Commentary 1

Title of the article: 'It can no longer be free to pollute:' Updated climate plan includes carbon tax hikes

Source of the article: "'It Can No Longer Be Free To Pollute:' Updated Climate Plan Includes Carbon Tax Hikes". Ctvnews, 2020, https://www.ctvnews.ca/politics/it-can-no-longer-be-free-to-pollute-updated-climate-plan-includes-carbon-tax-hikes-1.5227337. Accessed 17 December 2020.

Date the article was published: 11 December 2020

Date the article was accessed: 17 December 2020

Date the commentary was written: 17 December 2020

Word Count: 800

Section of the syllabus to which the article relates: Microeconomics

Key Concept: Intervention

Article

OTTAWA -- The federal government has released a $15-billion plan to meet its climate change commitments that includes **steady increases to its carbon tax in each of the next 10 years.**

"It can no longer be free to pollute anywhere in the country," Prime Minister Justin Trudeau said Friday.

The plan includes money to encourage heavy industry to reduce its emissions, for communities to make buildings more energy efficient, and for remote communities to get off diesel-generated power.

The aim is a 32 per cent reduction in emissions by 2030, slightly more than Canada's 30 per cent Paris agreement commitment. Ottawa hopes to reach 40 per cent reductions when provincial programs are layered on.

But the plan's centrepiece is an increase in the federal carbon price.

That price will continue to increase by $10 a tonne a year until it reaches $50 in 2022. Trudeau announced increases will carry on and get steeper after that -- $15 a tonne per year.

By 2030, the price is to be $170 tonne -- enough, say federal officials, to increase the price of gas at the pump by 27.6 cents a litre.

Trudeau said the tax will continue to be rebated and that most families should get more back than they pay.

"We are continuing to move forward and putting more money in the pockets of Canadian families by increasing the price on pollution."

Trudeau took aim at provincial premiers such as Jason Kenney in Alberta and Scott Moe in Saskatchewan, who have challenged the constitutionality of a federal carbon tax.

"There are some places in this country that still want to make pollution free again," he said. "We're not going to do that."

Federal Climate Change Minister Jonathan Wilkinson said discussions with the provinces and territories on the carbon price have already begun and will continue.

The Supreme Court is expected to rule in the new year on the provincial challenges to the carbon tax. Trudeau wouldn't say how a provincial victory could affect the plan.

About $7 billion of the $15 billion in the plan had been previously announced for programs such homeowner retrofits, tree-planting, conservation and zero-emission vehicle rebates.

The biggest piece of what's left -- $3 billion -- is to go to industry. Large industrial emitters will be able to apply for money for projects that either reduce emissions, bury them underground or offset them.

The industrial carbon tax is to rise along with the consumer price. But industries that compete internationally will continue to pay the levy only on emissions that exceed the average for their sector.

Municipalities are to receive $1.5 billion to improve the energy efficiency of buildings such as arenas and halls. Nearly $1 billion is to go to improving Canada's electrical grid.

Remote communities are to get $300 million to reduce emissions from power generation.

The government plans to go ahead with regulatory proposals such as a clean fuel standard intended to reduce greenhouse gases from vehicle fuels. Also under consideration is some form of border tariff to protect Canadian industries from competition from jurisdictions with lower climate standards.

The Business Council of Canada welcomed the federal plan.

"Canada's leading companies take seriously the need to fight climate change," said president Goldy Hyder.

Conservative Party environment critic Dan Albas said the Liberals should have ensured the provinces were on-board before releasing the plan.

"The environment is an area of shared jurisdiction and Canada's Conservatives will respect the jurisdiction of the provinces and territories by scrapping Trudeau's carbon tax," Albas said.

However, Conservative leader Erin O'Toole told a Quebec audience that his party will vote in favour of a Liberal bill requiring Canada to reach net-zero emissions by 2050.

Green party leader Annamie Paul welcomed the Liberal plan, but called the 30 per cent reduction target outdated. Jurisdictions such as the European Union are aiming at 55 per cent, she said.

She pointed to the Liberal government still funding fossil fuel developments such as the Trans Mountain pipeline expansion.

