

Climate Change

The United Nations climate change conference in Copenhagen brings together world leaders to seal a political global climate deal to replace the Kyoto Protocol. Besides commitments to cut emissions, a major aspect of the negotiations is financing of mitigation and adaptation to climate change in developing countries. In line with its mandate, the IMF focuses on the macroeconomic, fiscal, and financial challenges of climate change and related policies.

The Copenhagen conference takes place at a time when policymakers are searching for new sources of sustainable growth to recover from the deepest economic crisis for decades. As argued in the December 2009 issue of the IMF's *Finance and Development*, the crisis has had major effects on the global economy, but these detract little from the urgent need to combat climate change (available at <http://www.imf.org/external/pubs/ft/fandd/2009/12/jones>).

The International Energy Agency (IEA) forecasts that declining economic activities could lead to global greenhouse gas (GHG) emissions falling by more than 2.5 percent in 2009. But the damage from climate change—predicted by the Stern Review, for example, to be highly significant in the future, particularly in developing countries—arises not from the flow of GHGs but from the sheer scale of the accumulated stock. Indeed, a massive change in the underlying trend of emissions is needed.

Climate change is in many respects a unique and particularly difficult global economic problem. It involves a global spillover since emitters of greenhouse gases do not bear all the costs from the damage they cause. There is a strong mismatch between the (early) costs of action to limit its extent and the (later) benefits from doing so; and also large differences in how countries have contributed to climate change (advanced economies are mostly responsible for the stock of GHG, while during the next 50 years, 70 percent of emissions are projected to come from emerging and developing economies), and how they will be affected. Finally, there are pervasive uncertainties, including the risk of a catastrophic impact of climate change on living conditions on our planet.

In 2008, the IMF in its World Economic Outlook (WEO) publication examined the macroeconomic consequences of policies to address climate change (available at <http://www.imf.org/external/pubs/ft/weo/2008/01/index.htm>). Raising the costs of producing emission-intensive products would adversely affect productivity, investment, and consumption initially. Real incomes would decline. However, over the long term, carbon pricing could enhance economic growth, as it would create incentives for people and businesses to innovate and shift to using more efficient, low-emissions products and technologies.

The WEO suggests four key policy lessons. First, gradual increases in carbon prices, starting early and from a low level, would minimize the cost of adjustment by spreading it over a longer period of time. Second, carbon-pricing policies should aim at establishing a common world price for emissions to ensure that emission reductions occur where it is least costly to

do so. Third, abatement costs would be lower if firms are allowed to vary their emissions over the business cycle. And fourth, the costs of mitigation need to be distributed equitably across countries, which likely requires a flow of transfers from the “stock” (advanced) countries to the “flow” (emerging and developing) economies.

Free-riding on the efforts of other countries should be discouraged, but trade measures could backfire. In principle, trade measures such as border tariff adjustments—which remit the burden of emission pricing on exports and impose corresponding charges on imports—could be considered. However, caution is needed as such measures risk being misused to hide tariffs or export subsidies, thereby fueling a slide toward protectionism, and may not be consistent with World Trade Organization rules.

Regarding the fiscal implications, cutting emissions will require a “greener tax system”. The two main instruments for carbon pricing are emission taxes (which stabilize the price of emissions) and cap-and-trade systems (or tradable emission permits, which seek to stabilize the quantity of emissions at the desired level), with a combination of the two being preferred to either choice alone. On the expenditure side, public support for basic energy research and development can compensate for the fact that weak intellectual property rights and strong spillover benefits discourage private spending. Reducing deforestation, which accounts for nearly one-fifth of global emissions, is key. However, spending measures must not take the place of more efficient emission pricing—especially given many countries’ intense fiscal challenges. The risk is an inefficient policy mix: public spending paying for the uncorrected externalities of undercharged polluters.

Reversing fuel subsidies is another priority. Fuel subsidies are widely recognized to disproportionately favor wealthier people (who consume more energy). Apart from fairness considerations, IEA estimates that the elimination of fuel subsidies could reduce greenhouse gas emissions by about 12 percent by 2050. The recent commitment by G-20 members to phase-out inefficient fuel subsidies over the medium term while providing targeted support for the poorest is an important step in the right direction.

Climate change has implications for financial markets to, with innovative instruments—such as catastrophe bonds and weather derivatives—providing a way to manage some climate-related risks.

The global financial crisis and stimulus measures have left the public finances of many countries in even poorer long-term health than before. Carbon pricing alone cannot solve these deep fiscal problems, but it can make a significant contribution, which requires that governments resist political pressures to overcompensate producers by awarding them free emission permits—also known as “grandfathering”.

The need to restore economic prosperity after the crisis may have weakened political support for climate mitigation measures. Yet, sustaining the recovery and putting in place effective climate change policies can be mutually reinforcing with the right policies implemented resolutely.