Study on carbon taxation of Australia*

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Abstract

Australia is one of the countries with the highest emissions of carbon and other greenhouse gases, making carbon tax regulations a pressing policy issue for the country. It is an alarming issue all over the world causing great damage to mankind and the environment. Although small actions of taking care of the environment may seem less impactful, it gives an immense effect in the long term. This is one of the reasons countries should have strict rules on environmental issues such as implementing carbon tax. Australia has made a prudent plan on carbon taxation and this action will create a positive impact on the environment in future. After a long year of changes in carbon tax regulations, Australia has finally settled down with a policy. Several taxation methods were used in implementing the strategy that is suitable for

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the people of Australia. This paper reports the history of carbon taxation, the explanation of taxation theory that Australia implements, carbon tax rate, how the government generates revenue from the collection of taxes and its effect on households and their consumption.

စာတမ်းအကျဉ်း

ဩစတြေးလျနိုင်ငံသည် ကာဗွန်ဓာတ်ငွေ့ အပါအဝင် အခြားဖန်လုံအိမ်ဓာတ်ငွေ့ ထုတ်လုပ်မှုတွင် အမြင့်ဆုံးသောနိုင်ငံများထဲမှတစ်ခုဖြစ်ပါသည်။ ထို့အတွက်ကြောင့် ကာဗွန် အခွန်ကောက်ခြင်း မူဝါဒကို လိုအပ်လာရခြင်းဖြစ်သည်။ ဤကိစ္စသည် အလွန်စိုးရိမ်ဖွယ်ရာကောင်း၍ လူသားနှင့် သဘာဝပတ်ဝန်းကျင်ကို ဖျက်စီးနိုင်သောကိစ္စ ဖြစ်သည်။ သဘာဝပတ်ဝန်းကျင်ကို ထိန်းသိမ်းရသည်မှာ အလွန်သေးငယ်သော လုပ်ရပ်ဖြစ်သော်လည်း ရေရှည်အတွက် အရေးကြီးသောလုပ်ရပ်ဖြစ်ပါသည်။ အခြားသောနိုင်ငံများလည်း ထို့ကဲ့သို့ ကာဗွန်အခွန်ကို ရှေ့ရေးအတွက်ကောက်သင့်သည်။ ဩစတြေးလျသည် အမြော်အမြင်ရှိသော အစီအစဉ် ကိုလုပ်ဆောင်ခဲ့ပြီး အနာဂတ်တွင် ကောင်းမွန်သော ရလဒ်ရရှိမှာဖြစ်သည်။ နှစ်ပေါင်းများစွာ ပြုပြင်ပြီးနောက် အခွန်စည်းမျဉ်းသည် လက်ရှိ မူဝါဒနှင့် အခြေကျနေပြီ ဖြစ်သည်။ များစွာသောအခွန်ကောက်ခြင်းနည်းလမ်းများကို အသုံးပြုပြီး ဩစတြေးလျ နိုင်ငံသားများနှင့် ကိုက်ညီအောင် ပြုလုပ်ထားခြင်းဖြစ်သည်။ ဤစာတမ်းတွင် ကာဗွန်အခွန်သမိုင်း၊ အခွန်သီအိုရီ၊ အခွန်နှုန်း၊ ဩစတြေးလျ အစိုးရ၏

အခွန်ကောက်ခံမှုမှ အစိုးရဝင်ငွေရခြင်းနှင့် အခွန်ကြောင့် အိမ်ထောင်စုနှင့် စားသုံးမှုအပေါ် အကျိုးသက်ရောက်မှုကို ဖော်ပြထားသည်။

Key words: Carbon tax, climate change, Emission Reduction Fund, cap-and-trade scheme, Piguovian tax

Introduction

Australia’s environmental issue is one of the main environmental issues to be solved due to its extreme climate and geographic location. The impact of climate change on the environment is immense and it leads to annual forest fires, water and land pollution and other environmental problems. This will gradually deteriorate not only wildlife but also mankind. Thus, in 2007 when the Labour Party came into power, Prime Minister Kevin Rudd endorsed the Kyoto Protocol (Crowley, 2021). This is the moment when Australia's carbon taxation journey has started. In this paper, the explanation of carbon tax theory followed by its background, tax rate, how the government’s revenue and expenditure are collected from the carbon tax and the effects of the carbon tax on household consumption will be presented in this paper.

