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MAKE THE ALBERTA CARBON LEVY REVENUE NEUTRAL

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SUMMARY

The new carbon levy of $30 per tonne, announced in November 2015 as part of the report issued by the Alberta government's Climate Leadership Panel, is a positive move in the direction of pricing carbon emissions. The levy is expected to generate $3 billion in net revenue by 2018, and possibly as much as $5 billion by 2030. While there is some discussion in the report of what should be done with the revenues generated by the carbon levy, it is somewhat vague on the details, leaving a number of options open to the government. The purpose of this briefing paper is to argue that the revenues from the carbon levy should be used to lower existing taxes – the carbon tax should be revenue neutral, generating no new net revenue for the government.

The basic argument is that the carbon levy can be viewed through two lenses. The first lens is the imposition of a price on carbon emissions which (at least partly) reflects the social costs of emissions. Viewed through this price lens, the carbon levy plays an important role in incenting firms and individuals to change their behaviour and move towards less carbon intensive activities. The second lens is the role of a carbon tax as a part of the broad revenue system. Viewed through this tax lens, a carbon tax is not a very good, or efficient, way of generating revenue. The reason for this is somewhat nuanced, but the basic idea is that the carbon tax is applied to a narrower base than broader-based taxes. Broad based taxes generally impose lower costs on the economy than narrow based taxes. Moreover, carbon taxes interact with other taxes in the economy, exacerbating the economic costs associated with those taxes. And those costs are quite high – research shows that the total cost to the economy of raising an additional $1 in revenue through the corporate income tax in Alberta is $3.79; for the personal income tax the cost is $1.71. These taxes therefore impose higher costs on the economy than they raise in revenue. Swapping revenue from the carbon levy for these taxes in a revenue neutral manner would lower these costs, generating a substantial return to the provincial economy relative to other uses.

If the government wants to fund other priority areas – be it public infrastructure, investment in complementary initiatives to reduce emissions, or even deficit reduction – it is better to finance these initiatives through more efficient and less costly taxes than a carbon tax. The basic approach advocated here is as follows: price emissions appropriately by way of a carbon levy, use the revenue to reduce existing taxes in a revenue-neutral manner, evaluate the benefits of spending money on other initiatives, and finance those initiatives using the least costly configuration of taxes possible (subject to equity considerations).

On Nov. 20, 2015 the Alberta Climate Leadership Panel released its much-anticipated report. A key recommendation of the report is the implementation of carbon pricing in Alberta. While the precise details of the pricing regime are somewhat complicated, the headline number is the introduction of a carbon levy of $30 per tonne by 2018.[1]

The report indicates that the carbon levy will generate approximately $3 billion in net revenue by 2018, potentially rising to $5 billion by 2030. While there is some discussion of what should be done with the revenues the carbon levy generates, the report is somewhat vague on the details, leaving a number of options open to the government. The purpose of this communiqué is to argue that the revenues from the carbon levy should be used to lower existing taxes – the carbon tax should be revenue neutral, generating no new net revenue for the government.[2]

It is useful to begin by briefly stating the perhaps obvious case for imposing a carbon-pricing scheme in the first place, which I fully support. Carbon emissions generate externalities, the most obvious being climate change, that are not appropriately reflected in the price of carbon-based fuels. By not appropriately reflected, I mean that the market price of carbon-based energy does not reflect the social costs associated with the resulting externalities. In the case of climate change, these costs include things like decreasing agricultural output, harm to human health, lower productivity, and costs associated with increased storm activity, droughts, etc. Market-determined carbon-based energy prices are therefore too low, and emissions are too high, because they do not reflect these social costs. Pricing carbon emissions to reflect the social costs is intended to curb the overuse of carbon-based energy and reduce emissions accordingly.[3]

Concisely summarizing what follows, I argue that policy should generally reflect the following approach: price emissions appropriately to reflect the associated externalities, use the revenue to reduce existing taxes in a revenue-neutral manner, evaluate the benefits of spending money on other initiatives (complementary emission reduction policies, infrastructure, deficit reduction, etc.), and finance those initiatives using the most efficient configuration of taxes possible (subject to equity considerations).

THE PROPOSED ALBERTA CARBON LEVY

The report makes several recommendations intended to lower, or at least stem, carbon emissions in Alberta. The emphasis here, and in much of the public discussion, is on the proposed carbon-pricing regime, referred to in the report as the carbon competitiveness

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1 The report recommends that the levy be increased by inflation plus two per cent annually, with the caveat that "similar prices exist in peer and competitor jurisdictions." Alberta Climate Leadership Panel report, 6.

