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POST-KYOTO CLIMATE POLICIES: FROM G8 TO L20

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Overview

In the debate on Post-Kyoto climate policy architectures there is concern about the effectiveness of the inclusive negotiation procedure associated with a Kyoto-type process [1,2,3]. A substantial leverage on negotiation outcomes may be achieved by working with a small number of countries representing the major emitters as well as economic and political powers. Such a group (perhaps along the lines of the Leaders 20 Summit – L20 – suggested by Canadian Prime Minister Paul Martin) may move forward with stringent unilateral emission reduction commitments [4]. We compare the economic impacts of this leadership against a global commitment which keeps with the same world-wide emission budget. We investigate the incentives for leadership by a limited number of countries under alternative allocation rules for the global emission budget. Our findings suggest that leadership might be preferred in case of the egalitarian rule, but costly under polluter-pays or ability-to-pay regimes. The cost burden of the leaders might be substantially smaller if leadership is restricted to a transitional phase.

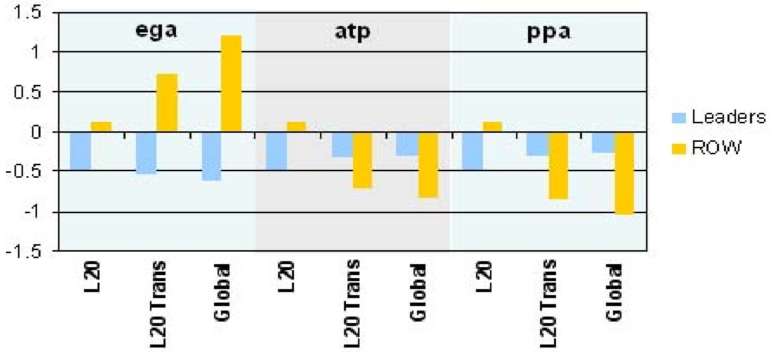
Methods

We describe the trade-off between limited and global coverage from an L20-leaders perspective: Given some world-wide emission limit over the next decades, the pay-off to include other countries in a potentially cumbersome UN-debate on global burden sharing declines with the degree to which participation of countries outside L20 reduces compliance cost of the leaders.

As a cost-effectiveness framework for numerical analysis we use an intertemporal multi-sector, multi-region computable general equilibrium (CGE) model of global trade and energy use. Beyond the consistent representation of market interactions as well as income and expenditure flows, the dynamic model setting accommodates an assessment of the adjustment path of economies to exogenous policy constraints over time.

Results

Our simulations suggest that leaders prefer leadership under an egalitarian allocation rule (ega). For ability-to-pay (atp) and polluter-pays rules (ppa) leadership is costly to the leaders but these costs can be lowered if unilateral action is limited to a transitional phase. The figure displays welfare implications in percent of the different regimes for both the leaders moving forward with ambitious climate policy targets and the rest of the world (ROW).



Conclusions

We have identified a non negligible trade-off between limited and global coverage from an L20 perspective if leadership is assumed to last for ever. If, however, leadership is restricted to a transitional phase the welfare implications might be reduced substantially. The main driver for the welfare implications turns out to be the income transfer via the carbon endowments. While for an egalitarian allocation rule leaders would prefer an L20 scenario to global coverage for all other analyzed allocation rules make the potential leaders better off if global coverage of reduction commitment is assumed.

Literature

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