CARBON PRICING LEADERSHIP COALITION

Executive Briefing

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What is the Impact of Carbon Pricing on Competitiveness?

SUMMARY

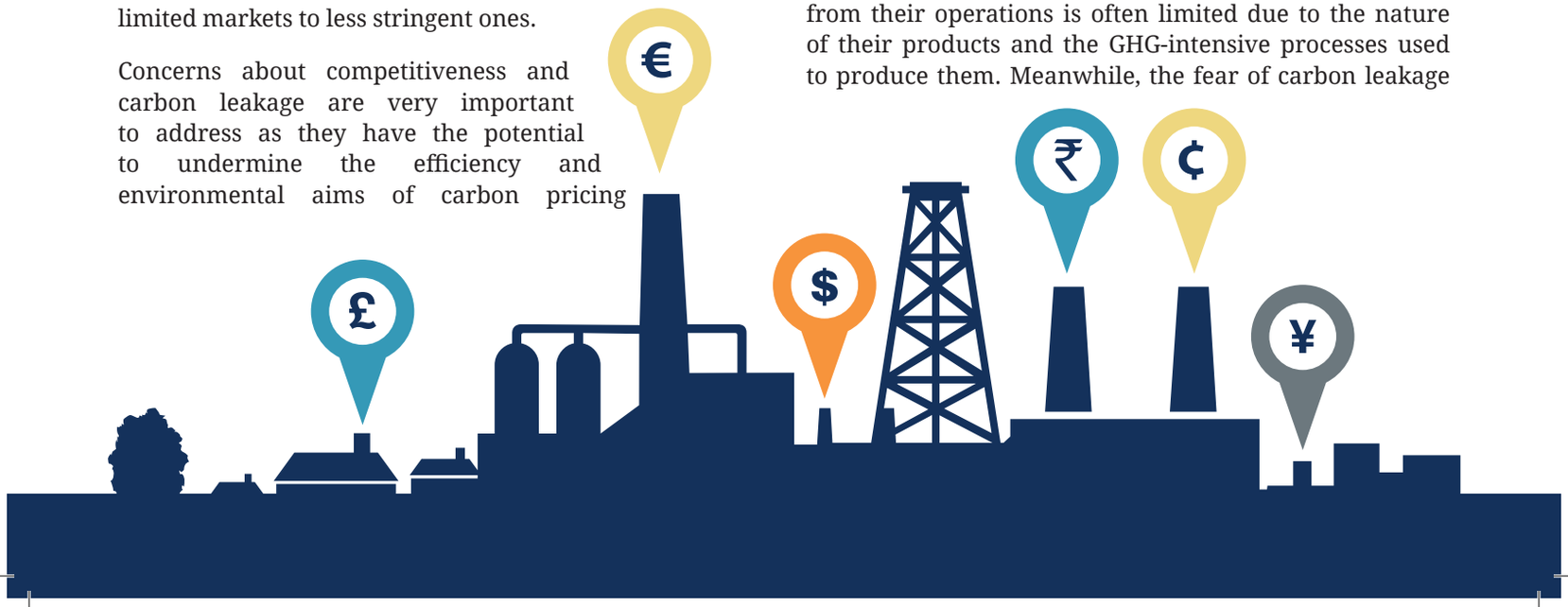
Pricing carbon is one of the most powerful and efficient strategies that governments and businesses are using to respond to climate change. The principle is simple: put a price on carbon pollution to account for the impacts of greenhouse gas (GHG) emissions that stem from the economic choices made by both producers and consumers. An accurate price signal for carbon will spur businesses, investors and individual consumers to switch their preferences from emissions-intensive industries, processes and practices to low-carbon, climate resilient alternatives.

Although the adoption of carbon pricing can spur investment in innovation and modernization that can lead to competitive advantages and economic gain, a common concern is that carbon pricing may threaten business competitiveness. Further, because the adoption of carbon pricing has yet to occur at a global level, there is the chance that firms operating in countries with a price on carbon may lose business, profits, or market share to competitors that do not have to account for a price on carbon. This unintended consequence of carbon pricing policies could result in "carbon leakage," whereby carbon-intensive industrial investments, operations, and related GHG emissions are shifted from carbon-limited markets to less stringent ones.