2 In a paper for the Ecofiscal Commission (McKenzie, 2016), I make the case for revenue neutrality more generally. Here, I focus on Alberta. I borrow heavily from the analysis in that paper here.

3 Estimates of the efficient carbon tax rate vary widely, and it is not my intention to undertake a comprehensive survey of the research here. To get an idea of the range, consider that the U.S. Office of Management and Budget's official estimate for the social cost of CO_2 from climate change in 2015 is $37 per tonne, https://www.whitehouse.gov/blog/2013/11/01/refining-estimates-social-cost-carbon, while a recent Stanford University study pegged the cost at more than six times higher, at $220 per tonne (Moore and Diaz, 2015).

regulation (CCR).[4] While the core of the policy proposal has been referred to in the media as a carbon tax, the report does not in fact use the term, preferring the broader phrase "carbon levy," or, more precisely, if not somewhat cryptically, "carbon pricing with output-based allocations." While the details of the CCR are important, and merit in-depth analysis, that is for another time; here, my focus is on the use of the revenues generated by the proposed regime. However, it is useful to set the stage with a brief overview of the approach to carbon pricing recommended in the report.

The report indicates that the carbon levy will generate approximately $3 billion in net revenue for the government. The word "net" is important; we must distinguish between the gross and net revenues generated by the levy. As indicated above, the recommendation calls for carbon pricing with sector-specific output-based allocations. The sector-specific output-based allocations refer to the allocation of emission permits to large industrial emitters (greater than 100,000 tonnes per year) on the basis of their emissions intensity (emissions per unit of output) relative to a prescribed performance standard intensity. Large emitters include the usual list of suspects, such as oil sands operations, upgrading, refining, and electricity generators, but also petrochemical and fertilizer operations, cement plants and other large industrial operations. The output-based allocations are intended to reduce the average carbon price paid by these large emitters to address concerns about the impact of the carbon levy on the competitiveness of trade-exposed sectors, protect electricity consumers from large price increases, and to allay concerns about carbon leakage due to large current and future emitters abandoning the province to produce (both output and emissions) elsewhere.

As indicated, the allocations to large emitters are to be based on carbon emissions per unit of output relative to a prescribed performance standard. Without going into the details of the scheme, the carbon-pricing regime faced by these large industrial emitters can be thought of as a broad-based carbon levy on their emissions coupled with an implicit per unit of output subsidy. Some large emitters with low carbon intensity may actually receive more in subsidy than they pay in carbon levy.

The output subsidy for large industrial emitters implicit in the CCR raises several issues which will not be explored at length here. However, a few observations are worthwhile. The imposition of a carbon levy at the industrial level can be viewed as leading to a reduction in emissions through two fundamental channels. The first channel is called the input substitution effect. Levying a price on emissions provides an incentive for firms to substitute away from emission-intensive inputs and/or to develop less emission-intensive technologies. This substitution to lower emission inputs and technologies will, it is hoped, reduce emissions. The second channel is called the output effect. Levying a price on emissions also raises the marginal costs of production, which in turn leads to a reduction in output. This, too, will lower emissions (though there may be carbon leakage to other jurisdictions if producers move and produce elsewhere). A carbon levy acts to lower emissions through both of these channels. The impact of these two channels on the

[4] The acronym can make or break a policy. For those of a certain generation, the acronym CCR no doubt evokes fond memories of Creedence Clearwater Revival; I suspect this was not the panel's intention.

emissions of industrial emitters, and the effectiveness of carbon pricing in lowering emissions in general, depends on several factors, one of which is the ability of these firms to substitute away from carbon-intensive inputs and technologies.

The implicit output subsidy embedded in the CCR can be viewed as reducing the output effect for vulnerable sectors. Vulnerable in this context means carbon-intensive and trade-exposed.[5] In other words, there is legitimate concern that imposing a carbon levy on these sectors would have significant negative effects on the competitiveness of important sectors in the Alberta economy. The imposition of a levy on emissions could cause these firms to reduce existing output and employment, lower investment, or possibly even move elsewhere (leading to concerns over carbon leakage). By providing an implicit output subsidy to these exposed sectors, the CCR can be thought of as blunting the output effect. This means that the input substitution effect is left to do the heavy lifting in terms of emission reductions in sectors that receive the implicit output subsidy. It also means that more is required from other sectors in the economy, including final consumers, if emissions are to be stemmed.

