SOCIO-ECONOMIC AND ENVIRONMENTAL IMPACTS OF POLICY SCENARIOS IN INDONESIA

Dawn Holland

Consultant to UNESCAP/Fellow, National Institute of Economic and Social Research

Building forward better: Securing inclusive, resilient and green development in Indonesia

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POLICY SCENARIOS FOR INDONESIA

- Joint research by Macroeconomic Policy and Analysis Section at ESCAP, UN country team for Indonesia, Ministry of National Development Planning (Bappenas)

- Applies ESCAP Macroeconomic Model, originally developed by ESCAP to support the design of economic recovery packages for countries in the Asia and Pacific region

- Model tailored to Indonesia’s economy, including an elaborated carbon tax channel to explore the impact of channelling carbon revenue into key policy; and modelling the interactions between tree cover preservation and emissions from land use change
THE ESCAP MACROECONOMIC MODEL

A complete global model:
- 46 individual full country models for the Asia and Pacific region, including Indonesia
- Smaller models of 9 key trading partners and 4 major regions

Founded on a standard macroeconomic framework, with additional channels to capture key social and environmental variables
- Structural econometric model
- Designed primarily for scenario analysis rather than forecasting
- Each country model has about 100 equations

Can be applied to a wide range of policy questions plus stress testing and debt sustainability analysis
KEY ACTORS AND FEATURES OF THE MODEL

Households:
- Consume
- Save
- Supply labour

Firms:
- Produce output
- Hire labour
- Invest

Government:
- Tax
- Spend
- Monetary policy

Poverty: Depends on income and post-tax inequality

Emissions: Depend on output, efficiency of production, the energy mix, forest cover

Global linkages: Via trade, remittances, financial markets, emissions and energy markets
A scenario is developed relative to a baseline set of assumptions.

The scenario asks, “what if [some assumption] turns out different than assumed?”

For example, new government spending programmes, an unexpected rise in oil price, a drop in world trade, etc...

Results are generally viewed in terms of % difference from the baseline.
Implementing a carbon tax

1) April 2022 carbon tax
2) Removing carbon-linked subsidies
3) Channelling carbon revenue towards spending priorities
4) Unilateral versus global carbon pricing

Ecological fiscal transfers to preserve forest cover
SCENARIO 1: PRICING CARBON EMISSIONS

Carbon price is set

- Decline in demand for fossil fuels and shift in energy mix
- Fiscal revenue generated
- Costs of production increase

- Energy input declines; potential output declines
- Pollution declines
- Government budget balance improves
- Part of increase passes to consumer prices
- Remainder squeezes firm profits

- Health benefits and rise in productivity
- Fiscal space created
- Inflation rises, consumer spending declines
- Investment declines; potential output declines
SCENARIO 2: ECOLOGICAL FISCAL TRANSFERS

EFT from central to local government

- Spending on environment protection rises
- Fiscal balance deteriorates
- GDP and employment rise
- Air pollution declines
- Tree cover loss declines
- Government debt rises
- Labour productivity rises
- LUCF emissions decline
SCENARIO 1a: THE APRIL 2022 CARBON TAX

- Applies tax of $2.13/tonne to 25% of (non LUCF) CO2
- Can make only marginal progress towards meeting emission reduction targets ...
- ... but important step to establish the institutional and administrative framework needed for a carbon tax scheme
SCENARIO 1b: REMOVING CARBON SUBSIDIES

- Withdrawing carbon-linked subsidies, equivalent to $10.87/tonne of (non LUCF) CO₂, will create additional fiscal space

- Channelling some of this space towards social protection can offset the costs of higher inflation on vulnerable households
SCENARIO 1c-1i: CHANNELLING REVENUE TOWARDS SPENDING PRIORITIES

- Spending on **social protection**: (Increases incomes, reduces inequality and poverty.)
- Spending on **environmental protection**: (Builds resilience against climate change, reduces pollution, reduces tree cover loss, reduces emissions)
- Spending on **health**: (Improves health outcomes, raises labour productivity and potential output)
- Spending on **energy efficiency and renewables**: (Reduces energy consumption, raises renewable share of energy, reduces pollution)
- Spending on **education**: (Reduces inequality, raises labour productivity)
- Spending on **connectivity**: (Improves financial inclusion, raises labour productivity)
- Spending on **debt reduction**: (Reduces debt, eases pressure on risk premium)
SCENARIO 1c-1i: CHANNELLING REVENUE TOWARDS SPENDING PRIORITIES

- Remove subsidies and raise carbon tax to $60/tonne by 2040

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<thead>
<tr>
<th>Scenario name</th>
<th>Net carbon revenue directed towards</th>
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<tbody>
<tr>
<td>1c</td>
<td>Social protection</td>
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<tr>
<td>1d</td>
<td>Environmental protection</td>
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<td>Connectivity</td>
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<tr>
<td>1i</td>
<td>Debt reduction</td>
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SCENARIO 1j: GLOBAL SPILLOVERS

• Coordinated regional or global action on carbon pricing will deliver positive economic spillovers compared to a unilateral carbon tax...

• ...and reduce risks of carbon leakage.
SCENARIO 2: ECOLOGICAL FISCAL TRANSFERS

- Encourage the conservation and restoration of forests, reduces air pollution and emissions from land use change.

- But if financed by issuing government debt may put upward pressure on the risk premium and squeeze out private sector investment.
SCENARIO 3: COMBINED GREEN ECONOMY SCENARIO

- Direct 25% of carbon revenue to social protection, remainder finances EFT scheme
• Taxing carbon will increase inflation temporarily, but has the potential to generate significant fiscal revenue.

• If carbon revenue is channelled back into the economy, it can increase economic activity; reduce inequality and poverty; make progress towards emissions targets and reduce air pollution.

• A combined green economy scenario that pairs an ecological fiscal transfer scheme with the introduction of a carbon tax can generate sufficient space to finance the transfers, deliver important environmental returns, while simultaneously supporting economic activity and social progress.
THANK YOU!