Rothschild & Co
Asset Management

ESGnomics

September 2022

Foreword

Climate change, reduced inequality and better governance are all challenges to making our world more just and sustainable in the future, and Rothschild & Co is committed to this goal.

The Group's economic research is part of this approach, providing analysis on the main risks and opportunities to which economic players are exposed. ESGnomics aims to convey in an educational manner the contributions of economics to the discussion of Environmental, Social and Governance issues.

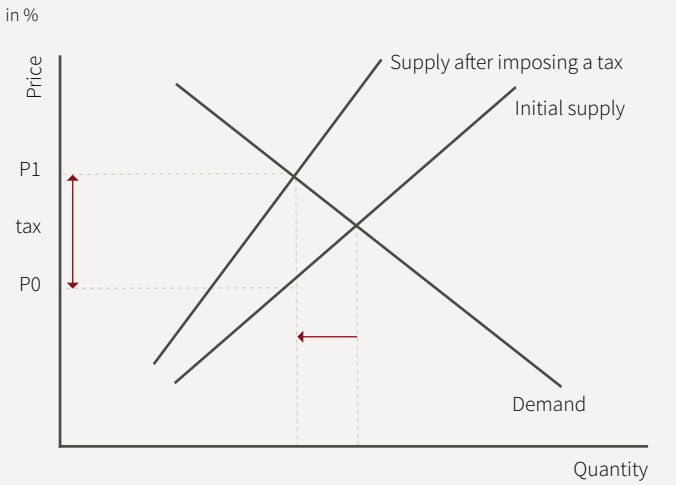
Challenges and opportunities of carbon pricing

Marc-Antoine Collard
Chief Economist,
Director of Economic Research
Rothschild & Co Asset Management Europe

To prevent severe climate change, the world needs to rapidly reduce global greenhouse gas (GHG) emissions. While innovation is key, behavioural changes is also paramount and carbon taxes could be one of the most efficient and cost-effective way to address the problem of global warming.

Carbon-pricing is an instrument that captures the external costs of GHG emissions that the public pays for – such as damage to crops, health care costs from heat waves and droughts, and loss of property from flooding and sea level rise – and ties them to their sources through a price, usually in the form of a price on the carbon dioxide (CO_2) emitted.

Supply-demand balance when imposing a tax



Source: Rothschild & Co Asset Management Europe, September 2022.

Carbon-pricing approaches could help reduce emissions...

Global warming imposes huge costs on future generations who will suffer the consequences of climate change. Yet, these costs are not being reflected in current market prices for goods and services. For instance, businesses and households that produce GHG emissions by driving cars or generating electricity do not pay directly for the losses and damage caused by that pollution. To overcome this market failure, governments might need to internalise the costs of future environmental damage by putting a price on what causes it – namely GHG emissions. In 2021, 35 carbon tax programs have been implemented across a number of countries, regions, and local governments[1].

Under a carbon tax, the government sets a price that emitters must pay for each ton of GHG they emit. For instance, let's assume the market price for an air ticket is 300€ which ignores the external cost of pollution. A carbon tax would raise the price – to 370€ if the external cost of pollution from that air flight is estimated at 70€ – so that it takes into account the negative impact on the environment. The new price would discourage some from flying, leading to a reduction in air-travel and pollution, thus to a more socially efficient level of consumption.

(1) World Bank, State and Trends of Carbon Pricing, 2021.

As such, putting a price on CO_2 emissions from fossil fuels in the form of a fee or tax can be an effective way of reducing GHG emissions and pollution levels as businesses and consumers will take steps to avoid paying the tax[2]. In addition, taxing GHG emissions encourages investment in renewable energy and leads to further technological developments as businesses and industries look to alternatives to develop more environmentally friendly production processes.

Carbon tax programs can also raise money to be spent on environmental initiatives and be used to fund investment in alternatives. For example, the government can subsidize more environmentally friendly public transport.

> “Today’s pollution will create climate hazards for many generations to come...”

