

Weekly Summary

Economics of Climate Change

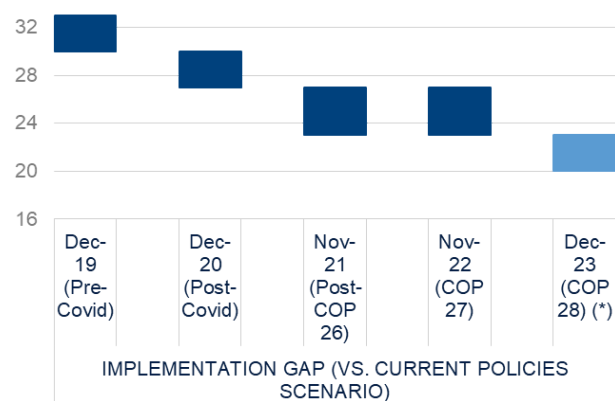
January 19, 2024

Climate policies: Widening range and enhanced stringency, but more is needed

The analysis of climate targets and policies show increasing ambition and broader and more stringent tools; however, global net-zero target is out of range, and across countries, wide differences remain. Broader policy tools with enhanced stringency are needed.

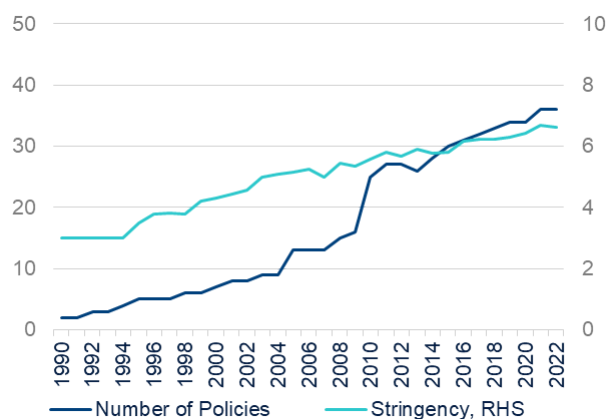
Climate Policies, Work in Progress. The better than expected outcome of COP28¹ should represent a not negligible progress towards the Paris Agreement goal if this is fully implemented, contributing to shrinking the implementation gap between the (updated) current policies scenario and the net-zero pathway (**Figure 1**). In this vein, the number and stringency of climate policies steadily increases according to OECD's analysis (**Figure 2**).

Figure 1. **WORLD. IMPLEMENTATION GAP FOR NET-ZERO CLIMATE GOAL (2030 GAP, GtCO₂E)**



(*) likely achievable on top of current NDCs based on current signatories. See "COP28 initiatives will only reduce emissions if followed through", CAT Dec-23. Source: BBVA Research from [Climate Action Tracker](#)

Figure 2. **OECD & PARTNERS. CLIMATE POLICIES. ADOPTION & STRINGENCY. MEDIAN, POLICIES AND STRINGENCY RANK (1-10)**



Source: BBVA Research from [IPAC | International Programme for Action on Climate | Dashboard - OECD](#)

OECD's climate policies dashboard. The monitoring, counting, classification and analysis of climate policies is of growing interest, as they are the instrument to mitigate the effects of climate change or to achieve adaptation. Their better taxonomy will help to decide which are the most effective tools, with initiatives of analysis that stand out for their methodological consistency, frequency and geographical range.² Such is the dashboard published by the OECD as part of its "[International Programme for Action on Climate](#)" - the **Climate Actions and Policies**