HOW MUCH REVENUE?

The approximately $3 billion in revenues generated by the carbon levy referred to in the report, and in much of the public discussion, is net revenue, after the implicit output subsidy is provided to large emitters.[6] The report does not provide details on the size of implicit subsidy to large emitters; to determine this, one must work backwards from the net revenue figure provided and make assumptions regarding emissions subject to the broad pricing regime.

One can make some back-of-the-envelope calculations in this regard.[7] In 2013, stationary plus transport CO_2 emissions in Alberta were 196.2 megatonnes. Applying a carbon price of $30 per tonne, this would generate gross revenues, prior to the implicit output subsidy for large producers, of $5.886 billion. Net revenue of $3 billion therefore suggests an implicit output subsidy of $2.886 billion to large emitters. Of course, these are rough calculations, as emissions in 2018 will be higher and assumptions had to be made regarding the coverage of the levy; however, they are likely to be in the right ballpark.

While the impact of a carbon levy on the competitiveness of key Alberta sectors is clearly an important consideration, it is not immediately obvious that an implicit output subsidy of $2.886 billion targeted at large emitters is the best way to address it. In principle, one might therefore view the gross revenue of $5.886 billion as being on the table, with output-based allocations to large emitters as just one possible use of the money. However, an in-depth analysis of this awaits further consideration. In what follows, I will take the implicit output subsidy for large emitters as given and consider the issue of revenue neutrality within the context of the net revenue of $3 billion.

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5 See the report, 34-35.

6 It is also net revenue in the sense that the carbon levy is envisaged as being a deductible cost in calculating oilsands royalties and corporate income tax. As a result, revenue from these other sources will decline.

7 Credit goes to my colleague, Trevor Tombe, for providing these numbers.

What does the report say should be done with the $3 billion? Not much. The report recommends that the money be used in four ways:

1. To offset impacts on low- and middle-income households by providing them with a consumer rebate;

2. To support transition of workers and communities to enable full inclusion of aboriginal communities in climate change mitigation and adaptation;

3. To double down on additional carbon emissions by investing in complementary policies and encourage technological innovation;

4. To provide incremental fiscal capacity for other government priorities, be they infrastructure spending, tax reductions, deficit reductions or other programs.

The first two uses of the revenue address distributional concerns associated with the imposition of the carbon levy. While the distributional impact of a carbon levy is a matter of some dispute,[8] taking steps to protect groups disproportionately affected seems reasonable. Most studies show that these initiatives account for a small fraction of the carbon revenues raised.[9]

Clearly, the last point – the generation of incremental fiscal capacity for other government priorities – provides substantial wiggle room. I will argue below that all, or substantially all, of the $3 billion in net revenue generated by the carbon levy should be used to reduce existing taxes, and that complementary emission-reduction policies, programs to encourage green technological innovation, infrastructure and any other related government priorities, should be considered, justified and financed independently of the revenues raised from the carbon levy.

THE ARGUMENTS FOR REVENUE NEUTRALITY

The meaning of the term "revenue neutrality" in the context of a carbon levy would appear to be straightforward: the revenue generated by the carbon levy is used to lower existing taxes, generating no new net revenue for the government.

While this is the straightforward and, one would think, universally held meaning of the term, the Alberta government has managed to come up with a different, and unique, definition. Premier Rachel Notley, in her speech announcing the report's release, said:

> We will put every penny raised through the carbon price to work here in Alberta — building our economy, creating jobs, and doubling down on efforts to reduce pollution and promote greater efficiency. **The Alberta carbon price will therefore be revenue neutral, fully recycled back into the Alberta economy.** To that end, revenue will be reinvested directly into measures to reduce pollution — including clean research

[8] For alternative views, see Bohringer et al (2016), Rivers (2012), and Lee and Sanger (2008).

[9] See, for example, Rivers (2012). Ecofiscal Commission (2016), 19, calculates that 9.5 per cent of carbon levy revenues would be needed to fully insulate the first and second income quintiles from the carbon levy.

and technology, green infrastructure like public transit, to help finance the transition to renewable energy, and efficiency programs to help people reduce their energy use. [Emphasis added.]

