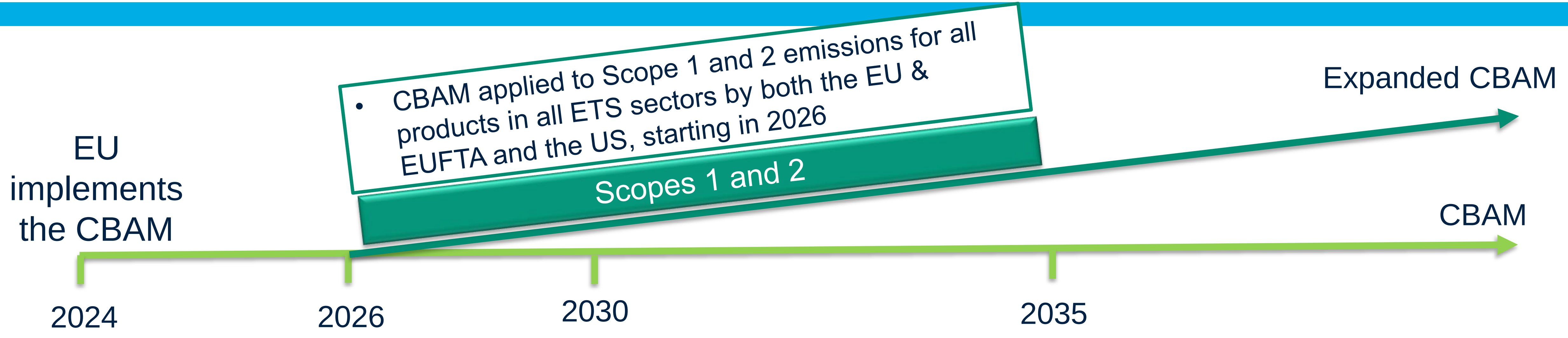
Baseline scenario

- Current policies (with carbon pricing in selected countries, where it currently exists)
- Emission trajectories calibrated to the SSP2 baseline
- Carbon prices are implemented for ETS sectors in EU, Rest of high-income countries (UK, Canada, etc.) and China (relatively low price based on the carbon price forecasts till 2030 and beyond)
- Carbon price for these selected cases is imposed on ETS sectors only.

ETS Sectors: cover carbon dioxide (CO_2) emissions from

- electricity and heat generation,
- energy-intensive industry sectors including oil refineries, steel works, and production of iron, aluminum, metals, cement, lime, glass, ceramics, pulp, paper, cardboard, acids and bulk organic chemicals,
- commercial aviation within the European Economic Area;

Implementation of the EU CBAM



Scope 1

- Direct emissions
- Includes the ETS sectors of:
  - Steel
  - Cement
  - Electricity
  - Fertiliser
  - Aluminium
- Consistent with the current CBAM proposal

