India’s climate change mitigation policies – A case for Market Based Instruments

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INTRODUCTION

- Currently a distant 3rd in global CO2 emitters among other countries, India is projected to emit at least as much CO2 as the United States in the year 2030 (EIA, 2015; WRI, 2016). This is double of what is required from India to restrict the global temperature increase to 2°C (EIA, 2015).
- Official policies to restrict GHG emissions in India are generally ‘traditional’ or ‘prescriptive’ in nature. For example: National Clean Energy Fund (a $2-3/ton cess on coal used to fund R&D in clean energy technologies), Green India Mission (afforestation program), public investment in renewable energy, Energy efficiency programs etc. (GoI, 2015).
- While the traditional prescriptive instruments should be noted for their specific focus, market-based instruments (MBIs) are considered to be more efficient from a long-term perspective as they create incentives for the agents to reduce emissions and allows them the freedom to innovate. MBIs are also cost-effective as they require less information from the polluter. (Field & Field, 2016).
- Despite a slow start, India has started using a cap-and-trade program for energy efficiency certificates among large manufacturers (Perform-Achieve-Trade program). The logical next step therefore is to explore the role of MBIs like carbon tax or emissions trading schemes for future policies.

OBJECTIVES

- The goal of this paper is to study the implications of a carbon tax on emissions, individual welfare across generations and explore possibilities of a ‘dividends’ by reforming the existing tax structure.
- An emission trading scheme has also been studied (not shown here) and further work has tried to assess the distributional implications of MBIs on lower income and socially disadvantaged groups.

RESULT AND CONCLUSION

- The initial U-shape pattern results from the trend in total tax revenue and from intertemporal shifting of consumption in response to a rising tax rate. The levels result from the size of the tax base for each instrument.

A perfect foresight 9-sector Overlapping Generations (OLG) Computable General Equilibrium (CGE) model based on the Auerbach-Kotlikoff (1987) OLG model, calibrated to the 2005 data for the economy has been used to analyze a policy scenario:
- Fossil fuels are taxed at the rate of $10/ton of CO2 component starting 2005. The rate increases by $10 every 5-years till 2050 when it becomes $100/ton and stays constant afterwards.
- The tax revenues can be used to reduce: consumption tax, labor income tax or capital income tax

RESULTS AND CONCLUSION

- A perfect foresight approach allows households to react in response to fiscal and taxation policies over their lifetime. This paper contributes to the literature on India’s environmental policies which is dominated by myopic households models.

REFERENCES