RESEARCH

Raising climate finance to support developing country action: some economic considerations

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Abstract

This article explores the principles that should guide efforts to raise finance for climate action in developing countries. The main conclusions are that, first, there is an important role for private finance, which would be facilitated by having pervasive and broadly uniform emissions pricing around the world. Second, public finance is warranted by a range of market – and policy – failures associated with climate change and its mitigation. Third, raising tax revenues may be preferable to borrowing as a means of raising public finance, although the economics is not clear-cut. Public finance theory advocates taxing 'bads', a number of which have escaped the tax base so far. However, it discourages hypothecation of specific revenue streams to particular uses. Fourth, how much could or should be raised by the many specific proposals for finance for climate action in developing countries is often uncertain. So is how multiple schemes would interact. Several schemes could depress carbon prices. Earmarking is

often assumed to be justified despite arguments to the contrary. Fifth, two sets of proposals do particularly well when judged against this analysis: (i) expanding the scale and scope of the Clean Development Mechanism (CDM) and (ii) expanding the use of international financial institutions' balance sheets.

Cet article explore les principes devant guider les efforts visant à lever des fonds pour l'action climatique dans les pays en développement. Les conclusions principales sont, en premier lieu, le rôle important du financement privé, lequel serait facilité par l'établissement d'un prix des émissions généralisé et suffisamment uniforme mondialement. Deuxièmement, la finance publique garantie une série d'échecs liées aux marchés _ et aux politiques _ associés au changement climatique et à sa lutte. Troisièmement, l'augmentation des recettes fiscale serait préférable à l'emprunt comme moyen de mobilisation de la finance publique, bien que les processus économiques impliqués ne soient pas toujours nets. La théorie de la finance publique préconise l'imposition du « non vertueux », dont une partie échappe encore à la base d'imposition. Mais elle décourage l'hypothèque sur les flux spécifique de revenus réservés à des usages particuliers. Quatrièmement, la quantité des fonds qui pourraient ou devraient être levés en fonction des nombreuses propositions spécifiques de financement de la lutte contre le changement climatique dans les pays en développement est incertaine. Il en est de même du mode d'interaction entre les multiples systèmes. Certains systèmes pourraient faire baisser le prix du carbone. L'affectation des fonds est souvent reconnue comme une action justifiée malgré les arguments à l'effet contraire. Cinquièmement, deux types de propositions sont particulièrement bien jugées par cette analyse : (i) augmenter l'échelle et la portée du MDP (ii) répandre l'usage des bilans des institutions financières internationales

Keywords:

climate finance | development assistance | economic assessment | financial mechanisms | hypothecation | international investment | less developed countries

Mots clés :

aide au développement | évaluation économique | finance climatique | hypothèque | investissement international | mécanismes financiers | pays les moins développés

Notes

Defined as non-Annex 1 countries under the Kyoto Protocol.

Defined as Annex 1 countries under the Kyoto Protocol. The 47 countries in the UNFCCC's category of Least Developed Countries, in contrast, accounted for just over 4% of emissions, and their aggregate emissions had been growing at an average 1.5% per year – a reminder that developing countries are by no means a homogeneous group as far as emissions are concerned.

Different ethical frameworks point to different allocation schemes in global cap-and-trade proposals, as illustrated by Höhne et al. (2005). However, virtually all entail large transfers to developing countries. A more general discussion of the interaction of economics, ethics and climate change can be found in Dietz et al. (2009).

The second fundamental theorem of welfare economics states that, under certain (rather restrictive) conditions, every Pareto-efficient allocation of resources can be achieved by a competitive market equilibrium. When it holds, the problems of efficiency and distributional impacts across individuals can be separated (Varian, 2009). If introducing emissions pricing to correct the inefficiency induced by the GHG externality has adverse distributional consequences, these can be corrected by lump-sum transfers, set to ensure that at least someone is better off after the pricing is implemented, while no-one else is made worse off. The point here is not to rehearse the restrictiveness of the assumptions necessary for the theorem to hold (complete markets, perfect competition, etc.), but to emphasize that in this framework lump-sum transfers are necessary for the introduction of emissions pricing to be unambiguously welfare-enhancing.

Private finance is therefore likely to be easier to raise for project operation, where revenues and costs are more closely aligned in time, than for capital investment, unless there is public intervention.

See, for example, Nordhaus (2007), who makes a trenchant case for carbon taxation in preference to global quotas, and Metcalf (2009).

Stern (2009) is an example. Frankel (2009) is another analysis that is sympathetic to the markets-based approach behind Kyoto.

I am grateful to an anonymous referee for raising the issue of fossil-fuel exporters. Aggressive mitigation policies are likely to lower the value of their resources and may depress (carbon-price-exclusive) fossil-fuel prices. To avoid Sinn's ‘green paradox’ according to which climate change policies may accelerate emissions (Sinn, 2008), it is important that they participate in any global deal. What side payments might be required is a moot point.

Concern about the size of rents on intramarginal abatement opportunities has led to various proposals for price discrimination in carbon markets, not least with respect to the treatment of abatement opportunities in forest management.

The relationship between environmental policy and business cycles is discussed in Bowen and Stern (2010).

Unfortunately, governments are often better at identifying goods that they should subsidize because of the presence of market failures than they are at identifying untaxed bads. However, revenues from environmental taxes are surprisingly low in many countries (European Commission, 2008, 2010a).

This literature is extensive and represents perhaps the richest strand of discussion of public finance issues in the climate change policy arena. See, inter alia, Bovenberg and Goulder (2002) and Schöb (2003).

UNEP Risø Centre website, accessed 24 August 2010.

Developed-country investors often sign emission reduction purchase agreements that involve payments at an early stage in the CDM project (often before it is registered) but at a price below the market price for CERs. Thus the funding provided differs in timing and amount from the market value of the CERs generated.

The CDM has been much debated in the context of the evolution of the international climate policy regime. See, for example, Schneider (2007) and papers from UNEP's Centre for Capacity Development for the Clean Development Mechanism (http://cd4cdm.org/index.htm). The Green Investment Schemes for post-communist Annex 1 countries may provide a useful model for a more flexible CDM (Tuerk et al., 2010).

Haites points out that the CDM levy can be interpreted as being imposed on the CERs issued or the CERS traded internationally, as they will all be used in developed

countries. The base – issued or traded – makes a huge difference when a levy is to be applied to emission reduction units and AAUs. In the case of AAUs, it would be virtually identical to the Norwegian proposal.

Some useful references include Müller and Hepburn (2006), Faber et al. (2010), IMO (2009), ODI (2008) and McCollum et al. (2009).

I am indebted to an anonymous referee for alerting me to this argument.

The IMF proposals are discussed in IMF (2010). Williamson (2009) reviews the economics of SDRs, which are essentially an international form of fiat money. The opportunity cost of using them for a green fund would be the reduction in their utility as reserve assets for the subscribing countries.

A basis point is 1/100 of a percentage point.

Of course, more aggressive mitigation and higher carbon prices would also warrant more action by developing countries and more finance from developed nations. It is not clear whether policy makers see the US$100 billion target as consistent with the needs of developing countries in a world that takes the 2°C limit seriously.

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