"We can't have the government say on the one hand that they are climate warriors and on the other they don't say anything about their continued investment in TMX and in fracking," Paul said.

The plan got high marks from environmental think tanks.

"If they follow through with all this, that closes the gap between rhetoric and policy action," said Dale Beugin of the Canadian Institute for Climate Choices.

He said the plan's 10-year time frame gives businesses a clear picture of what's ahead. "That creates incentives to create long-term investment."

Isabelle Turcotte of the Pembina Institute warned that the plan requires industry as well as the provinces and territories to co-operate.

"It's a call to collaboration. We need all provinces and the private sector to add to this."

The proposed carbon price wouldn't be the world's highest, but it would be "really robust," she said.

"Canada deserves some kudos here."

Commentary

This article reports the planned carbon tax hikes in Canada, where it is set to increase from the current $30 to $170 per tonne of carbon emitted by 2030. It will first increase by $10 every year until 2022, followed by $15 increments for the rest of the decade.

This is an example of government **intervention** to correct for a negative production externality. Negative production externalities occur when the production of a good leads to negative side-effects on other people who are not part of these actions and whose interests are not considered (Tragakes). In this case, the production of certain goods leads to the release of carbon dioxide into the atmosphere, a greenhouse gas that is a major contributor to climate change. This negative side-effect is not reflected in the price of the good, and therefore, it is overproduced relative to the social optimum, leading to market failure. Hence, government **intervention** in the form of a carbon tax is one method to internalise this negative externality.

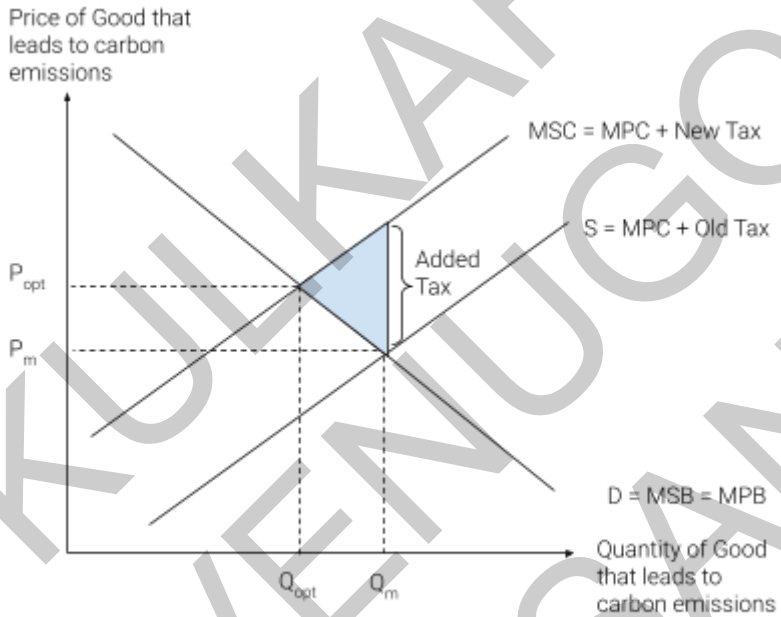

Figure 1: Negative Production Externality Due to Carbon Emissions

In Figure 1, the demand curve, D = Marginal Private Benefit (MPB) = Marginal Social Benefit (MSB), reflects the benefit to society and the benefit to the consumer from the consumption of one unit of a certain good whose production results in carbon emissions. The supply curve, S = Marginal Private Cost (MPC) + Old Tax, reflects the current cost of producing such goods. The Marginal Social Cost (MSC) curve represents the cost to society due to the production of one more unit of the good. Currently, the market equilibrium is given by the intersection of the demand and supply curves: quantity Q_m and price P_m. However, the socially optimal outcome is given by the intersection MSC = MSB, giving quantity Q_{opt} and price P_{opt}. Currently, the equilibrium quantity is greater than the optimum quantity as the cost to the environment is ignored at the price of the

good. This misallocation of resources results in a welfare loss, depicted by the blue area in the diagram.