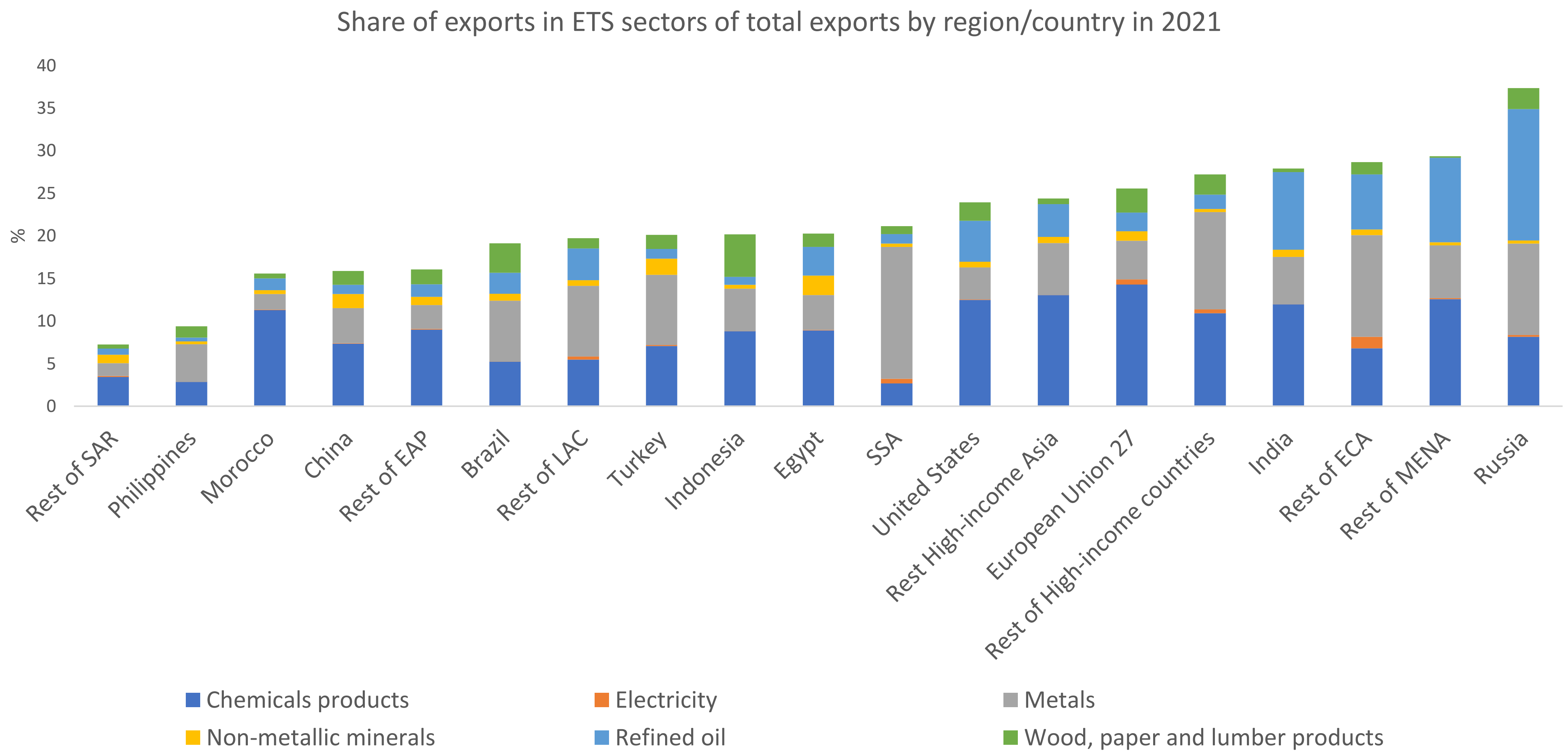
Scopes 1 and 2

- Included indirect emissions
- Sectoral coverage is extended to all ETS sectors, including the additional sectors of:
  - Wood, paper and lumber products
  - Refined oil
  - Non-metallic minerals

