

# The Environment and the Economy: Working Together

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# Urgent need to reduce carbon emissions and emissions of other greenhouse gases

- Tackling climate change is an urgent challenge.
- At COP21 in Paris in December 2015, nearly 200 countries agreed to hold *“the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C”*.

Co-chair (with Lord Nicholas Stern) an international commission on Carbon Pricing as a critical instrument for achieving these goals

- Much of this talk is based on ongoing discussions related to the forthcoming preliminary report of the Commission, but are my own views

# The goals reflect real threats to our planet

- Motivated by concerns over the immense potential scale of economic, social, and ecological damages that could result from the failure to curb carbon emissions
- Temperature targets require large-scale shifts in the energy systems that support economic activity, including dramatic shifts in power generation, industrial processes, transportation systems, and energy consumption

# Importance of a carbon price

- To succeed, i.e. to deliver efficiently and realise the potential benefits in full measure, careful policy design is essential.
- A well-designed carbon price is an indispensable part of a strategy for reducing emissions in an efficient way.
- Most economists agree: creating a carbon price is the best way to curb emissions
- A low-carbon economy could be achieved through the imposition of a moderate carbon price, which would raise substantial revenue
  - Carbon tax could play an especially important role for Japan

# Why a carbon price (carbon tax) is especially good instrument

- Promotes allocate efficiency at the same time that it can strengthen economic growth
  - Provides incentives for firms and households to reduce emissions
  - Provides incentives for innovation—which could be the basis of Japan’s economic growth in the future
  - Basic economic principle: better to tax bad things than good things
  - Carbon price helps address key market failure, i.e. the climate externality.
- Revenues could be used for multiple purposes
  - Reduce other taxes—and any distortions associated with them
  - Promote public investments—including in R & D for a green economy
  - Promote equality—including any adverse distributional impacts

# Carbon tax and economic growth

- The central problem in Japan and much of the rest of the world is lack of (global) aggregate demand
- Carbon tax different from other taxes
  - Other taxes (like VAT or consumption taxes) reduce aggregate demand, worsening the core problem
  - And some worry that poorly designed taxes have adverse supply effects
- Carbon taxes induce investment, to retrofit the economy
  - Stimulus may thus generate even more revenues from other taxes

# Carbon tax may be especially appropriate for Japan

- Slow growth for almost quarter of a century
  - Related to lack of aggregate demand
- Worries about high debt to GDP ratio
  - But other taxes have adverse effects on GDP
  - Weakening output is of concern for all countries, but especially for Japan: object of taxes is to reduce deficit; adverse GDP effects reduce revenues generated by tax
- Worries about deflation
  - Other countries worry about inflationary effects of carbon tax
  - For Japan, this is a positive—further macro-economic benefits

# Design of carbon price policies

- Efficient carbon-price trajectories consistent with the Paris target begin with a strong price now.
- Need to have credible commitment to maintain long-term prices that are high enough to deliver the required change.
- Such carbon prices can efficiently incentivize the needed changes in investment, production, and consumption patterns toward lower-GHG economic activity and induce the technical progress and scale that may bring down future abatement costs.

# Other market failures and other instruments

- Carbon pricing need to be supplemented with/accompanied by other well-designed policies to address other market failures or manage distributional outcomes.
  - Other relevant and important market failures can be associated with capital markets, information, R & D and other externalities.
- These could include efficiency standards, city design, land and forest management, and investment in finding new methods and technologies.
- Including other cost-effective policies can mean that a given emissions target could be achieved with lower carbon prices and lower total cost.

# Need for finance

- There may be a need for finance to support these investments: sector rife with market failures
- Financial markets put no weight on broader social benefits
  - And typically are short-sighted—even underestimating long term private benefits
- Financial crisis showed weaknesses of financial markets
- Subsequent reforms focused on preventing financial markets from imposing harms on rest of society
  - Little effort to ensure that they actually do what they are supposed to do—provide finance for important investments like green investments
- Private financial markets have not done a good job at risk assessment
  - Adjustment of prices of assets in response to increasing carbon prices and climate change not taken adequately into account
  - Especially consequences of network interlinkages and interdependencies
  - Important area of theoretical and applied research

# Important roles for government in finance

- Regulatory role for systemic stability
- Government may need to create a Green Fund
  - Especially for green investments of households and small- and medium-sized firms
  - And to finance long term investments—especially R & D

# Growth discussion distorted by measurement problems

- GDP is not a good measure of economic performance
  - Does not reflect resource depletion and environmental degradation
  - Does not reflect sustainability (environment, social, or economic)
  - Does not reflect distribution of income
- Implication: In assessing “growth” one shouldn’t use GDP as conventionally measured, but a “Green GDP” measure
  - What one measures—and how one measures it—affects what one does
  - If one’s measurements are wrong, one will make the wrong decisions
  - Among central messages of the Commission on the Measurement of Economic Performance and Social Progress
- Makes case for carbon taxes and other environmental actions even more compelling

# A few remarks on the broader global response

- Basic economic problem: the atmosphere is a global public good—everybody wants to receive benefits, nobody wants to pay costs
  - Key issue: how to share the burden
- Making matters worse: rich countries have contributed most of emissions in the past (and on a per capita basis continue to contribute more); but adverse consequences are likely to be felt in developing countries

# Concluding Comments

- Creating a “green economy” is not only consistent with economic growth, it can promote economic growth—especially when there is a lack of aggregate demand
  - Even more so if we measure growth correctly
  - Carbon tax may be an effective instrument for creating a strong green economy, simultaneously increasing aggregate demand, improving the environment, promoting allocative efficiency, and providing revenues that can be used for a variety of socially desirable purposes