Premier Notley has been widely, and rightly, criticized for this rather creative definition of revenue neutrality. The B. C. government certainly understood the concept. The B.C. carbon tax is levied at a rate of $30 per tonne and has relatively broad coverage. In 2013-2014, the tax generated $1.212 billion in revenue. The B.C. carbon tax was designed to be revenue neutral, with all of the tax revenue recycled back to taxpayers by way of reductions in existing taxes. Of the $1.212 billion in revenue raised, $522 million was used to reduce personal income taxes, primarily through a reduction in tax rates on the first two income brackets and by way of the Low Income Climate Action Tax Credit; $710 million was used to reduce corporate income taxes, primarily through a one-percentage-point reduction in the provincial corporate income tax rate for both large and small businesses.[10]

My concern here is to lay out the arguments for using the revenue from the Alberta carbon levy to reduce existing taxes in a revenue-neutral manner given the standard meaning of the term.

To begin, it is important to understand the full economic costs associated with taxes. The key point is that a tax will typically impose costs on the economy over and above the revenue it raises. These additional costs are referred to as the efficiency costs of the tax.[11] The reason for this is that taxes distort market prices, causing consumers and producers to alter their behaviour. In the case of an excise tax imposed on a good or service, for example, the imposition of a tax raises the price paid by buyers and lowers the price received by sellers, causing buyers and sellers to consume and produce less than they otherwise would. The tax distorts their economic decisions, making them worse off, and therefore generating costs over and above the tax revenue raised.

Despite these efficiency costs, it is clear that we need taxes to raise the revenue that governments need, to do the things they need to do (and some things they don't need to do). However, this suggests that policy decisions in this regard should be informed by the efficiency costs associated with various taxes. One way to do this is to employ the concept of the marginal cost of public funds (MCF). The MCF of a tax measures the total cost to the economy of raising one more dollar in revenue from that tax. The MCF consists of the $1 in revenue raised plus the efficiency costs associated with raising that $1. The presence of efficiency costs means that the MCF of most taxes is greater than the $1 in incremental revenue raised.

One way of thinking about the efficiency costs of a tax is to consider what happens to the base upon which a tax is applied when that tax is increased. For example, say the government increases the size of a tax by 10 per cent and the private sector responds by reducing the amount of the taxed activity by two per cent; in other words, the tax base shrinks by two per cent. In this case, tax revenue will increase by eight per cent due to the behavioural response of taxpayers, which is less than the 10 per cent increase in the tax

[10] The personal and corporate income tax reductions credited to the carbon tax revenue actually slightly exceeded the revenue from the carbon tax by about $20 million.

[11] Efficiency costs are also referred to as the deadweight loss or excess burden of the tax.

rate. Because the 10 per cent increase in the tax results in only an eight per cent increase in tax revenue, the total cost of raising a marginal dollar of tax revenue is approximately 10/8, or $1.25; the MCF in this case is 1.25.[12]

That additional 25 cents, over and above the $1 in incremental tax revenue raised, is the efficiency cost associated with raising an additional dollar of tax revenue. It arises because the size of the tax base shrinks due to the behavioural effects associated with the increase in the tax rate. The sensitivity of the tax base to the tax rate will differ across different types of taxes. All else being equal, the more sensitive a tax base is to an increase in the tax rate, (the more the tax base shrinks in response to an increase in the tax rate), the higher will be the efficiency cost of the tax and the higher the MCF.

In two recent very valuable and timely School of Public Policy research papers, Bev Dahlby and Ergete Ferede calculate the tax base sensitivities and the MCF of the three major types of taxes in Canadian provinces: corporate income taxes (CIT), personal income taxes (PIT), and general sales taxes (GST).[13] Their calculations are reproduced in Table 1. I focus here on the calculations for Alberta, and in particular on the implications of these calculations for the argument for the revenue neutrality of carbon taxes.

The MCF for the CIT for Alberta is 3.79. This means that if Alberta increased its statutory CIT rate to raise an incremental dollar in revenue, and the tax rates in the other provinces remained the same, this would impose an additional, and somewhat astonishing, $2.79 in costs on the Alberta economy over and above the incremental $1 in tax revenue raised, due to the efficiency costs arising from the shrinkage in the corporate tax base. This is due in large part to the sensitivity of the corporate tax base to changes in the tax rate. Dahlby and Ferede estimate that a one-percentage-point increase in the statutory CIT rate for Alberta is associated with about a 13 per cent decrease in the corporate tax base.