1. Carbon Tax Theory

The emission of carbon and greenhouse gases has rapidly increased causing air pollution. The firms and individuals that

cause air pollution are creating negative externality on the environment. An externality occurs when the action of one party directly affects the others although this is not reflected in the market price; the true value of goods or services. Since the decision-makers do not carry the full weight of the cost or benefit of the activity, it is not taken into account when the decisions are made. Thus, this encourages more pollution and harms the environment. There is no compensation given to the victim or beneficiary of externality. In general, there are two types of externalities- positive externality and negative externality.

Carbon emission is labelled under negative externality as it creates harmful effects on the environment. It occurs when the amount of externality is excessive compared to the effective outcome. Market failure occurs when there is a negative externality (Kagan, 2020). The firms decide the amount of production depending on the cost they made. As the firms only determine the private cost, they fail to take into consideration the external cost. When they add the external cost, it creates a deadweight loss to the economy by excessively producing beyond the socially optimal level. This results in market failure and this is the point when the Pigouvian tax comes into action.

The carbon tax is one of the methods that the Australian government adopted at the early stage of the carbon taxation scheme. It occurs when a certain price level is set by the

government and the firms pay taxes, according to the amount of emissions they made. The firms will find a new technology to reduce the emission or find alternative ways to avoid giving taxes to the government (Centre for Climate and Energy Solutions, n.d.). It is a type of Pigouvian tax, which is a corrective tax as well. It is a tax levied on every unit of the polluter's output in an amount equal to the marginal damage done at the efficient level of output (MacKenzie, 2020).

Cap-and-trade scheme (also known as tradable permits) is a method that allows polluters/ firms to buy a certain amount of permits that the government or the authority is allowed for a year. It is used in correcting the negative externality which will later lead to market failure as well. The government caps the amount of emission by setting up a permitted level. The number of issued permits is the desired level of pollution that the authorised body has calculated and allowed. Then the government set up a market for firms allowing polluters to trade permits. Cap-and-trade limits the amount of pollution but it leads to changes in the cost of reduction (MacKenzie, 2020). It is a quantity mechanism used to control the level of the emission. The emissions reduction fund (a cap-and-trade scheme) is a scheme that provides positive incentives for Australian firms to adapt new practices or upgrade equipment to reduce the emission amount of greenhouse gases. The government holds an auction where the amount and method of carbon emission have

been limited. This allows the firms to bid for the emission level and method they prefer. (Australia Government: Department of the Environment and Energy, 2019)

2. Brief of Political Background: How Carbon tax started

Australia was one of the earliest countries that signed the United Nations Framework Convention on Climate Change (UNFCCC) in 1988. Even though Australia was an early signatory, John Howard's coalition government (1996-2007) made restrictions on voluntary industry programmes and renewable energy targets which included carbon emissions. Still, in 2002, Australia refused to ratify the Kyoto Protocol. However, in 2007, the Labour Party government led by Kevin Rudd ratified the Kyoto Protocol as his first official act and pledged to introduce a national emission trading scheme by 2011. Although he had started on the first step on the climate policy journey, there was no Senate support on two occasions. Since then, his popularity had decreased and was later replaced as Labour Leader and Prime Minister by Julia Gillard in June 2010 (Bailey, MacGill, Passey & Compston, 2012). With the support of the Greens and three independents, the Gillard government continued to work on Kevin Rudd's attempt at environmental policy by reintroducing the carbon pricing scheme. This scheme was a success and approved by both

Houses of Parliament in November 2011 (Bailey, MacGill, Passey & Compston, 2012).

