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Southeast Asia's Stakes in Pricing Carbon

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Workers assembling solar panels on the shore of the Tengeh reservoir as part of the construction of a floating solar power farm in Singapore. In Singapore, thousands of panels glinting in the sun stretch into the sea as part of the land-scarce city-state's push to build floating solar farms to reduce carbon emissions. Photo: Roslan RAHMAN/AFP taken on 3 February 2023.

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EXECUTIVE SUMMARY

- Southeast Asia is on the frontline both as a victim of climate disasters, and as a contributor to greenhouse gas emissions causing runaway climate change.

- Especially given constraints on a low-carbon energy transition, it is in the region's interest to price carbon emissions either through carbon trading, or better, implement a carbon tax.

- Singapore has implemented a carbon tax, and Indonesia made a start on coal, but it is time for all countries in the region to adopt a sizable carbon price to discourage fossil fuels and encourage renewables.

- While global estimates of avoided climate damages from carbon pricing far exceed the costs of pricing carbon, the perceived conflict between short-term growth and carbon pricing is sharp in Southeast Asia.

- To allay fears of losing competitiveness, it pays for ASEAN, in fact ASEAN+6, to move in unison, even if differentiated by broad income levels, with Asia-Pacific's finance ministers championing the reform.

INTRODUCTION

The trajectory of climate change holds extremely high stakes for Southeast Asia[1] as the region is the biggest incremental contributor to GHGs, and the most vulnerable to climate disasters.[2] The region's climate actions have not been impressive thus far, and carbon emissions and deforestation continue to go in the wrong direction. With business as usual, the region's GHG emissions could approach 8 GtCO2e by 2030.[3] But the region has recently given attention to decarbonization as well as adaptation in the face of growing awareness of the dangers from a rise in sea levels and extreme weather events.

Except for the Philippines and Myanmar, others in the region have announced Net Zero or carbon neutrality commitments. The biggest breakthrough will come from a rapid transition to low-carbon energy use and a sharp cut in the energy intensity of economies. Especially for this region starting with a high share of fossil fuels in the energy mix, carbon pricing—through carbon markets or carbon taxes—could be a valuable step in decarbonisation and achieving anything close to ASEAN's target of 23% of renewable energy mix by 2025.[4] Importantly, the implicit price for clean air also motivates investing in clean energy, and governments can raise money to finance green investments.

ECONOMIC RESPONSES

The goals of climate mitigation and economic growth can be achieved by imposing a price on CO_2 emissions that reflects their damages. Over 60 systems of carbon pricing exist today but cover only one-fifth of global GHGs.[5] In June 2021 G-20 finance ministers endorsed the application of carbon pricing as an instrument for shifting to low carbon growth trajectory.[6] Of 38 OECD countries and G20 countries combined, covering 80% of world emissions, only 10 countries were pricing carbon at half the mid-range of the estimated cost of CO_2 emissions for 2020.

One approach is using an emissions trading scheme giving policymakers control over resulting emissions levels. There are complexities in designing carbon trading. But it can encourage polluters to switch to more sustainable energy sources, since the price of pollution has now risen.[7]

Another way is to tax businesses and households that pollute. Economists have long favoured carbon pricing because of its efficiency in discouraging effluents,[8] but it would be only a part of the package of needed measures.[9] The tax rate needs to be chosen, and effectiveness of implementation and the use of the tax revenues assured. If the tax is big enough, producers would cut pollution to avoid paying it. Conversely, if the tax is too small to be meaningful, it would just lead to inaction or leakage.

The highest rate has been set by Denmark for 2025 increasing to €150/tCO_2 or US$165 n 2030.[10] But the global average is only US$6 a ton of CO_2. Singapore is rightly emphasizing carbon taxation as part of its climate policy. High and effective carbon taxation across major polluters like China, the US, India, Russia and Japan (which together account for 60 percent of global effluents) could move the needle on global pollution.[11]

One advantage is that the tax revenue raised could be used to support cleaner fuels. Importantly, a high-enough price of carbon will boost incentives for investment in low-carbon or carbon-reducing technologies, creating environment-friendly operations. Governments can also finance adaptation such as coastal embankments and disaster risk reduction more generally. A part of the revenues can also finance safety nets for the poor.

It is worth remembering that one fifth of global emissions are import-related. It would make sense that a carbon tax also targets discharges contained in imports that are usually excluded from country contributions. There are well-known difficulties in implementing such a tax, issues of rules of origin being one. But the divergence between consumption and production-based emissions has been rising. For example, instead of a 3 percent increase in production-based emissions since 1990, the US would have a 14 percent increase if the measurement is consumption-based.[12]

The IMF has a concrete proposal for a global minimum carbon price.[13] It would set price floors of $75, $50, and $25 per ton of carbon for the US, China and India, respectively. This could help achieve a 23% reduction in emissions by 2030. Southeast Asia could see benefits via revenue generation and its allocation to green investments. A domestic tax in Southeast Asian countries should also prevent border taxes being imposed by the European Union (EU) or the US.

The main benefit of carbon pricing is the avoided damage.[14] Under the EU's emission trading system, modest annual reductions of some 1% annually were noted, but that is across countries and sectors employing low rates and low coverage. By one estimate, the EU's emission trading was instrumental in cutting GHG emissions of power generation and energy-intensive industries by 43% over the past 16 years. In Sweden (with the highest rate in the world, after the Danish now), GDP increased by 78% during 1990-2017, while domestic GHGs decreased by 26%.