... yet many hurdles remain

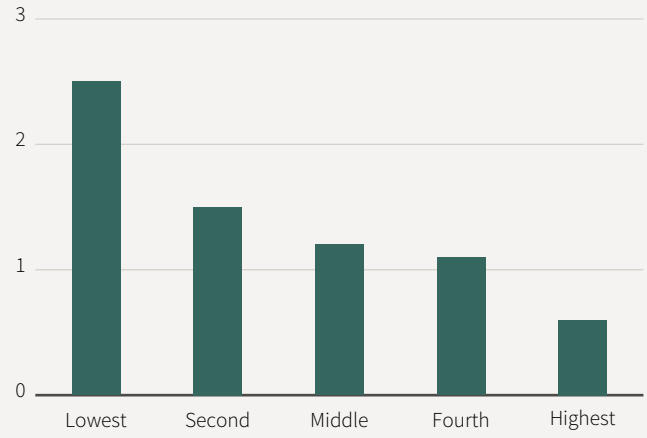
Although carbon pricing has the potential to address the problem of global warming, estimating the environmental cost of carbon emissions is a very complex task and sensitive to scientific and economic assumptions, and thus might differ greatly from one research to another[3].

A crucial consideration in calculating this cost is that carbon pollution dissipates very slowly, meaning today’s pollution will create climate hazards for many generations to come. A second difficulty is tail risk, namely, the possibility of catastrophic future climate damage, not to mention that the causes and consequences of climate change are global in scope.

Also, there are several reasons why some countries have failed to implement carbon taxes, such as lobbying by fossil fuel stakeholders and opposition from the public because a tax will raise prices[4]. Furthermore, there is a perception that taxes reduce welfare and increase unemployment due to lower levels of consumption and production. Because low-income households consume a more energy-intensive basket of goods than do wealthier households, a carbon tax is expected to be regressive, i.e. it would cost poorer households a higher share of their income than wealthier households[5].

US – Cost of carbon tax

in % of disposable income, by quintile for a $28 tax

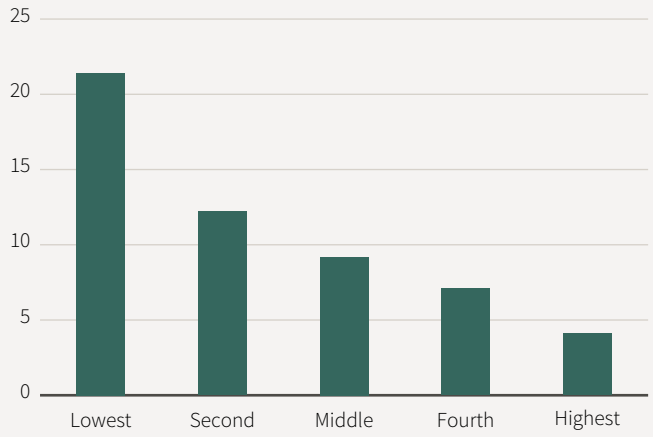


Source: Congressional Budget Office, Rothschild & Co Asset Management Europe, September 2022.

(2) David L. Chandler, “Carbon taxes could make significant dent in climate change”, MIT News Office, 6 April 2018.
(3) Ricke, Katharine, Laurent Drouet, Ken Caldeirvwa, and Massimo Tavoni, “Country-Level Social Cost of Carbon.” Nature Climate Change 8, 895–900, 2018.
(4) Sterner. T. and G. Köhlin, “Pricing carbon: The challenges”, Towards a Workable and Effective Climate Regime, Centre for Economic Policy Research, 2015.
(5) Marron, Donald, Eric Toder, and Lydia Austin, “Taxing Carbon: What, Why, and How.”, Brookings Tax Policy Center, 2015.