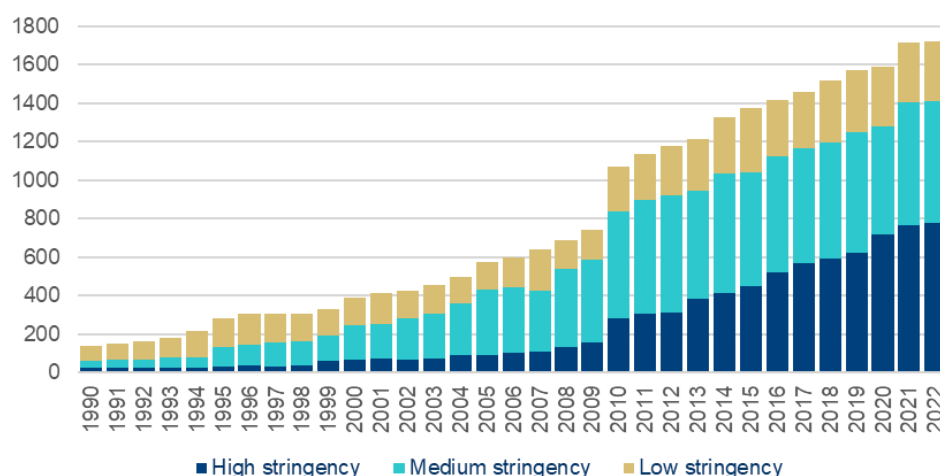
¹ For further details see: "COP28: Real gains if fully implemented, but transformative action is still needed". Economics of Climate Change Cluster. BBVA Research, December 15, 2023.

² It is worth noting that the economic analysis leverages on the wider availability of quantitative proxies of policies or regulations. For further details see the "[Box 1. Economic analysis improves with the increasingly available quantitative proxies of sentiment, policies or regulation.](#)"

Measurement Framework (CAPMF) - which, in addition to climate policies, also references and compares data on GHG emissions and analyses of climate impacts and risks for 48 countries.³

Evolution of adopted policies. Since 1990 there has been a significant increase in the number of climate policies adopted by countries, which, in addition, are becoming more stringent over time (**Figure 3**). This rise in policy adoption is especially relevant between 2010 and 2021 in OECD and OECD partner countries, with an average annual increase of 10%. However, this trend experienced a plateau in 2022, with only a 1% growth, potentially influenced by the energy crisis. Likewise, the stringency of these policies also increased during these years, with a slowdown in 2022.

Figure 3. **ADOPTED CLIMATE POLICIES AND STRINGENCY DEGREE, 1990-2022**



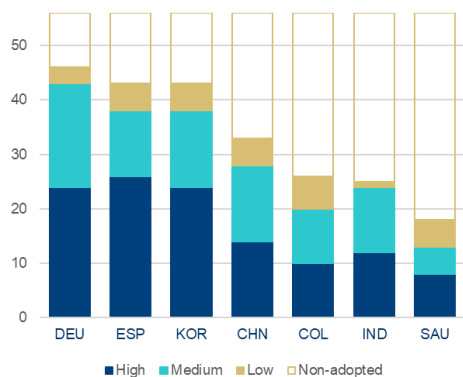
Source: BBVA Research from [IPAC | International Programme for Action on Climate | Dashboard - OECD](#).
Notes: The improvement in 2010 is due to data availability from 2010 onwards. High stringency includes stringency values 8-10, medium stringency 4-7 and low stringency 1-3.

Country analysis. Across a spectrum of diverse country profiles, the OECD's CAPMF reveals differences against the total 56 policies measured. A shortfall is particularly evident in oil-rich nations such as Saudi Arabia, which has only adopted 18 climate policies. European countries, in contrast, demonstrate a more dynamic adoption rate with a median of 40 policies in 2022, surpassing the non-European median of 33 policies. Germany, Spain, and South Korea exemplify this proactive engagement, not only in terms of policy adoption but also in terms of higher policy stringency (**Figure 4**). The structure according to the type of policies (**Figure 5**) shows a pattern similar to that of stringency, with far fewer market-based policies, those with the greatest potential to encourage an efficient reduction of GHG emissions, implemented in countries with lower levels of development or, above all, more intensive in the production and consumption of fossil fuel energy.⁴

³: See "Box 2. OECD Climate Actions and Policies Measurement Framework" for further details.

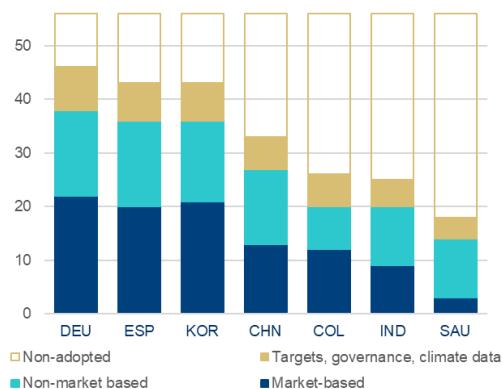
⁴: For further details see: [The Climate Action Monitor, 2023](#).