By hiking the carbon tax, the government effectively increases the cost of production of goods that result in carbon emissions. This causes an upward shift in the supply curve towards the MSC curve. Consequently, producers would cut down on production, and the equilibrium quantity would decrease to the optimum quantity Q_{opt}. In effect, the overallocation of resources to the production of such goods is corrected.

Aside from internalising the negative externality of producing products that cause carbon emissions, this tax has two main advantages: the increased tax revenue and the incentivisation of more sustainable production methods. Given the extent of goods that have production methods resulting in carbon emissions, the government will likely receive substantially more tax revenue. Due to the year on year increase, the revenue has the potential to increase even further over the next decade. This revenue can be reinvested into policies that subsidise firms that use sustainable production methods or assist firms in transitioning to such methods. This, along with the increased production costs, will incentivise sustainable, carbon-neutral production of goods. The substantial projected carbon tax of $170 in 2030 is likely to greatly increase the competitiveness of low-carbon firms compared to firms with a large carbon footprint. This pushes firms to innovate and decrease emissions to remain competitive. The steady increase gives time for firms to be able to make this transition. Collectively, the tax is capable of catalysing the transition to less-polluting production technologies and slowing down climate change.

However, there are several disadvantages. Firstly, the tax would be regressive, meaning it will disproportionately affect lower-income households compared to higher-income households. This can be mitigated through policies such as reductions in income taxes in tandem with the carbon tax hikes, similar to British Columbia's revenue-neutral carbon tax. Secondly, while larger firms might absorb the increased carbon taxes, smaller firms could be put out of business as the increased costs of production make it difficult to compete with established firms. This is especially true for small firms for whom alternative production methods are not viable, for example, due to the high cost of environmentally-friendly production. Though the gradual nature of the tax hike gives these smaller firms time to react, implementing policies to assist them will ensure that they are not disproportionately affected. These policies could be in the form of

subsidies to firms willing to adopt more sustainable production methods or grants to fund the development of new sustainable technologies. The Canadian government is already planning to offer grants.

Ultimately, while it will not solve the problem entirely, the gradual tax hike is an effective form of government **intervention.** It has the potential to substantially reduce carbon emissions as it gives both consumers and producers in Canada the time and, if the correct policies are implemented, the resources to shift towards a radically more sustainable economy.

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Tragakes, Ellie. *Economics for the IB Diploma*. Cambridge University Press, 2020.

Commentary 2

Title of the article: Brazil hikes interest rate, eyeing inflation

Source of the article: Jorge Svartzman, AFP. "Brazil Hikes Interest Rate, Eyeing Inflation". Buenos Aires Times, 2021, https://batimes.com.ar/news/latin-america/brazil-hikes-interest-rate-eyeing-inflation.phtml. Accessed 23 May 2021.

Date the article was published: 3 March 2021

Date the article was accessed: 23 May 2021

Date the commentary was written: 23 May 2021

Word Count: 799

Section of the syllabus to which the article relates: Macroeconomics

Key Concept: Choice

Article

Brazil's central bank raised its benchmark interest rate Wednesday by a larger-than-expected 0.75 point to 2.75 percent, as rising inflation forced it to reverse its pandemic stimulus stance.

Brushing off criticism that the hike came too soon for an economy still being battered by Covid-19, the bank's monetary policy committee indicated another hike of the same magnitude could be coming at its next meeting in May.

It was the first rate hike in six years for Latin America's biggest economy, which weathered last year's Covid-19 meltdown relatively well thanks in part to a record-low interest rate of two percent.

Now, the economy is showing signs of another slowdown, just as a surge in virus cases and deaths wreaks new havoc – arguably not a good time to raise interest rates, putting the brakes on even more.

But policymakers are nervous about rising inflation and the Brazilian real's slide against the dollar.

"Barring a significant change in inflation projections or the balance of risks facing the economy, the committee foresees continuing the process of partially winding down its monetary stimulus with another adjustment of the same magnitude" in May, the bank said in a statement.

Brazil's annual inflation rate came in at 5.2 percent in February, above the bank's target of 3.75 percent and nearly scraping the top of its tolerance range of plus or minus 1.5 percentage points.

The Brazilian real has meanwhile skidded, closing at 5.59 to the dollar Wednesday.