This plan came to action on the 1st of July 2012 as the Clean Energy Act 2011. It is a set of national policies planned to achieve clean energy by reducing the emission of greenhouse gas. However, when opposition leader Tony Abbott came into power, he revoked the carbon pricing scheme in 2014 (Bailey, MacGill, Passey & Compston, 2012). Instead, the Abbott Government set up the Emission Reduction Fund in place of the old carbon pricing scheme in December 2014 with an aim of a 5% reduction of the 2000 emission level by 2020. The 2015-onwards carbon pricing mechanism, which is also known as the Emission Reduction Fund, covers a wide range of big firms and industries. The long-term goal of the plan is to reduce the emission of greenhouse gas by 80% below the 2000 level by 2050. This includes the fact that over 50% of revenue generated from carbon pricing will be converted to financial support for low-income families through tax relief and benefit payments as well. However, politically sensitive sectors are not included in the taxation scheme, such as agriculture and road transport fuels. (Centre for Climate and Energy Solutions, 2011)

Figure 1: Timeline of the Carbon Taxation plan of Australia

3. Carbon tax rate

A carbon tax is a tax levied on polluters for emitting excessive amounts of carbon that could harm the environment. Australia is one of the countries that emit the highest per capita carbon emissions in the world (Morton, 2021). Two plans were set up in Australia's carbon pricing scheme: carbon tax and emission trading scheme.

In July 2011, prime minister Julian Gillard announced her plans on the carbon tax arrangement in detail, which is part of the Clean Energy Future plan. The taxation started its implementation on 1st July 2011. This implementation was made with the good purpose of anticipating the Australian economy to prosper without any environmental issues arising. However, this taxation has caused a viral debate around the country as people worry that the carbon tax will cause a large economic contraction, high unemployment, higher electricity prices and the ending factor of the coal industry (Meng, Siriwardana & McNeil, 2012).

Australia is one of the top polluting countries in the world as it contributes 1.5% of the emission of greenhouse gases in the world’s pollution. The levels of Australia's carbon emissions are high since the economy is mainly on emission-intensive energy sources. Thus, the carbon taxation plan was

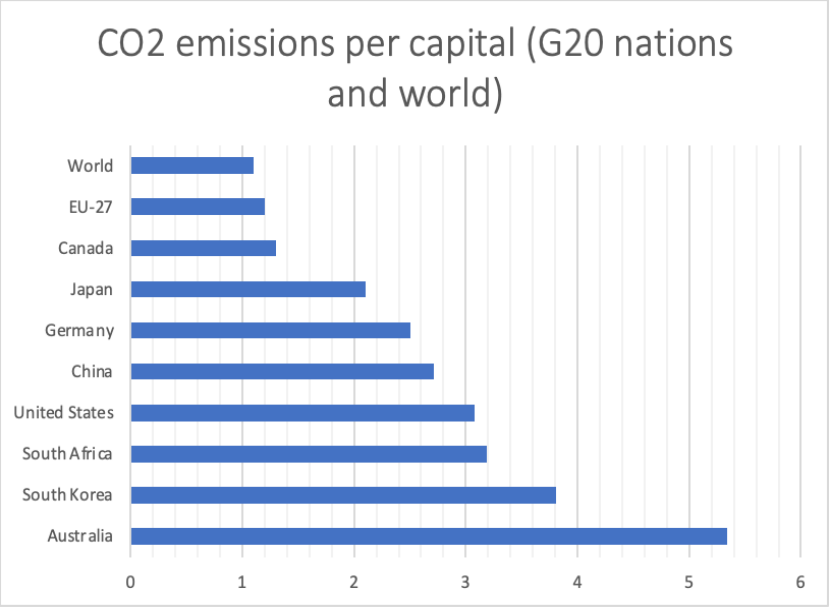
implemented to reduce the environmental risk and other uprising issues regarding carbon emissions.

Sixty percent of Australia's carbon pollution is covered by this carbon taxation (Rahman, 2011). This includes pollution from electricity generation, stationary energy, certain business transport, waste, industrial processes, and fugitive emissions (Rahman, 2011). For the first three years from 2012 to 2015, a fixed price of AUD $23 is set, and it will rise at 2.5 % per annum in real terms. However, at the end of the fixed-price period, there was a rise in price to AUD $25 due to inflation. It later transitioned into a cap-and-trade scheme, with a price cap and price floor. The government has estimated that $71 billion will be received in the first 6-and-half years of the carbon taxation scheme (Rahman, 2011). Although the rate of a carbon tax is set up at a high level, the government implemented some tools to ease off the financial burden. Due to the government's estimation of the cost for average households when the taxation policy is applied, it has increased the price by $ 9.9 AUD per week.