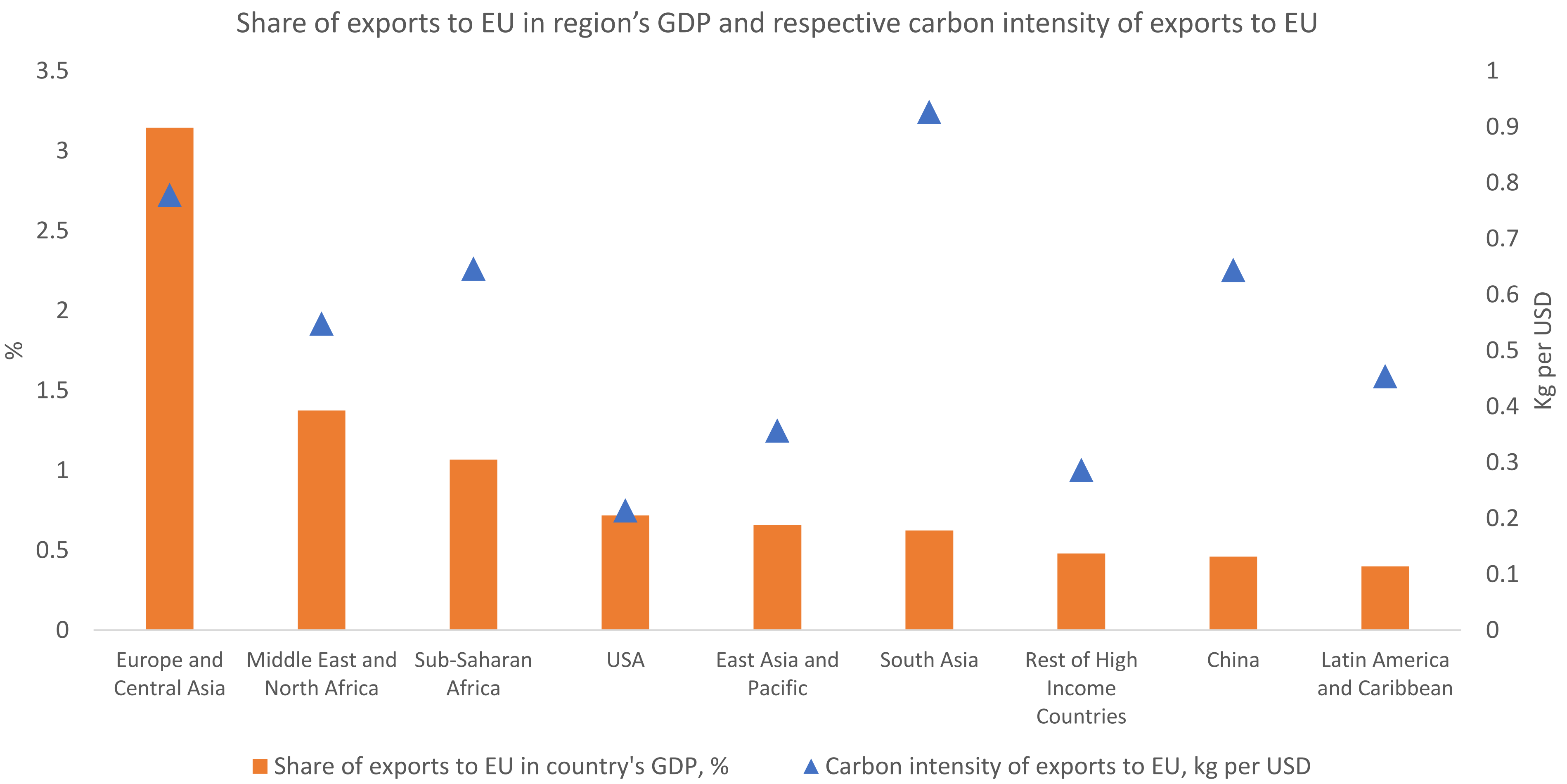
Scopes 1, 2, and 3

- All ETS sectors
- All indirect emissions in the supply chain

The regions of MENA and ECA export a higher share of ETS sectors of its total exports. With the implementation of environmental policies, such as NDCs or CBAM, these regions may be impacted more negatively



