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The Political Economy of Carbon Pricing: a Panel Analysis

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If we want a 50% chance of keeping the rise in Global Mean Temperatures below 2◦C and avoid the most dramatic effects of climate change, global 2050 emissions levels must be 40 to 70% lower than in 2010 and global 2100 emissions levels must be near zero or below (IPCC, 2014).[1] To reach this objective in a timely and cost-efficient way, economists have long argued for a credible carbon pricing mechanism. However, such mechanisms have been at best a very limited part of any climate change strategy.[2]

Our analysis (Dolphin et al. 2016) has examined the political economy barriers that continue to hamper their development. On the consumption side, the willingness to pay for carbon remains limited and well below the central estimates of the Social Cost of Carbon, even in richer countries.[3] On the production side, we find evidence of the negative impact of the coal-intensity of the electricity generation sector and the relative size of the industrial sector. Our regression analysis of 138 jurisdictions estimates that moving from a 25% coal share to a 75% coal share in electricity is associated with a US$2/t$CO_2$e reduction in the effective carbon price. The relative share of industry in the whole economy affects the stringency of a scheme in a similar fashion.

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[1] Based on IPCC mitigation scenarios reaching 450 ppm CO_2-eq by 2100.

[2] Moreover, policymakers have meanwhile continued to subsidise the consumption of fossil fuels: consumption subsidies worldwide amounted to $493 billion in 2014 (IEA, 2015).

[3] Evidence of this is provided for the US by Jenkins (2014).

Furthermore, the evidence suggests that the level of economic development positively influences the existence and stringency of carbon pricing mechanisms. In fact, a thousand US$ increase in GDP per capita is associated with a rise in the effective carbon price of 25 US cents/tCO_2e on average. This result may, however, be driven by the fact that richer Annex-I countries to the Kyoto Protocol had to take GHG emissions reduction actions. Second, it appears that introducing carbon-pricing policies becomes easier once the electricity sector (and the economy in a broader sense) has already been partially "de-carbonized", possibly by means of other policies or favourable changes in technology and fuel prices. This supports the design of a climate change mitigation strategy that comprises a mix of complementary tools, particularly those that improve energy efficiency and so lower total energy use and hence GHG emissions. It also suggests that carbon pricing may not be the first policy to introduce when designing a climate change mitigation strategy.

The above discussion does not, however, imply that we should refrain from introducing carbon-pricing mechanisms, even at a sub-optimal level. Both static and dynamic arguments support a positive price of carbon. From a static perspective, pricing carbon, even at relatively modest levels, helps internalize at least some of the environmental externality and makes some contribution to GHG emissions reduction. From a dynamic perspective, a positive (albeit sub-optimal) price of carbon may in itself contribute to the creation of a "clean" path dependency and foster the political acceptability of socially optimal prices in later periods. It also signals a commitment to decarbonize that may influence the expectations of those making durable investment decisions in e.g. generation assets. Nonetheless, as the data presented above suggest, evidence of a willingness to embrace more significant levels of carbon pricing has yet to materialize. There are, however, encouraging signs in the gradual extension of the coverage of carbon pricing at the global level.

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