That is down nearly 16 percent from a year ago, making it one of the worst-performing emerging-market currencies.

'Hasty move'

With Brazil's economic growth outlook flagging, some analysts and voices in the business sector complained the rate hike came too soon.

"This is a hasty move," said the Industrial Federation of São Paulo State (FIESP), Brazil's industrial hub. "**There is still much uncertainty hovering on the economic horizon in the medium term.** We believe increasing the Selic rate is not the best solution at this time."

Brazil's economy contracted by 4.1 percent in 2020 – less than feared at the height of the pandemic implosion.

It is forecast to rebound partially with growth of 3.23 percent this year.

But that outlook has been getting worse. It is down from 3.43 percent four weeks ago.

Highlighting the tricky mix of factors facing Brazilian policymakers, the rate hike came on the same day the US Federal Reserve left its own benchmark interest rate untouched at near-zero.

Fed Chair Jerome Powell vowed to keep the stimulus stance in place "for as long as it takes."

Brazil's rate had been at two percent since August 2020. Analysts had forecast a hike of just half a percentage point.

The decision came as Brazil's health system – and economy – reeled from the latest surge in Covid-19, which far-right President Jair Bolsonaro has drawn criticism for trying to downplay.

The country's seven-day average death toll hit a new high of 2,017 Wednesday.

Nearly 285,000 people have died of Covid-19 in Brazil, second only to the United States.

Commentary

This article discusses an interest rate hike in Brazil to combat growing inflation during the COVID-19 Pandemic. Inflation refers to the sustained rise of the general price level in an economy over a period, usually one year. An important macroeconomic objective for governments is to maintain a low, stable rate of inflation. However, increasing the interest rate to achieve this can conflict with economic growth, another macroeconomic objective. The Brazilian government's decision to prioritise one of the aforementioned objectives will be analysed in this commentary using the key concept of **choice**.

As seen in the article, the 12-month inflation rate was measured to be 5.2% in March 2021, much higher than the central bank's targeted 3.75%. There are two potential causes of inflation: demand-pull and cost-push inflation. The current inflation in Brazil is mostly due to high food product prices, hence it is a case of cost-push inflation. Lower domestic supply due to attractive export prices as well as pandemic and weather-related supply shocks have resulted in the decreased supply of staple Brazilian foods like rice and soybeans. This can be seen in the diagram below as the leftwards shift in the Short-Run Aggregate Supply Curve (SRAS) from $SRAS_1$ to $SRAS_2$. This results in the price level increasing from PL_1 to PL_2 and a decrease in output from Y_1 to Y_2. This combination of inflation and lower aggregate output is known as stagflation.

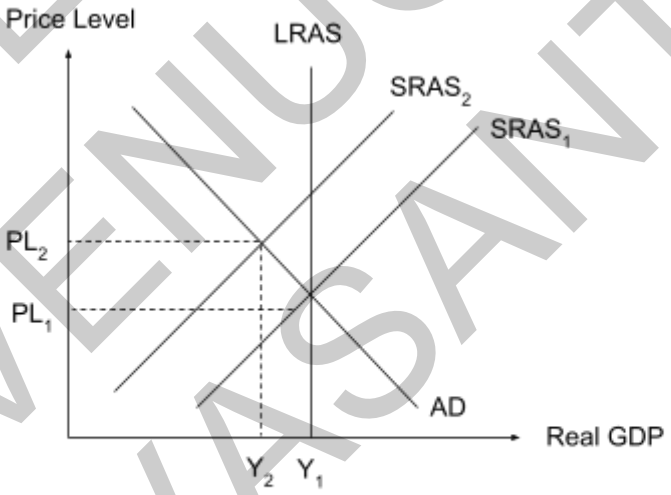

Figure 1: The effect of Low Supply on Price Level in Brazil and Output

The decrease in output during stagflation can result in increased unemployment as there is lower demand and no incentive to operate at maximum production capacity. Firms require less labour and hence cut down on costs by laying off workers. Usually, the lower purchasing power due to

unemployment results in lower Aggregate Demand and a rightward shift in the Aggregate Supply over time. However, rising prices due to supply-side issues during stagflation put additional pressure on households, reducing their purchasing power even further over time. Subsequently, it is important to swiftly curb stagflation.