The degree of each country carbon intensity and their reliance on related exports will determine the impact that mitigation measures may have



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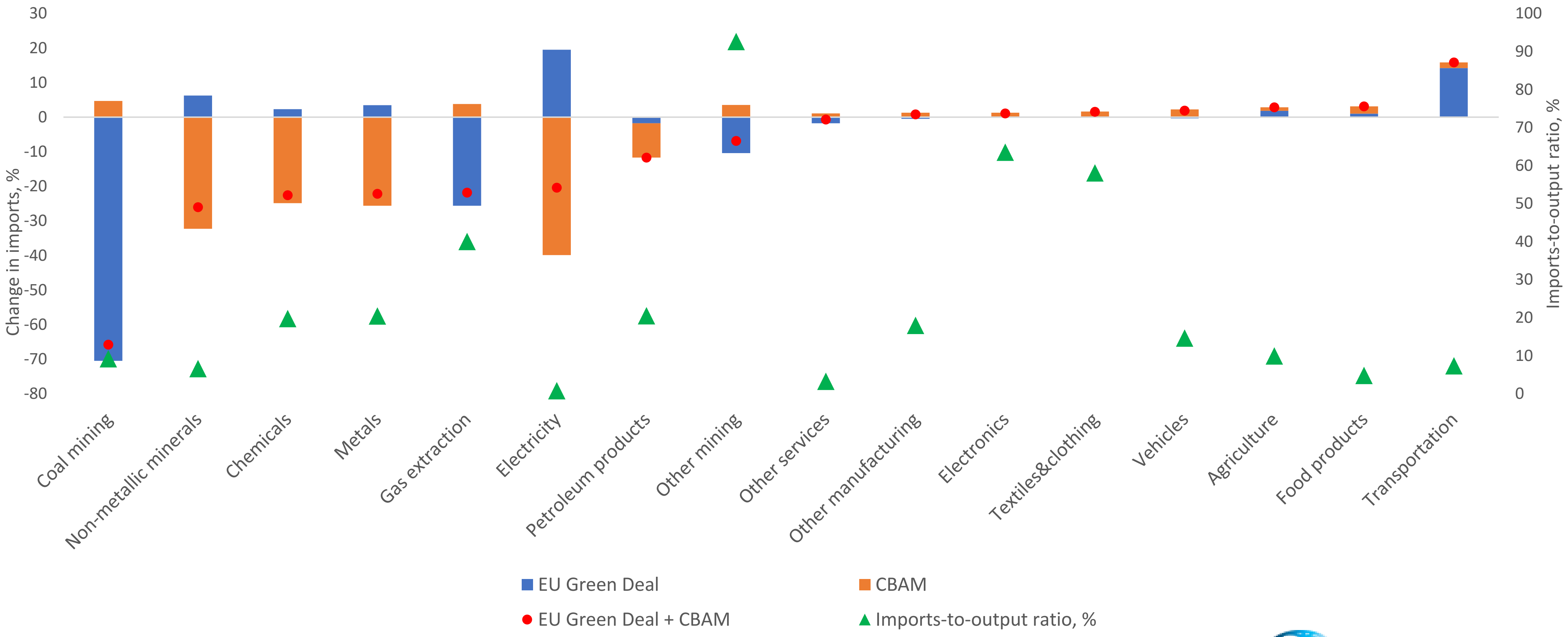
ETS, such as non-metallic minerals, chemicals, metals, and high carbon intensive power energy, see the highest declines with the implementation of EU Green deal and CBAM