On the cost side, European countries indicate a zero or modest positive impact on GDP and employment. British Columbia's carbon tax has cut emissions without hurting growth. In Canada, for a C$50 carbon tax, petroleum and coal, agriculture, power and chemicals were estimated to face unit production cost increases of 5%; 40 industries by more than 1%, and the rest by 0.6%: the economy 2.4%. In the US, the electric power industry would suffer a far greater impact from a carbon tax than would most others.

A carbon tax must be complemented by tough environmental regulations in order to be effective. The tax revenues can be used to protect vulnerable segments of the population or to reinvest in green sources of energy. Pricing also gives a boost to investors inclined to promote renewables, protect forests, or invest in clean technologies.[15] All this is relevant for Southeast Asia.[16]

A CARBON TAX IN SOUTHEAST ASIA

Singapore only has 0.1 percent of the global carbon footprint, but its emissions per person is 27th highest out of 142 countries (2018). The country depends on natural gas and has geographical limitations in switching to solar and wind. But all this is even reason to scale up carbon tax and encourage energy producers to cut emissions.

In 2019, Singapore set the carbon tax at S$5 or US$3.7 per tonne.[17] This was at the low end of a range that spans Japan's US$2.60 (S$3.50) per tonne to Sweden's US$137 (S$184) per tonne. On the other hand, Singapore's tax covers four-fifths of the country's emissions compared with only one-third in the EU. A solid case can be made for Singapore to raise carbon tax to S$50 per ton. In 2020, the government announced S$25 for 2024, and S$45 by 2026, and possibly S$80 by 2030. Complementing the tax should be investments in solar and wind, including buying clean energy from neighbouring countries.

Under its Tax Regulation Harmonization Law (2021), Indonesia – the world's top coal producer – had originally intended to implement a carbon tax from April 2022, which would have charged US$2.10/tCO2e on coal plants. Though higher commodity prices arising from the war in Ukraine caused an indefinite delay in the tax's introduction, the Indonesian Government seems committed to its implementation. Thailand, Vietnam, and Malaysia have not adopted carbon pricing, but changes may be on the horizon. Malaysia and Thailand are considering putting emission trading and have established voluntary carbon exchanges. A carbon credit system is being considered in the Philippines.

In implementing a carbon tax, the coverage of polluters and the tax rate are decision variables. It would make sense to target the largest polluters and ones with elastic emission schedules, so that emissions are indeed cut significantly. In Singapore, power generation accounts for 40% emissions and is likely responsive to a carbon price, especially with the adoption of new technologies. Transport is less so across Southeast Asia.

The impact on business is an important consideration.[18] It is not uncommon to let companies using international carbon credits to offset a part of their taxable emissions. There is also a good rationale to have safety nets for low-income segments facing utility price increases. Carbon revenues can be used to cushion the consumer impact. Some ask if "emission intensive trade exposed" enterprises should be exempted from the carbon tax based on concerns of competitiveness and leakage effects. It turns out that for this purpose, border carbon adjustments are better than carbon tax exemptions for the domestic exporting firms. A border carbon adjustment would put a carbon tax on imported energy-intensive and trade-exposed products. Or perhaps better, and certainly simpler, an output based rebate would compensate vulnerable domestic exporters based on their production.

ROADBLOCKS

Industrial firms argue about losing their competitive advantage to exporters from countries with a lower carbon price. This concern can be minimized if ASEAN as a block adopts carbon pricing. Canada, EU, Japan, Singapore, and others also allow some exemptions to prevent

"carbon leakage", where firms consider relocating elsewhere. Political pressures from global events also complicate the picture: for example, energy prices in 2022 led the EU to sell millions of carbon permits, causing a 10% drop in carbon prices.

The impact of higher prices on low-income groups needs to be addressed. The EU excludes transport, where higher costs would be passed on to voters directly. Singapore provides rebates for consumers hit by utility price rise. The Californian system, which covers a small number of big emitters making up 80% of the state's emissions, uses proceeds from the sales of carbon permits partly to subsidize electric cars.

Australia illustrates the difficulties even when new revenues are used to compensate consumers. Tax increases were very gradual, yet the carbon tax remained politically vulnerable. When a new conservative government took office, it repealed the 2012 tax just two years after it was instituted. Sweden handled some of these political constraints well.[19] Taxes were started on fuels for transport and heating in 1991, going from below US$30 to over US$120 per ton of CO2. Industry faced a favourable rate initially, but increases were phased in. The tax was also presented as part of a larger package aimed at lowering overall taxes, combined with social safety nets.

CONCLUSION

The question is if a full-fledged application of market interventions could make a dent on the climate crisis.[20] This paper favours all countries adopting carbon pricing through a significant carbon tax that is levied on the pollution source. This needs to be complemented by a high enough quantitative restriction on fossil fuels, in addition to eliminating all subsidies for this pollution source. Southeast Asia needs to cut its carbon emissions and be part of the climate solution that is critical for its own survival. A swift and ambitious move on the adoption of a region-wide carbon tax, even if differentiated across countries, would be a way forward. [21]

Though a carbon tax is no different from the penalty imposed on negative externalities, ranging from water pollution to the purchase of cigarettes, there is the fear of the unknown. The biggest is the concern over losing competitiveness in the short term. The idea of a uniform move, even if differentiated by broad income levels, should address this worry, especially if ASEAN plus China, Japan, Korea, India, Australia, and New Zealand decide on a carbon price policy. Asia Pacific is a region that has everything to lose from runaway climate change but is heavily constrained on making a swift low-carbon transition. That is more reason to do what it can by way of carbon pricing to open unexpected avenues of cleaner energy—all the while raising much needed tax revenues. The leadership for this move must come squarely from the finance ministers of ASEAN+6.

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