During the year 2012-2013, in the early phase of the carbon taxation scheme, the Consumer Price Index (CPI) is expected to be around 0.7% (Rahman, 2011). To ease this burden, the government has settled down the solution by spending over 50% of the carbon tax revenues on households. This has been used to offset the price impact for low- and

middle-income households. In 2012-2013, the income tax was cut off by increasing the threshold from $ 6,000 AUD to $ 12,800 AUD. In 2015, when the policy transitioned to the 'Carbon Reduction Fund', the income tax threshold was increased to $19,400 AUD (Rahman, 2011).

Figure 2: Annual average 2015-2020 in tonnes of CO2



From this figure 2, Australia has the highest CO2 emissions per capita compared to the G20 nations and the world in the years 2015-2020. South Korea had the second highest emission, followed by South Africa. However, Australia has exceptionally exceeded the emission rate compared to other countries. This

graph highlights the fact that a carbon taxation policy is much needed for Australia.

4. How the government's revenue and expenditure is collected from carbon tax

The government has collected around $ 6.1 billion in terms of revenue (Meng, Siriwardana & McNeil, 2012). The way the carbon tax revenue is collected depends on the tax rate and the base. The government has collected around $ 6.1 billion AUD from the carbon tax.

The government spending on carbon tax can be seen in two scenarios, which are carbon tax only and carbon tax including compensation. Under tax-only conditions, there are no drastic changes in expenditures, but the changes are obvious under tax plus compensation scenarios. These tax revenues are subsidies to households. There are two assumptions for unchanging government expenditure. One is as the government real consumption follows household consumption, the decrease in one factor will make a decrease in another factor. Another assumption is the introduction of increased prices in tax will inflate government nominal expenditure. Thus, these two effects cancel out, showing an unchanged government expenditure (Meng, Siriwardana & McNeil, 2011).

5. Effects of the carbon tax on household consumption

Since there are both positive and negative impacts on imposing carbon taxation, the government implemented compensation to certain sectors such as different levels of compensation to manufacturers and exporters. The government-imposed reform of tax threshold and family tax benefits such as clean energy advance, clean energy supplement and single income family supplement for households.

By imposing a carbon tax, the households reduce the rate of consumption as the commodity prices increase. This will also affect the income of households as the factories and firms reduce the rate of production and thus, this resulted in labour reduction or lower wage rate. When the income decreases, the households reduce consumption as well. To solve this, the government introduced another additional intervention, a compensation plan for the households. A lump-sum subsidy is given to households which results in increased income and household real consumption (Meng, Siriwardana & McNeil, 2011).

6. Conclusion

The Australian Treasury made a large-scale carbon pricing model to explain the carbon tax. As it is a large-scale model, it is complex and ambitious. From the Treasury's report, the results for carbon pricing are positive; the economy

continues to grow and carbon emissions are reduced as well. Without the carbon tax, the Australian GNI per person will be 60% higher by 2050 and the carbon emissions will be 74% higher than today. On the other hand, carbon taxation is implemented and the GNI per person is at least 56% higher and the emission rate is 80% lower. From these 1.6 million jobs are created by 2020 and 4.4 million in 2050. This indicates that although there is a carbon tax implementation, the Australian economy is still blooming.

It can be said that Australia's carbon taxation is on the right track. From the observations, the emissions have been reduced to a certain level while the economy is thriving well at the same time. Although there were increases in prices of carbon-related goods and businesses, the government has compensated in other ways such as subsidies and balancing the economy. The limitation of this paper would be since this paper is based on a single country only, it would not be able to provide other data from different countries. In all, the Australian taxation plan is a suitable plan for the current generation as well as for the future since climate change is a serious and alarming issue that people seem to neglect.

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