Impacts of the EU Green Deal and Border Carbon Adjustment Mechanism on EU imports by sectors, % change in 2030 relative to scenario with NDCs.



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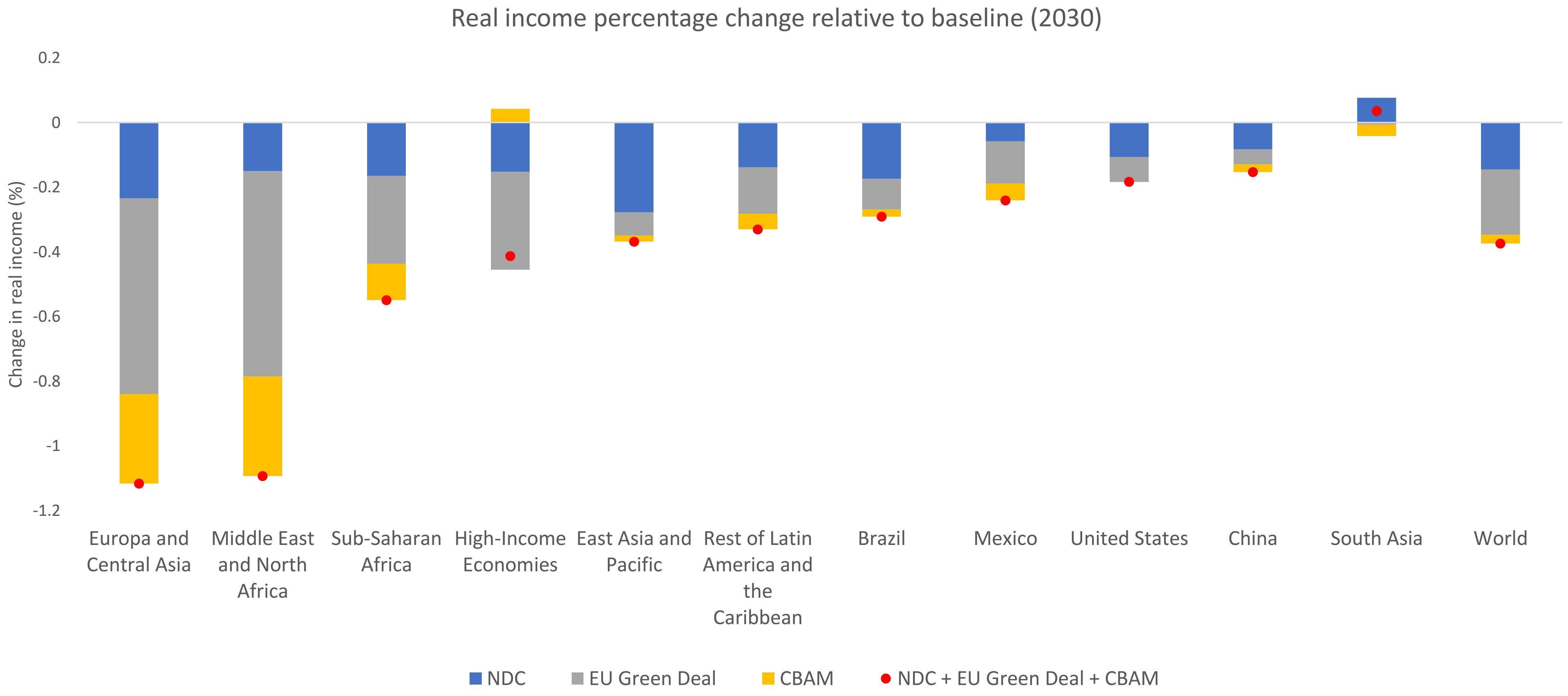
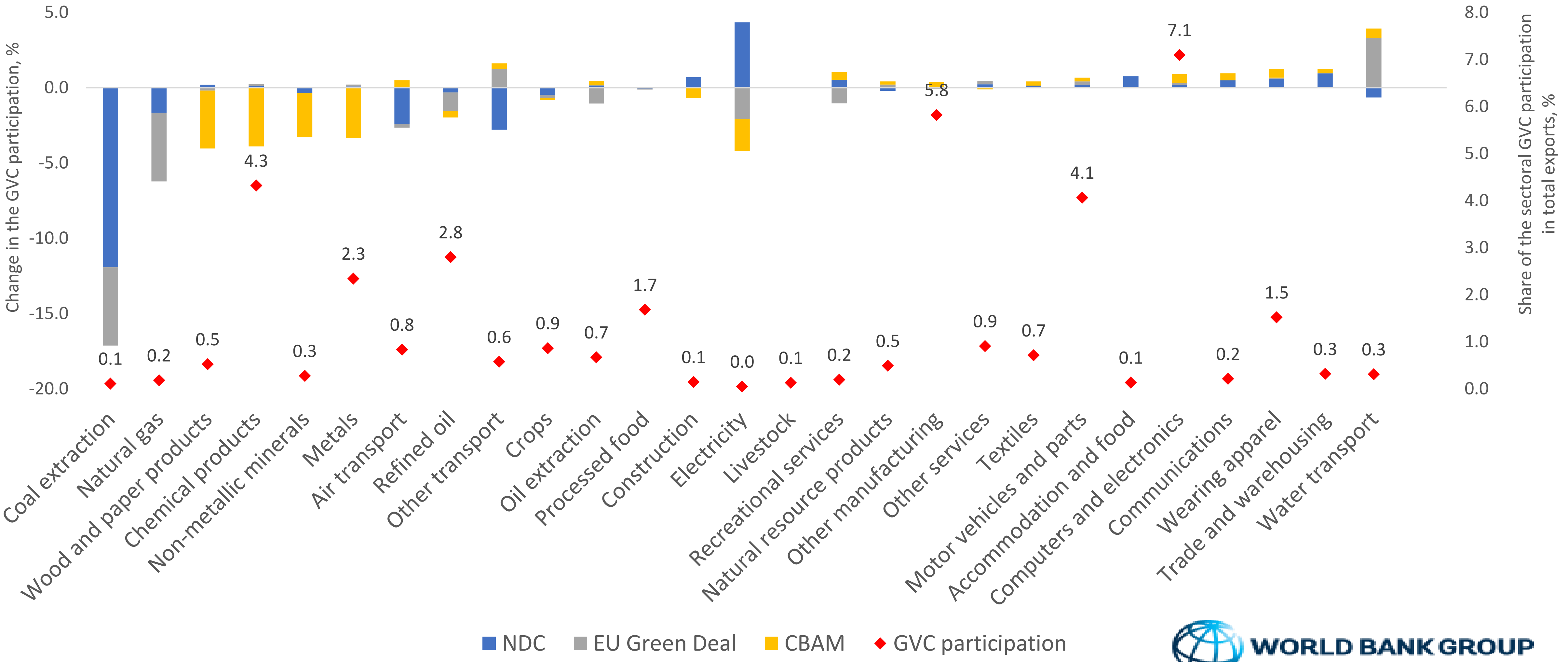
Income effects: ECA and MENA suffer the most, particularly due to EU Green Deal and CBAM. This is the result of a high dependency on exports in ETS sectors and high shares of trade with the EU