The Brazilian central bank had two **choices**: prioritising economic growth with expansionary monetary policy or inflation with contractionary monetary policy. Prioritising growth would mean lowering the interest rate, making borrowing cheaper. This would incentivise consumer spending and investment, driving Aggregate Demand rightwards. This would cause an increase in output, but a decrease in the price level, effectively prioritizing economic growth over inflation.

However, the Brazilian central bank's **choice** was to prioritise controlling inflation and raise the interest rate from 2% to 2.75%. As a result, loans are now more expensive for both firms and consumers, resulting in decreased investment. Moreover, savings are incentivised as the higher interest rate will preserve the value of the currency more, resulting in lower consumer spending. This results in a leftward shift of the Aggregate Demand in the diagram below, from AD_1 to AD_2. As producers reduce prices to make their goods more attractive to consumers, the price level decreases from PL_1 to PL_2. This only improves the inflation component of the situation as the decrease in the price level will also be accompanied by a further decrease in the output, from Y_1 to Y_2.

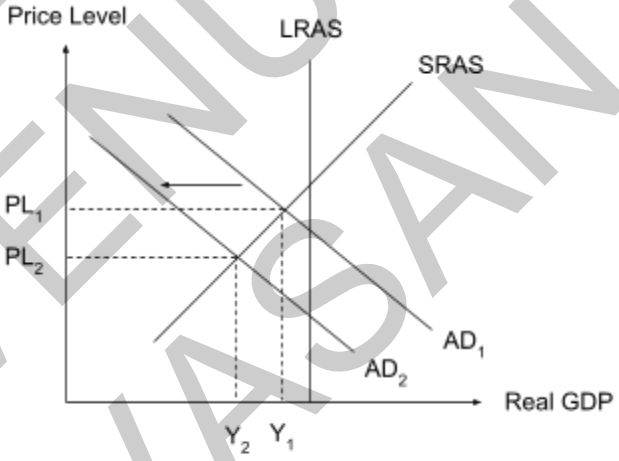

Figure 2: Effect of contractionary monetary policy on Price Level and Output

Given that the Brazilian economy has contracted by 4.1% over 2020, the further decrease in output can have long term negative impacts on the economy. However, the contraction is in large part due to the pandemic and the economic uncertainty that comes with it. By choosing to

prioritise the control of inflation, the government also works towards reducing some of the uncertainty in the economy. With a low and stable inflation rate, confidence in the economy would rise, incentivising investment and therefore growth. Controlling inflation also helps to maintain the purchasing power of lower-income households as the real value of their savings does not decrease as much. Especially in a time of economic downturn and high unemployment, this could prevent households from being driven to poverty, maintaining the standards of living. Overall, controlling inflation leads to more sustainable economic growth in the long term.

Furthermore, the supply-side nature of stagflation means that a reduction in Aggregate Demand will not solve the issue completely. Solving this problem in its entirety requires supply-side policies. Effective implementation of policies such as investment in farming infrastructure can lead to a rightwards shift in the long-run supply curve, from $LRAS_1$ to $LRAS_2$, as productivity increases. This results in a decrease in the general price level from PL_1 to PL_2, and an increase in the economic output, from Y_1 to Y_2.

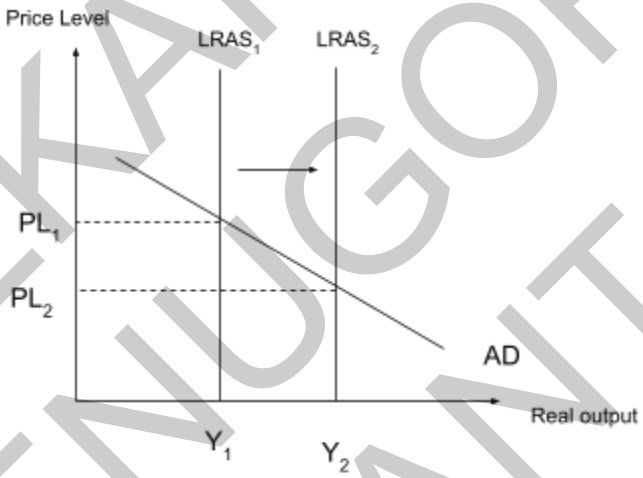

Figure 3: Effect of Supply-Side policies on Price Level and Output

However, supply-side policies are long-term and unable to control inflation in the short run the way monetary policy can. Therefore, while it will affect economic growth negatively in the short run, I believe that contractionary monetary policy is the right **choice**. However, supply-side policies must be utilised to control stagflation completely in the long term.