At 1.71, the MCF for the PIT is smaller, but still significant. Raising one more dollar in revenue by increasing the personal income tax rate generates an incremental $0.71 in economic costs. Notably, the MCF for a general sales tax in Alberta is 1.0. The reason for this is that Alberta does not levy a general sales tax, which means that at the margin, raising an incremental dollar in revenue from a sales tax imposes no additional costs on the economy. This is the typical argument for imposing a sales tax in Alberta (another argument for another day).

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[12] This example is taken from Dahlby and Ferede (2011). As they point out, it is an approximation because the 10 per cent increase in the tax is not literally a marginal increase as it will generate more than $1. Technically, an infinitesimal increase in the tax is required. See Dahlby (2008) for a more rigorous treatment.

[13] Dahlby and Ferede (2016a, 2016b).

TABLE 1 THE MARGINAL COST OF PUBLIC FUNDS FOR THE PROVINCIAL AND FEDERAL GOVERNMENTS

	Marginal Cost of Public Funds		
	(1) Corporate Income Tax	(2) Personal Income Tax	(3) General Sales Tax
British Columbia	3.19	2.86	---
Alberta	3.79	1.71	1.00
Saskatchewan	***	2.38	1.41
Manitoba	4.70	2.42	1.34
Ontario	5.21	6.76	---
Quebec	3.62	3.05	1.92
New Brunswick	***	1.91	1.42
Nova Scotia	***	---	1.62
Prince Edward Island	***	2.80	2.44
Newfoundland & Labrador	***	2.16	1.57

NOTE: The MCF calculations are for 2013 from Dahlby and Ferede (2016a) for all provinces except for Alberta, where the figures have been updated to reflect the recent increase in CIT and PIT in 2016, as reported in Dahlby and Ferede (2016b). *** indicates that a tax rate increase would reduce the long-run total tax revenues. --- indicates that the MCF could not be computed because the semi-elasticity could not be estimated.

An important point to note about the MCF is that it is symmetric to tax increases and decreases: while an incremental increase in a tax imposes additional efficiency costs on the economy, costing the economy more than the incremental dollar in tax revenue raised, a decrease in a tax benefits the economy by more than the one dollar in tax revenue forgone. Moreover, differences in the MCF associated with different taxes gives rise to the possibility of efficiency-enhancing revenue-neutral tax swaps, reducing taxes with a high MCF and replacing the revenue by increasing taxes with a low MCF.[14]

While most taxes give rise to efficiency costs, taxes imposed on externalities, such as carbon taxes, are typically viewed as enhancing efficiency by aligning the private costs faced by individuals and firms using fossil fuels with the social costs, so that the gains from trade properly reflect both the private and social costs. That is, carbon taxes also generate efficiency benefits.

Herein lies the argument for using the proceeds from a carbon levy to lower existing taxes. In its strongest form, the argument is often framed in terms of the so-called "double dividend" hypothesis. This hypothesis postulates that imposing a carbon tax and recycling the revenue in a revenue-neutral manner by lowering existing distortionary taxes generates two benefits, or dividends. The first dividend is the benefit associated with the reduction in the costs imposed on society from the overuse of carbon-based fuels. The second dividend is the decline in the efficiency costs associated with a reduction in the use of existing distortionary taxes. Thus, it would appear that imposing a carbon tax and recycling the revenue by lowering existing taxes results in a win-win scenario – we improve both the environment and the efficiency of the tax system.

To make the idea more concrete, consider, for example, the introduction of a very small carbon tax which generates an incremental $1 in revenue for the government. As indicated

[14] This is discussed in a different context by Dahlby and Ferede (2016a), who point out that the high MCF associated with the CIT suggests scope for an efficiency-enhancing revenue-neutral change in the tax mix away from the highly distortive CIT and towards less costly taxes, most particularly a sales tax.

above, the tax will lead to behavioural changes on the part of consumers and producers as they use less fossil fuel, and society will benefit from a reduction in the associated externalities. This is the first dividend. If the $1 in tax revenue is then simply returned to consumers/taxpayers in a lump sum manner, that would be the end of it. While society benefits from the reduction in the externalities caused by carbon usage, generating the first dividend, because the government takes $1 away with one hand and gives it back with the other by way of a non-distortionary lump sum transfer, there is no second dividend.

