

# Executive Summary

Governments have gradually adopted more stringent environmental policies to tackle challenges associated with rising environmental issues, such as climate change, air pollution, waste management or biodiversity loss. Between 1995 and 2015, the stringency of environmental policies related to air pollution, energy and climate change – as measured by a composite indicator developed by the OECD – tripled across OECD countries.

The ambition of these policies is, however, often shaped by their perceived negative effects on the economy. Indeed, environmental regulations generally require polluting facilities to undertake abatement activities, which imposes costs on businesses. Therefore, policy makers fear that, in a world characterised by the rise in global value chains and capital flows, differences in the stringency of environmental policies across countries would change relative production costs and alter firms' competitiveness. As a result, pollution-intensive production capacity could shift towards regions with less stringent regulation. This would modify the spatial distribution of industrial production, with potential consequences for employment, international trade and investment flows.

However, the results of a decade of ex-post OECD studies on the economic effects of environmental policies on industry, summarised in this publication, show that implementing more stringent environmental policies has had little aggregate effect on economic performance so far despite achieving significant environmental benefits. This publication summarises eight recent OECD studies investigating the link between environmental policies and economic outcomes, based on cross-country firm-level, sectoral and macro datasets. The studies reviewed in this book find that:

- Short-term effects of environmental policies on aggregate economic outcomes have been modest so far. A 10% increase in energy prices generates a decrease in manufacturing employment of less than 1%, a small increase of around 1.5% in foreign investment relative to total investment, no net effect on trade, and a slight increase in productivity. Across all of these outcomes, the impact of environmental policies is overwhelmingly dominated by other determinants of economic performance and other public policies (trade policy, labour market policies, factor endowments). However, more work is needed to understand the longer term effects of environmental policies.
- At the same time, environmental policies implemented in the past had significant benefits in terms of environmental outcomes. For example, the introduction of the European Union Emissions Trading System led to a reduction of carbon emissions of 10% between 2005 and 2012. The French carbon tax reduced emissions by 5% between 2013 and 2018. The removal of energy subsidies in Indonesia led to declines in energy use and carbon intensity (of respectively 5% and 10%, for a 10% increase in energy prices). In all of these studies which assess the impact of environmental policies on environmental and economic performance jointly, the effect on employment and other measures of firm performance were either insignificant or very small.
- However, these small average effects across the economy hide heterogeneous effects across sectors and firms. On the one hand, environmental policies adversely affect the performance of mainly high-pollution industries (e.g. manufacturing of petrochemicals, iron and steel, etc.) and of least-productive firms. Specifically, employment, exports and investment are negatively affected

for pollution-intensive companies, as is the productivity of firms that are initially less productive. On the other hand, more stringent environmental policies also have positive effects, like improving productivity of front-runner industries and firms or increasing exports of low-pollution industries. Overall, environmental policies generate winners and losers and trigger a reallocation of capital and labour from high-emission to low-emission industries and firms.

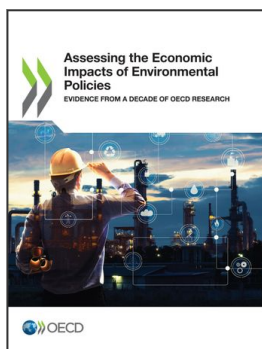
- The design of environmental policies matters and can help mitigate the negative impacts and enhance the positive effects. For example, using market-based policies rather than command-and-control policies is found to help offsetting negative productivity effects.

Despite their small adverse effects on the economy, implementation of stringent environmental policies remains politically difficult because the localised effects can be large (e.g. in terms of employment or competitiveness losses), even if small overall, which can generate strong opposition. Therefore, from an efficiency, distributional and political standpoint, it is important to design environmental policies in a way that emphasises their positive net effects for the economy without sacrificing their impact on the environment, while also helping those individuals working in the most polluting companies.

In this respect, an advantage of market-based policies is that they generate additional public revenues. These can be used to address potential adverse distributional impacts of environmental policies, to fund environmental innovation and investments, to reduce the tax burden elsewhere in the economy, or to reduce public deficits. Nevertheless, market-based policies can be administratively more demanding to implement because of monitoring requirements, and can also be socially less acceptable.

Combining environmental policies with other policies (such as trade, education, employment and fiscal policies) can also play an important role to deal with the challenges associated with the unavoidable negative effects of environmental policies on the least-efficient, most polluting companies. For example, active labour market policies (such as facilitating job search, enhancing skills, life-long training and education) – especially if enacted early – can ease the transition to a cleaner economy.

A note of caution remains: The studies reviewed in this publication make use of historical changes in the stringency of environmental regulation, largely related to energy, air pollution and climate policies, to analyse their effects on economic outcomes along various dimensions. While this provides valuable lessons, future increases in environmental policy stringency made necessary recently by adopted carbon neutrality targets may lie outside of observed past changes. Low-hanging fruits of energy savings and resource reallocation might have already been exploited, and further emission reductions might require radical technology changes and vast resource reallocations. If such radical changes were necessary, the conclusions drawn from the studies might not be generally valid, particularly in a world where countries implement climate change policies at a different pace. Continued empirical evaluation of environmental policies will be necessary to allow governments to fine-tune policies and balance environmental goals with impacts on economic performance of industry.



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