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Commentary 3

Title of the article: India to levy import tax on solar modules, cells from April 2022 - memo

Source of the article: Varadhan, Sudarshan. "India To Levy Import Tax On Solar Modules, Cells From April 2022 - Memo". U.S., 2021, https://www.reuters.com/article/india-solar-imports-idUSKBN2B2098. Accessed 19 October 2021.

Date the article was published: 10 March 2021

Date the article was accessed: 19 October 2021

Date the commentary was written: 19 October 2021

Word Count: 798

Section of the syllabus to which the article relates: International Economics

Key Concept: Sustainability

Article

CHENNAI (Reuters) - India will levy a customs duty of 40% on solar modules and 25% on solar cells from April 2022, according to a government document and two industry sources familiar with the matter, as it looks to cut imports and boost local manufacturing.

India wants to ramp up its renewable capacity to 175 gigawatts by 2022 and 450 GW by 2030, from about 93 GW currently, as part of its commitment under the Paris climate accords.

"Proposal of Ministry of New and Renewable Energy (MNRE) to impose Basic Customs Duty on solar cells and modules (without grandfathering of bid out projects) has been agreed to by the Ministry of Finance," the MNRE said in a memo dated March 9.

India does not currently levy a customs duty on imports of solar cells and modules, but has a safeguard duty to protect its local industry which expires in July.

The government spokespeople did not respond to calls beyond usual business hours.

The energy-hungry nation imports most of its solar cells and modules from China, in a bid to meet Prime Minister Narendra Modi's target of installing 100 gigawatts of solar energy by 2022. Tensions between India and neighbouring China have been high in the recent past.

India is targeting ramping up its solar capacity to 280 GW by 2030-31 from about 39 GW currently, making it over a third of its overall power requirement, according to the memo.

Commentary

This article discusses a new customs duty of 40% on solar modules and 25% on solar cells that will be levied in India from April 2022. Customs duties, or tariffs, are a form of trade protection where a tax is levied on imported goods.

Solar cells and modules are **sustainable** alternatives to conventional, non-renewable methods of generating electricity, such as burning fossil fuels. Increasing their adoption is essential in making India a more sustainable economy. Here, **sustainability** refers to maintaining the ability of the environment and the economy to continue producing and satisfying needs and wants into the future for future generations (Tragekes). This customs duty can help India work towards achieving Sustainable Development Goal (SDG) 7, to "Ensure access to affordable, reliable, **sustainable** and modern energy for all".