Figure 4. **ADOPTED POLICIES BY STRINGENCY LEVEL, 2022**



Source: BBVA Research from IPAC | International Programme for Action on Climate | Dashboard - OECD.

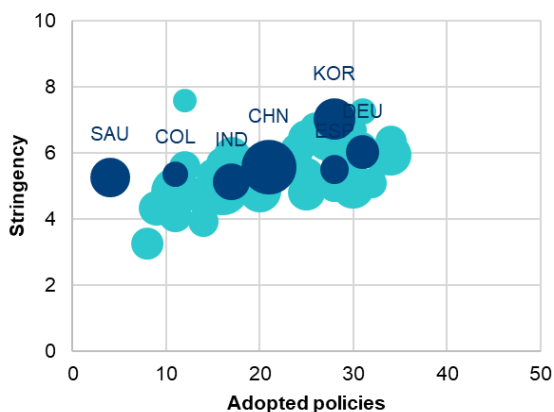
Figure 5. **ADOPTED POLICIES BY INSTRUMENT, 2022**



Source: BBVA Research from IPAC | International Programme for Action on Climate | Dashboard - OECD

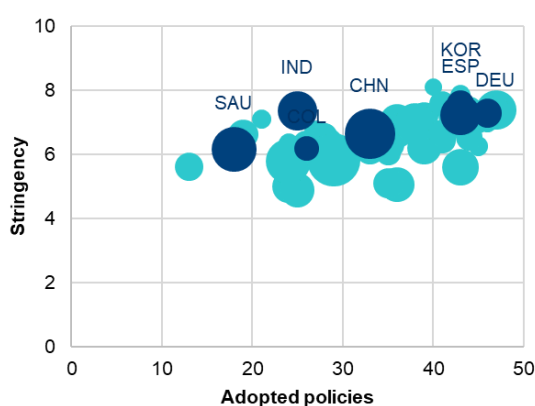
The degree of effectiveness of climate policies, an open question. Enhancements in the monitoring and progressive implementation of climate policies are notable achievements in climate action. Nonetheless the degree of stringency in climate policies -how much they push for GHG mitigation- is not a standalone measure of their success in reducing emissions. Such policies operate within broader socioeconomic frameworks, variables like economic development and the composition of a country's energy mix influencing their effectiveness (Figure 6, Figure 7).

Figure 6. **POLICY STRINGENCY AND POLICY ADOPTION BY EMISSION INTENSITY, 2010**



Source: BBVA Research from IPAC | International Programme for Action on Climate | Dashboard - OECD.
Notes: The size corresponds to emissions intensity (CO₂/GDP). In dark blue selected countries.

Figure 7. **POLICY STRINGENCY AND POLICY ADOPTION BY EMISSION INTENSITY, 2022**



Tracking and categorizing climate policies is crucial in evaluating climate action. This analytical process, while fundamental, also reveals the intricate challenge of establishing direct causality. The complexity inherent in this task points to the need for continued research to accurately determine the real-world effects of climate policy measures on environmental outcomes.⁵

⁵: There is a large empirical literature on the question of the causal impact of climate policies on the mitigation of greenhouse gas emissions. For example, focusing on the effects of the European Union Emissions Trading System:

- Känzig, D. R., & Konradt, M. (2023). *Climate Policy and the Economy: Evidence from Europe's Carbon Pricing Initiatives* | NBER.

Box 1. Economic analysis improves with increasingly available quantitative proxies of sentiment, policies or regulations

The economic analysis is enriched by the increasingly available indicators that proxy the diverse “non-economic” phenomena affecting it. From plain description to granular impact analysis are possible when there are available quantitative indicators as regards geopolitical tensions, regulations that define global trade, or climate policies, all of them hot topics of the global economic scenario.