Concerns about competitiveness and carbon leakage are very important to address as they have the potential to undermine the efficiency and environmental aims of carbon pricing policies. Competitiveness concerns are of particular importance to energy-intensive, trade exposed (EITE) companies as their ability to squeeze carbon reductions from their operations is often limited due to the nature of their products and the GHG-intensive processes used to produce them. Meanwhile, the fear of carbon leakage

KEY MESSAGES

- Businesses and governments are increasingly using carbon prices to drive the cost-efficient transition to a low-carbon economy.
- A key challenge to the acceptance of carbon pricing is the fear of reduced economic competitiveness—but evidence to date shows little impact.
- As pricing levels rise, competitiveness concerns can be addressed through political engagement and targeted policies and will diminish as the geographical coverage of carbon pricing spreads.



is the major political hurdle facing the extended use of carbon pricing. While there is little evidence to date that carbon leakage is occurring, it is the fear of such leakage that can deter politicians from even proposing carbon pricing as part of the policy response to climate change. Overcoming this barrier is a major challenge.

Fortunately, targeted carbon pricing policies can be designed to mitigate these concerns, and as carbon markets become more geographically balanced, this will further address risks of leakage. Early evidence from California, British Columbia, and Québec suggests that the adoption of carbon pricing is neither an impediment to robust industrial growth, nor is it leading to the transference of GHG emissions to other countries via the shift of industrial activity. Norway, Sweden, Switzerland and France also have adopted carbon taxes without witnessing adverse effects on their industrial sectors and economic growth. These experiences help illustrate that carbon pricing can create long-term competitive advantage for low-carbon and energy-efficient businesses through cost reduction, production efficiency, and improved product quality. Empirical evidence on the effects of environmental policies in general and carbon prices in particular support this finding.

DOES CARBON PRICING NEGATIVELY IMPACT COMPETITIVENESS?

Carbon pricing is supported by the 'polluter pays' principle and its implementation is meant to account for the costs of damage caused by GHG emissions and tilt the playing field from emissions-intensive activities to low-carbon solutions. Some sectors dominated by fossil fuel production, processing and consumption will inevitably contract under carbon pricing. However, production and investment decisions are influenced by a wide range of factors, such as proximity to product markets, low-cost inputs such as energy prices, construction costs of new facilities, transport costs of reaching key markets, exchange rate fluctuations, labor costs, and systemic business risks.

Carbon pricing can be counted among this range of factors, but there is little evidence to suggest that a price on carbon is a determinant variable in whether a company succeeds or fails. For example, **data from the United Kingdom** production census shows that the introduction of the Climate Change Levy (an energy tax) had a positive impact on energy intensity, but no detectable negative effects on economic performance or plant exit. An impact study of the **German tax on electricity** implemented in 1999 on firms in the manufacturing sector also showed no deterioration in the competitiveness of firms.

Early evidence suggests that a price on carbon is not an impediment to economic growth.

And a study of British Columbia's carbon tax also found limited impacts on industrial competitiveness, with the exception of two companies in the cement sector that lost market share. At the same time, the province is now home to a growing clean technology sector, with more than 200 companies that generate an estimated $1.7 billion in revenues annually.

There are a few possible reasons why carbon leakage has not been observed to date. First, the cost of carbon may not be as important for production and investment decisions compared to other factors such as the quality of institutions, availability of capital, skills of workers, proximity to markets, governance and tax regimes. Second, firms can respond to carbon pricing by reducing emissions, which cuts potential increases in production costs and thus leakage. Third, existing carbon price levels may be too low in some jurisdictions and the systems too new to affect decisions. Fourth, governments may have used policy measures to limit the risk of carbon leakage.

CAN POTENTIAL IMPACTS ON COMPETITIVENESS BE MANAGED AS CARBON PRICES INCREASE?

The economic impacts of a carbon price on businesses can be effectively handled through well-designed policies. In fact, it is often the design of policies rather than their stringency that presents challenges to business. Offering targeted, market-based incentives for firms and industries to reduce emissions and invest in low-carbon, energy efficient processes and alternatives, while simultaneously removing subsidies for high-carbon business activities can go a long way towards changing the competitive landscape. Other policies include production or investment tax credits, research and development tax credits, accelerated

Policymakers have a number of tools at their disposal, including:

Tax incentives for low-carbon investments, such as production or investment tax credits; R&D tax credits; accelerated depreciation; feed-in tariffs; and business support services and loans

depreciation, feed-in tariffs, and business support services and loans.