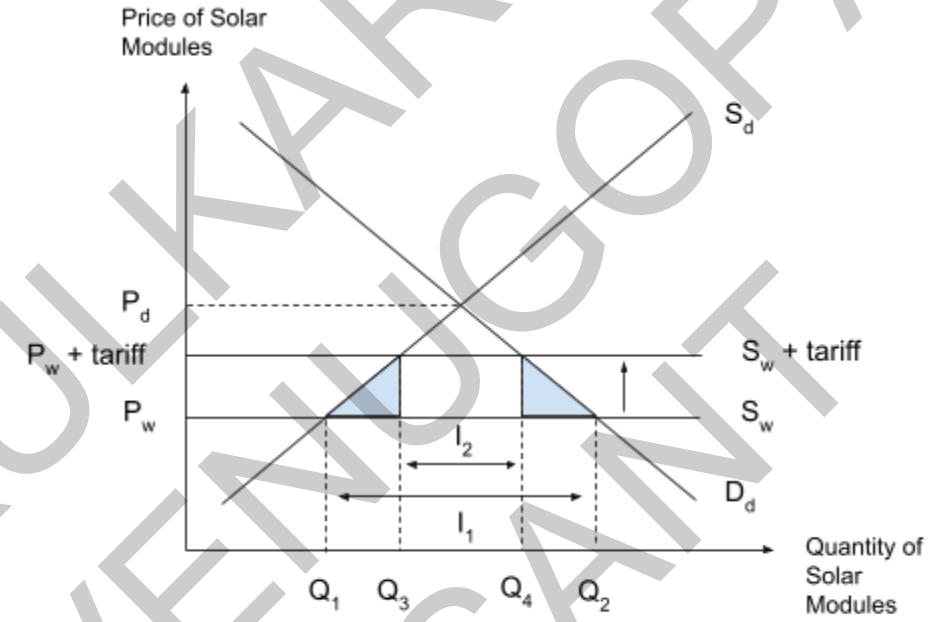

Figure 1: Impact of Tariff on Solar Module Market

Initially, the world price of solar modules is at P_w, which is lower than the domestic price P_d. At P_w, Q_2 units of solar modules are demanded. However, domestic manufacturers are only able and willing to supply Q_1 units at this price. As a result, the excess demand, given by $I_1 = Q_2 - Q_1$, is satisfied through imports. By levying a customs duty, the world supply curve shifts upwards as the price of imports increases by 40% to P_w + tariff. At this new, higher price, demand drops to Q_4 and domestic manufacturers are able and willing to supply a larger quantity Q_3. Accordingly, there is a reduction of imports from I_1 to $I_2 = Q_4 - Q_3$, thus achieving the government's goal of "[cutting] imports and [boosting] local manufacturing".

There are several benefits to imposing this tariff. As domestic producers look to sell larger quantities of solar modules, demand for labour increases. Hence, employment in this industry increases. Furthermore, it allows smaller domestic producers to compete against established foreign producers. In the long term, this can lead to the growth of the solar industry in India. Domestic firms could eventually benefit from the economies of scale and compete in the international market even without a tariff.

However, the tariff leads to inefficiencies in the short run as resources are diverted from efficient foreign producers to relatively less efficient domestic producers. This is evidenced by the higher domestic price. Furthermore, since the tariff protects domestic firms from foreign competition, they are not incentivised to innovate and produce better solar technology more efficiently. This global misallocation of resources leads to the welfare loss depicted by the blue area in the diagram. This slower innovation combined with the lower demand can slow India's progress in "[ramping] up its renewable capacity" as cheaper, less **sustainable** alternatives are favoured.

These customs duties are also regressive as people with lower incomes have to pay a larger proportion of their income than those with higher incomes. This reduces the incentive for lower-income groups to invest in solar modules for their households. Solar power plants also become more expensive to set up. This may drive electricity prices upwards and make renewable energy less affordable. This goes against SDG 7's aim of ensuring affordable access to **sustainable** energy.

As an "energy-hungry nation" that "imports most of its solar cells and modules from China," these tariffs in India can significantly impact Chinese producers. After the imposition of the tariff, Chinese producers would still receive the only original price P_w per unit sold, but the quantity exported would reduce from I_1 to I_2. Consequently, China stands to lose export revenue. In turn, China may impose retaliatory tariffs on solar technology, impacting the possible export of domestically manufactured products to China. This can potentially lead to a further misallocation of resources as both countries divert resources towards inefficient domestic producers who may stagnate due to protection from foreign competition. Overall, this can lead to a global reduction in output, impacting the progress of both countries towards a **sustainable** economy.

The revenue received by the government due to this tariff can be used to mitigate some of its negative impacts. For example, it can be reinvested in local producers of solar technology via subsidies to bring down domestic production costs and, consequently, the price. This may help offset the initial increase in price due to the tariff. It can be used to subsidise the increased cost of

renewable energy generated in solar power plants, helping to maintain access to affordable and **sustainable** energy.

In conclusion, this duty is a step in the right direction for India. In the short run, it slows down innovation and the adoption of **sustainable** solar energy by reducing competition and making it more expensive. However, these issues can largely be mitigated through effective usage of the tariff revenue. In the long run, it not only gives domestic producers the opportunity to grow but also prepares them for competition in an important market in a **sustainable** global economy in the future.

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