New opportunities will arise for countries that are relatively carbon efficient in key tasks along GVCs

Impacts of climate mitigation policies on GVC participation by sectors (global average), % change in 2030 relative to the post-COVID baseline



Source : Chepeliev et. al. (2022)

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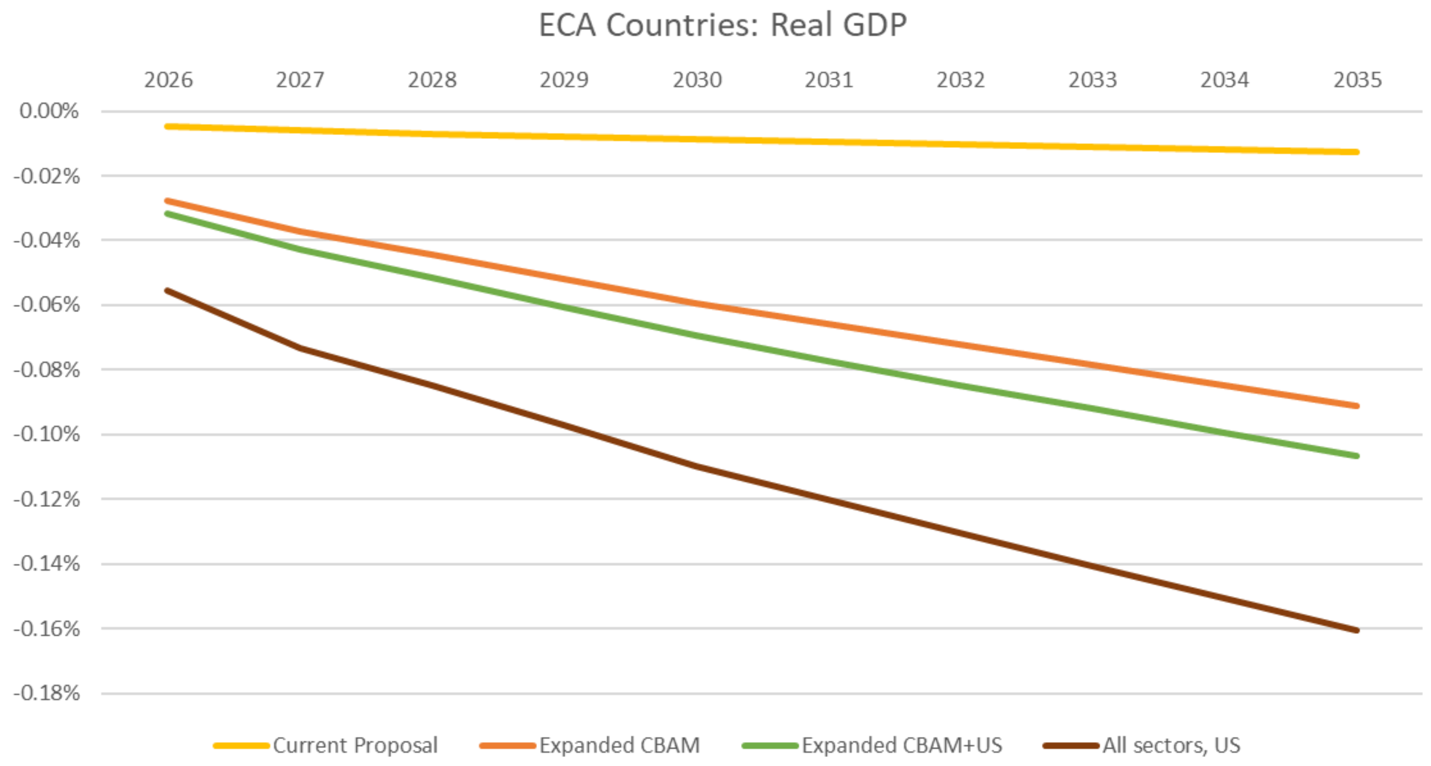
ECA: macro-level impacts of CBAM will be modest, but will grow as CBAM scope expands

Especially in its initial phase of implementation CBAM directly impacts a very limited set of products, which represent a small share of any country's exports much less overall output. CBAM could expand in three ways: i) product / sector scope; ii) emissions scope; iii) expanded 'CBAM club'

Results from regional CBAM modelling



Notes:

- "Expanded CBAM" scenario covers additional products and Scope 2 emissions as per Slide 5
- "Expanded CBAM+US" scenario expands CBAM coverage from EU to also include US; results shown here are based on "expanded CBAM" for products and emissions scope coverage
- "All sectors, US" scenario expands product scope to cover all imports, scope 1 and 2 emissions, and EU + US coverage

Source : Dudu et. al. (2022)

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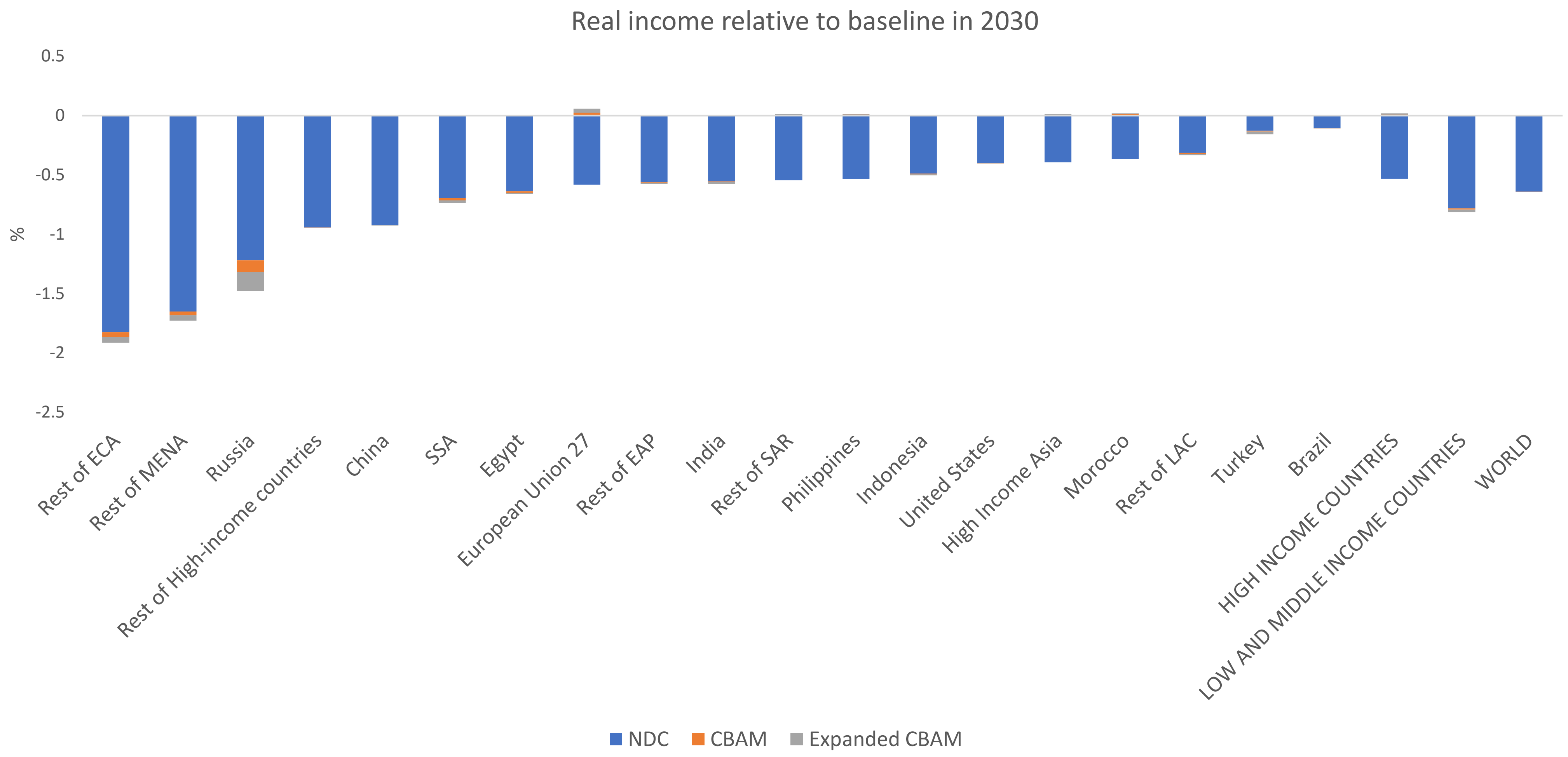
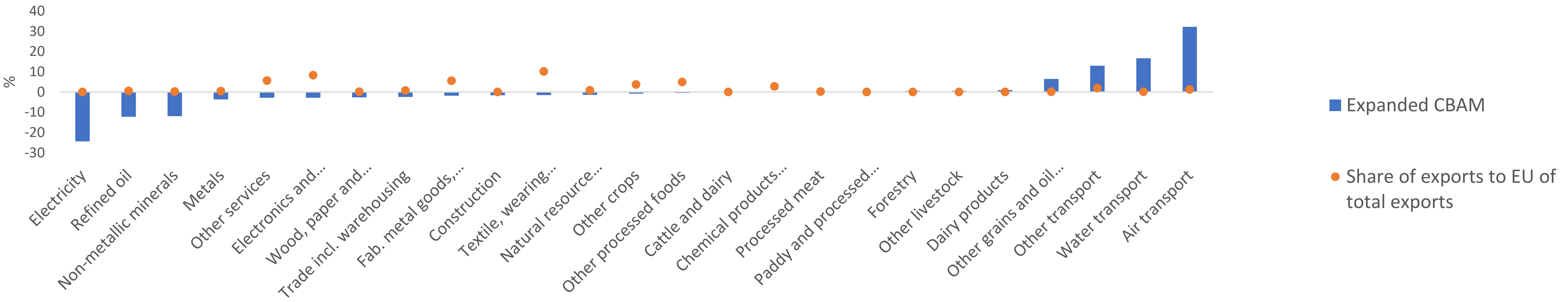
Key income are still driven by NDCs even under expanded CBAM scenario