Policymakers can also consider complementary measures to ease the transition for adversely affected firms, sectors, and regions. These include dedicating carbon revenues to regional economic development and support to ease the transition of businesses and sectors that compete internationally. For example, **the EU ETS** provides free allocation of allowances to businesses in sectors exposed to carbon leakage. The policy is based on emission performance so that only the top 10 percent of performers receive free allowances to cover 100 percent of their emissions. The policy was designed to provide an ongoing incentive for firms to outperform others in their sector in terms of energy efficiency. As shown in the table, the cement industry is one such EITE sector considered to be at risk of carbon leakage in countries with carbon pricing, including the EU ETS, the California cap-and-trade system, and the now-defunct Australian system. In 2015, British Columbia's government announced

Negative impacts on competitiveness can be managed through targeted policies and complementary measures.

Examples of the treatment of cement sector in Jurisdictions with Carbon Pricing

Sub-sector or activity	Risk of carbon leakage?	On what basis?
EU ETS Phase III		
Cement	✓	High emissions intensity
California		
Cement	✓ High	High emissions intensity Medium trade intensity
Australia		
Clinker production for cement	✓ High	High emissions intensity High trade intensity
British Columbia		
Cement	Not assessed	Tax applies only to sale of fossil fuels, so process emissions of cement production are not affected

a program of transitional measures to encourage production of cleaner cement. The government plans to provide incentives over five years to foster the cement industry's transition to lower-carbon fuel sources and to encourage the industry to reduce its emissions even further through carbon intensity reduction goals.

South Africa's carbon tax proposal includes tax-free thresholds of up to 90 percent for EITE sectors. Although these tax-free thresholds will be phased down eventually to avoid undermining the carbon policy by weakening the pricing signal, they may provide companies with valuable time to transition to new business models. Any adjustments to policy design to address competitiveness concerns should be carefully targeted and temporary in nature, with a clear exit strategy, to avoid political impediments to their later removal.

Concerns over the potential competitiveness impacts of carbon pricing will decrease as carbon pricing becomes more widespread, integrated and harmonized across states and jurisdictions.

Over time, carbon pricing policies are expected to eliminate the risk of carbon leakage by shifting the structure of the global economy in favor of efficient, low-carbon products and processes versus emissions-intensive activities. While carbon leakage has not yet materialized in any significant way, concerns will persist so long as carbon pricing policies remain fragmented globally.

The World Bank Group's Networked Carbon Markets initiative is exploring ways to address this fragmentation by identifying the services and institutions needed to engender a connected, stable international carbon market. The idea is that by linking carbon markets, companies from separate jurisdictions vying for the same markets and customers will be able to compete on even terms when it comes to carbon prices. Linking carbon markets also has the advantage of expanding the number and range of options available to companies to achieve greater reductions in emissions at lower cost.

CAN CARBON PRICING IMPROVE COMPETITIVENESS?

Carbon pricing helps to accelerate modernization and productivity improvements that enhance rather than harm competitiveness, as firms operating at the technology frontier seize new market opportunities. Some countries have used carbon pricing as part of a suite of policies to reduce emissions while accelerating economic growth. For example, Sweden has the highest carbon price in the world, but both its industrial sector and GDP have increased while absolute GHG emissions have decreased.

Finally, a growing number of companies are adopting internal carbon prices as a way to help them outperform their competition. For example, **Microsoft** assigns a carbon fee to its internal business units, and collects proceeds in a fund that can be tapped to help pay for additional investments in energy efficiency, renewable energy purchases and the launch of new product lines that will help the company to gain market share over competitors. Dutch health, materials and nutrition company **Royal DSM** applies a 50€/ton internal carbon price when reviewing large investment decisions. This helps to "future proof" the company, as it helps to spot energy saving opportunities at an early stage while raising awareness inside the organization.

FOR MORE INFORMATION

This Executive Briefing was prepared by the Carbon Pricing Leadership Coalition, which includes governments, businesses and civil society groups working together to identify and address the key challenges to successful use of carbon pricing as a way to combat climate change. The content for this brief is a synthesis of ideas and literature derived from the key references on carbon pricing listed here, which are also available at the CPLC website: **www.carbonpricingleadership.org**.

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