US – Energy expenditures

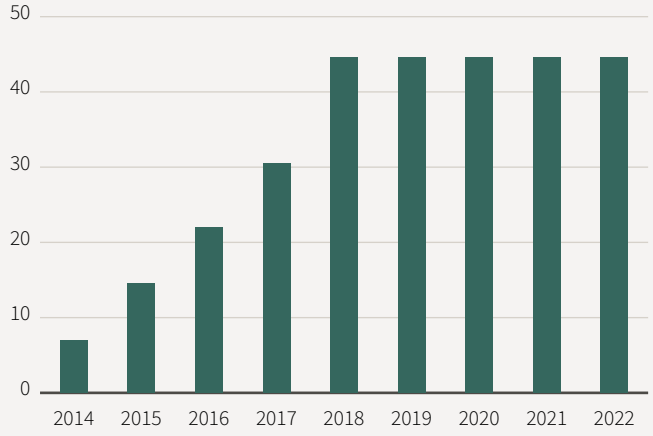
in % of income, by income quintile



Source: BLS, Rothschild & Co Asset Management Europe, September 2022.

France – Carbon price

in € / tCO_2



Source: Ministry of Energy Transition, Rothschild & Co Asset Management Europe, September 2022

Carbon leakage is when businesses move their operations to a country that has a lower cost of CO_2 or other GHG emissions. Leakage shifts emissions rather than reducing them.

The challenge of an international pricing system

Ideally, there should be a uniform carbon price across the world, reflecting the rationale that a ton of carbon dioxide-equivalent does the same amount of damage over time wherever it is emitted. Yet, today's cost of carbon dioxide and other GHG emissions is priced at anything from $0 to over $130 per ton[6], creating an uneven playing field across countries and industries, and leading to some form of carbon leakage.

In order to prevent the latter, the European Commission has adopted in July 2021 a proposal for a new carbon border tax which would put a carbon price on imports of a targeted selection of products, thus equalizing the cost of carbon use from domestic and foreign sources. However, beyond the associated technical challenges, imposing carbon border taxes on – mainly – developing countries that do not comply with Europe's standards could raise issues of fairness, given profound global energy inequality. Moreover, for countries with large stocks of existing infrastructure, the biggest problem will be the legacy of past investments in the form of stranded assets, implying that managing distributional issues within countries may become more of a hurdle than redistribution across them with a carbon border tax[7].

> "IMF has proposed the establishment of an international carbon price floor..."

Correspondingly, the IMF has proposed the establishment of an international carbon price floor, which is a minimum price paid on CO_2 and other GHG. This would address the carbon leakage problem by providing incentives to countries to reduce emissions rather than relying on a carbon border adjustment mechanism. Under the proposal, low-income countries would be encouraged to participate through two mechanisms: (1) a lower carbon price floor than the one that would apply to high-income countries, and (2) financial assistance from a global fund that would be financed by a percentage of the revenues from the carbon pricing systems of high-income countries[8].

While there is precedent for global action on environmentally dangerous gases[9], it has been challenging to agree on a collective price for carbon as the effects are uneven across economies and industries while the negotiations regarding the redistribution of revenues that would help those worst hit have been complex and far from conclusive even though climate change experts' conclusions seem implacable: the benefits of strong climate action outweigh the costs of inaction.

(6) Source: Bloomberg, september 2022.
(7) Kemal Dervis, "Carbon border tax can aid global sustainability, but at what costs?", World Economic Forum, 13 Feb. 2020.
(8) World Economic Forum, "Increasing Climate Ambition: Analysis of an International Carbon Price Floor", 2021.
(9) For example, the 1987 Montreal Protocol was introduced to tackle substances that deplete the ozone layer and the 1983 Convention on Long-Range Transboundary Air Pollution addresses air pollutants that cause acid rain.

About Rothschild & Co Asset Management Europe

As the specialised asset management division of the Rothschild & Co group, we offer personalised asset management services to a broad client base of institutional investors, financial intermediaries and distributors. Our development is focused on a range of open-ended funds, marketed under four strong brands: Conviction, Valor, Thematic and 4Change, and leveraging our long-term expertise in active management with conviction as well as in delegated management. Based in Paris and established in 9 European countries, we manage more than 23 billion euros and employ nearly 160 people. More information at: www.am.eu.rothschildandco.com

Join us on **LinkedIn**

For further information
am.eu.rothschildandco.com

Rothschild & Co
Asset Management