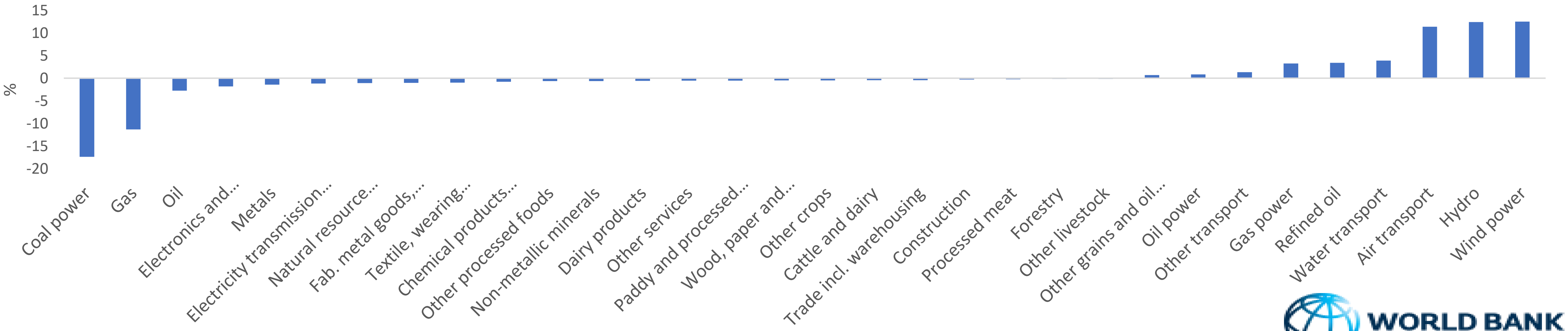


The case of Morocco with expanded CBAM

Morocco's exports to EU, expanded CBAM scenario relative to baseline in 2030, and share of export to EU in 2021



Morocco's production, expanded CBAM scenario relative to baseline in 2030



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SUMMARY OF FINDINGS

- Depending on how policies are implemented, climate mitigation measures in advanced economies could result in reshaping of GVCs away from carbon-intensive activities.

- Climate policies would impact developing countries differently, depending on the extent of carbon-intensive sectors as part of their economies, with countries in Europe and Central Asia potentially the most vulnerable.

- A stylized modeling of Carbon Border Adjustment Mechanism (CBAM) suggest new opportunities will arise for countries that are relatively carbon efficient in key tasks along GVCs in sectors such as computers and electronics, motor vehicles and parts, and other light manufacturing.

- The design and implementation of carbon border adjustment schemes will be critical in determining their impact on trade and incomes in developing countries.

- Macro impacts are small, but select products, sectors, locations will be significantly negatively affected

- The impacts increase with the expansion of mitigation policies to expand sector and country coverage