Tone, Geopolitics and Trade. Access to big data from media and social networks, for example, allows for measuring the tone of geopolitical tensions, as reviewed regularly by BBVA Research on its [Geopolitics Monitor](#). Also, the state of global trade governance can be followed with the counting and classification of unilateral commercial policy interventions regulations, grossly protectionist or liberalizing, as done by [Global Trade Alert](#)⁶. On the same topic, trying to capture the multiple facets of globalization, the differences between its 'de facto' and 'de jure' evolution⁷ are highlighted by the [KOF Swiss Economic Institute](#) through its [KOF Globalisation Index](#). It is worth noting that as regards trade and financial globalization (**Figure B1, Figure B2**) the diagnosis is well different, with different implications for impact analysis or economic policy advice.⁸

Figure B1.1. **WORLD. TRADE GLOBALIZATION**

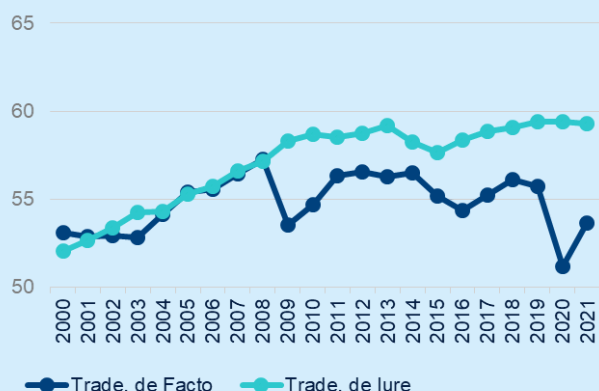
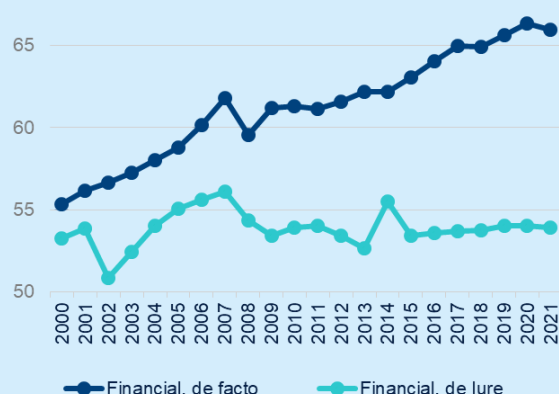


Figure B1.2. **WORLD. FINANCIAL GLOBALIZATION**



Source: BBVA Research from [KOF Globalisation Index](#) – KOF Swiss Economic Institute | ETH Zurich

Ideological distance and bilateral trade. And last but not the least, regarding the interaction between geopolitics and trade, BBVA Research has shown that a measure of ideological distance between countries is relevant to explain bilateral trade, as significant as, for example, the existence of trade agreements or physical distance between countries (**Figure B3**).⁹

• Metcalf, G. E., & Stock, J. H. (2020). [The Macroeconomic Impact of Europe’s Carbon Taxes](#) | NBER

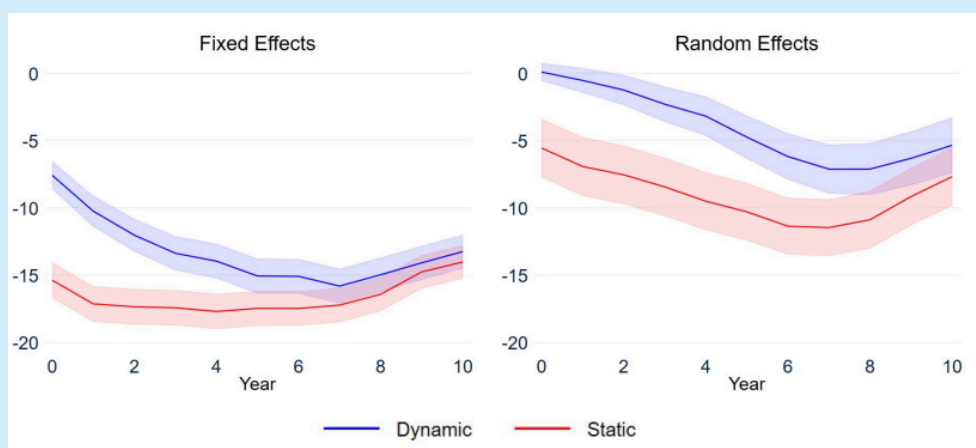
⁶: Global Trade Alert provides timely information on state interventions taken since November 2008 that are likely to affect foreign commerce. It includes state interventions affecting trade in goods and services, foreign investment and migration.

