



Climate change: turning costs into income opportunities

Concerns about the high costs of climate change mitigation dominate the global debate to be resumed at Copenhagen. The question of who is to pay for the investments that will undoubtedly be needed receives far greater attention than the corollary question of who is to gain from them. From a macroeconomic perspective, one economic agent's cost is always another agent's income. But as this policy brief argues, the concept of cost is misleading in the context of climate change mitigation. Once the process of structural change necessitated by climate change mitigation is in full swing, there will be huge new market opportunities.

The policy issue is: how will costs and incomes be distributed in this process? UNCTAD believes that developing countries, although they face considerable costs, can also generate new income if they adapt their development strategies to the requirements of climate change mitigation. This policy brief also stresses the role of government in facilitating the process of structural change, not only by fostering "green" consumer preferences, but also by implementing pro-active industrial policies that support the production of climate-friendly equipment and appliances. In short: The world can move to a low-carbon economy without feeling paralysed by the costs – and can do so without sacrificing growth in the developing world.

The macroeconomic logic of climate change adaptation

The global debate about climate protection is dominated by concerns that the "costs" of meeting new needs may be quite high – either for the entire world, or for some especially vulnerable groups of countries. Hence, the main point of contention that has emerged between developed and developing countries is to identify who will bear the cost burden of climate change adaptation and mitigation. Developing countries hold that in the past, such changes were induced primarily by the economic development of wealthier nations, and that the latter should shoulder the financial burden of climate clean-up. While this debate reflects very legitimate concerns, it neglects the fact that the production of the new goods required to achieve climate change mitigation objectives will generate new income. With appropriate support from developed countries, there is great potential for developing economies in the decades ahead to gain from these new opportunities.

So far, the debate about the costs of climate change has largely ignored the economic truth that microeconomic costs are always mirrored in the creation of income for other microeconomic units. Take a simple example: reliable estimates show that the microeconomic cost of producing one kilowatt-hour of electrical power from any coal plant in the world amounts to 2 cents of a US dollar, and that producing the same quantity of readily usable energy in a solar power plant

costs 7 cents. Considered in isolation, this may pose an apparently insurmountable hindrance to developing countries wishing to use the environmentally friendly solar plant. It is also from this perspective that the United Nations has estimated that the shift to renewable energy would require new investments (and the accompanying technology) of up to \$600 billion annually for a decade.

But such a conclusion might be less intimidating if the question of "who will bear the brunt of the costs" were formulated instead as "who will benefit from higher expenses by producers and consumers for alternative energies and the equipment to use them?" To answer the question properly in developmental terms, a wider lens is needed than that proffered by calculating costs solely at the micro level. Taking the above example further, the overall instalment costs for a typical developing-country coal plant are mainly those represented by imported goods and services. If future industrial development in such a country is directed towards the domestic production of alternative energies and the appliances and equipment that use them, the higher "cost" of the alternative equipment and energy will be mirrored in the higher domestic income generated by their production.

The imperative of structural change

From a macroeconomic perspective, environmentally induced structural change has the same implications as shifts in demand resulting



from product innovation in dynamic private markets. But the “cost”, for example, of introducing new information and communications technologies like mobile phones to replace more traditional goods has rarely been discussed – except in terms of import content. And in many countries, import content is higher for goods in which the new technology is embedded.

Any structural change on a global scale has both winners and losers. The net cost of such change in a given sector and location is the loss of specific jobs – mirrored, however, in the creation of other jobs in other sectors or locations. Thus, there is no overall loss of jobs or income. The same holds true when labour-intensive goods and services are replaced by capital-intensive ones. If the higher value added of capital-intensive production and the associated overall higher labour productivity are ultimately reflected in higher incomes for the consumers of these products, overall income and demand will increase, without entailing an overall loss of jobs or higher unemployment.

Confusion about the costs of the structural transformation required for a low-carbon economy stems from the economic orthodoxy that dominates the debate. According to this view, the imperative of re-allocating scarce resources for the mitigation of human-induced environmental damage is an “external effect” of the production of “normal goods”. Theoretically, such goods are produced by private entities and are demanded by allegedly «sovereign» consumers, who exercise their free will to choose what they consume according to their utility preferences. These goods are produced in order to satisfy demand without having to factor in the (external) welfare cost to society as a whole. This argument, however, is fundamentally flawed, based as it is on an idealistic and unrealistic view of the consumer and an a priori hostile attitude towards any government intervention in the market.

Indeed, once countries expand their income and production beyond the minimum needed to meet basic or subsistence needs, consumer sovereignty becomes a fiction. Most of the “preferences” that are assumed in a process of development are not the “natural preferences” of private households. Generally, consumers are in a passive position, and producers instil in them new «needs», primarily through advertising. More realistic and relevant than the idea of consumer sovereignty is the Schumpeterian notion that through a process of “creative destruction”, new “preferences” replace old ones – mainly driven by a pioneer, an entrepreneur who creates new production through innovation and versatile marketing.

But this process of “instilling new consumer preferences” can also be initiated by enlightened government when new public needs arise that are not detected by the instinct of private entrepreneurs. The new needs triggered by the «entrepreneurial spirit of dynamic governments» can be met by market entities, in the same way that non-pioneer companies follow a leading private pioneer in transforming the structure of supply and demand as new goods and services are brought to market. From this perspective, there is nothing peculiar about governments initiating a process of structural change that favours new public goods.

If large parts of the world, driven by governments putting their heads together, decide to enter the age of the low-carbon economy and leave the costly fossil age behind, they can do so at any time without the up-front costs being the overriding concern. If they are willing to push for a consistently rising relative price of fossil energy through carbon taxes or cap-and-trade schemes, they will spur new technologies and create new markets and income opportunities, not only for those economies with natural advantages in the production of clean energy, but also for those that are able to build new dynamic comparative advantages in industries producing low-carbon equipment and appliances.

The «cost» of new, clean investment varies for different groups of developing countries. But even for those without natural resource advantages, it would be economically hazardous not to follow the path of these new technologies. As new technologies permeate through the production process of many products in the globalized economy, the potential to produce globally competitive goods and services is significantly reduced if a country is insulated from the process. For a single country or group of countries to follow a totally different path will indeed be costly. Their expected savings from maintaining lower energy costs will be reflected in fewer domestic income opportunities, and the de-coupling from global technological advances in this area will reduce their chances of competing on world markets for high value-added products.

The world is looking to Copenhagen to deliver on emission reduction targets and commitments to finance adaptation and mitigation measures worldwide, through a combination of instruments. But coherent climate policy must also ensure that developing countries retain sufficient space to implement pro-active policies in support of industries that produce, or participate in the production of, low-carbon equipment and appliances. And developing-country governments must use the space they have for such policies, which is greater in sectors that produce goods in which climate-friendly technology is embedded than in other sectors.

Coherence in climate policies also requires addressing constraints on accessing and adapting certain technologies that may be the main hurdle to developing countries’ joining the rest of the world on the new technology path. In such instances, the developed countries should step in quickly by providing additional funding and investment to facilitate technological adaptation and related structural transformation. They should also abandon increasingly obsolete notions, such as the national protection of private intellectual property rights in areas affecting global welfare. Private holders of patents for the production of alternative energies and low-carbon equipment should be compensated – by the international community or by national governments – and they must be assured that their ideas will be more quickly and widely adopted than under the usual circumstances, in which private investors strive to become global market leaders, or monopolists, in a given technology. National property rights protectionism and laissez-faire market fundamentalism should not stand in the way of meeting a global challenge of the magnitude and complexity posed by global warming.