⁷: "De facto" refers to effective evolution, in magnitudes actually realized such as the volume of trade or investment; "de jure" refers to relevant conditions for evolution to occur, such as the existence of trade agreements or the level of tariffs on imports or restrictions on foreign investment.

⁸: For further details: [KOF Globalisation Index: degree of globalisation still below pre-pandemic levels](#).

⁹: For further details: "Global Trade and geopolitical fragmentation" at [Country Risk Annual Report 2024](#) | BBVA Research.

Figure B1.3. **IDEOLOGICAL DISTANCE, EFFECT ON EXPORTS**
(PATH OF CHANGE IN % EXPORTS PER UNIT INCREASE IN IDEOLOGICAL DISTANCE)



Source: BBVA Research, [Country Risk Annual Report 2024 | BBVA Research](#)

Box 2. OECD Climate Actions and Policies Measurement Framework

The **OECD Climate Actions and Policies Measurement Framework (CAPMF)** stands as a comprehensive, internationally harmonized database, tracking climate mitigation policies across OECD and partner countries from 1990 to 2022. The current edition covers 49 countries, excluding Brazil and the United States as the observations underlying climate policy data have not been yet validated.

The CAPMF evaluates 56 major climate actions and policies, by measuring their **stringency**, i.e. the extent to which they encourage emission reductions. The stringency score quantitatively goes from 0 (non-stringent) to 10 (highly stringent), with binary variables receiving a maximum score if implemented, and categorical variables being linearly mapped within this range. In cases of missing data, a stringency score of 0 is assumed, ensuring a comprehensive and nuanced understanding of policy impact and effectiveness.

Regarding the structure of the evaluated policies, there are **sectoral policies** – the most extensive group – which include both market-based instruments (such as carbon pricing instruments and other charges, support policies for renewable electricity and financing instruments) and non-market-based instruments (including standards and regulatory instruments). **Cross-sectoral climate policies** encompass GHG emissions targets (NDCs and net-zero goals), public research development, and climate governance. Lastly, **international climate policies** cover aspects like international climate cooperation, reporting, and finance.

Table B2.1. **SUMMARY OF THE 56 POLICY MEASURES**

■ Market-based instrument ■ Non market-based instrument ■ Targets, governance and climate data

Feed-In-Tariffs	Renewable energy auctions	Renewable energy certificates	ETS - Electricity	Carbon Tax - Electricity	Ban and phase out of coal-fired power plants	Renewables expansion	Air emission standards	MEPS for electric motors	
Fossil Fuel Subsidies - Electricity	Fossil fuels excise taxes - Electricity	ETS - Industry	Carbon Tax - Industry	Fossil Fuel Subsidies - Industry	Energy efficiency mandates	Ban and phase out of fossil fuel heating...	Mandatory energy labels...	MEPS Transport	
Fossil fuels excise taxes - Industry	Fossil fuels subsidies - Buildings	Fossil fuels excise taxes - Buildings	Financing mechanisms - Buildings	Congestion charges	MEPS of appliances	Labels for vehicles	Speed limits on motorways	Ban and phase out of passenger cars with ICE	Bans and phase out on fossil fuel extraction
Financing mechanisms - Industry	ETS - Transport	Fossil fuels excise taxes - Transport	RD&D expenditure - Energy Efficiency	RD&D expenditure - Carbon...	Building energy codes	Share of rail on total surface transport public...	Methane abatement policies	Banning governments' export credits for new unabated coal...	Banning public finance for fossil fuel infrastructure abroad
ETS - Buildings	Carbon tax - Transport	RD&D expenditure - Renewable energy	RD&D expenditure - Hydrogen	RD&D expenditure - Other storage	NDCs	Climate advisory body	International climate initiatives	UNFCCC documents	
Carbon tax - Buildings	Fossil fuels subsidies - Transport	RD&D expenditure - Nuclear	Fossil Fuel Subsidies Producer Support	Pricing emissions aviation and maritime transport	Net Zero Targets	International climate treaties	Biennial Reports	GHG emissions reporting and accounting	

Source: BBVA Research from IPAC | International Programme for Action on Climate | Dashboard - OECD

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