However, because most taxes give rise to costs over and above the tax revenue raised, an alternative approach would be to return the incremental $1 in revenue from the carbon tax to taxpayers by way of a reduction in an existing distortionary tax; for example, the provincial CIT. In other words, undertake a revenue-neutral tax swap, replacing $1 in tax revenue from the CIT with $1 in tax revenue from the carbon tax. Using Dahlby's and Ferede's MCF calculations, reducing provincial CIT revenues by $1 will generate an additional benefit of $2.79 in reduced efficiency costs over and above the $1 in tax revenue given up; this $2.79 is the second dividend. This reasoning would seem to suggest that recycling carbon taxes in a revenue-neutral manner, reducing existing distortionary taxes dollar for dollar, gives rise to the fabled free lunch – we can have our cake (a better environment) and eat it, too (a less distortionary, more efficient tax system).

It turns out, however, that this view is somewhat oversimplified, and most analytical and numerical studies of the issue conclude that a double dividend is unlikely to be realized in practice.[15] While the first dividend – the benefits of mitigating climate change – is not in dispute, the second dividend – an improvement in the overall efficiency of the tax system – is questionable. In the above example, it was assumed that the MCF associated with raising $1 with a carbon tax was simply $1; in other words, there was no incremental efficiency cost associated with the carbon tax. It turns out that this is not the case. The reason for this is that carbon taxes exacerbate the efficiency costs associated with existing distortionary taxes, potentially (and indeed likely) rendering the second dividend negative, and increasing the overall efficiency costs of the tax system, even if the revenue is fully recycled in a revenue-neutral manner. This is often referred to as the tax interaction effect.

One way of thinking about the tax interaction effect is as follows. Carbon taxes cause the costs and prices of products that use energy to rise. This results in effects that are similar to an increase in existing taxes on labour and capital, which discourages labour supply and investment, thereby exacerbating the efficiency costs associated with the existing tax distortions in labour and capital markets. Consider the labour market. The rise in the prices of goods and services due to the carbon tax results in a reduction in real wages, as the amount of goods and services that a consumer can purchase declines due to higher prices. This reduction in real wages has a similar impact to an increase in the tax on labour income, which lowers after-tax wages directly, and therefore increases the efficiency costs associated with existing taxes on labour income. Thus, in some ways, the carbon tax acts like an increase in the tax rate on labour income (actually, it is worse, as I will argue below), with an associated rise in efficiency costs.

[15] I do not go into the details of individual studies here. For surveys of the literature and more in-depth analysis, see Goulder (1995), Parry (1995), Bovenberg and Goulder (1998), Bovenberg (1998), and Bovenberg (1999).

Aside from certain special cases, which are unlikely to occur in practice, most studies find that the efficiency costs associated with the tax-interaction effect dominate the efficiency benefits from reducing existing taxes by recycling the environmental tax revenues in a revenue-neutral manner. Alas, it seems that there is no such thing as a free lunch after all.

However, while a double dividend in its strong form may be unlikely to exist in practice, this does not mean that revenue-neutral recycling by reducing existing tax rates should not be pursued. In fact, and importantly, it strengthens the argument in favour of revenue-neutral tax recycling. Given that a carbon tax will exacerbate the efficiency costs associated with existing distortionary taxes, the best way to mitigate these costs is to lower existing tax rates. Indeed, study after study shows that recycling the revenue in this manner dominates the use of the revenue in virtually any other manner, and most certainly by way of lump sum distributions or transfers.[16]

The MCF calculations by Dahlby and Ferede suggest that the greatest efficiency gains in the tax system would be realized by first allocating revenue from the carbon tax to the highly distortive CIT. Reductions in the CIT would also help alleviate the impact of the carbon tax on the competitiveness of corporations which are not eligible for the implicit output subsidy. It should be stressed, however, that the fact the MCF associated with the CIT is higher than other taxes, in particular the PIT, does not mean that all of the carbon tax revenue should be devoted to CIT reductions. The MCF calculations are made at the margin – they are the total cost savings associated with lowering a tax by $1. Reducing corporate taxes by millions, and potentially billions, of dollars is not marginal. As the CIT rate declines, so, too, will the MCF associated with further reductions. Indeed, as the CIT declines, eventually the MCF associated with another incremental reduction in the CIT rate may fall below the PIT (this is currently the case in Ontario, for example; see Table 1).

While it is well beyond the scope of this note to attempt to ascertain any sort of optimal allocation of the revenue from a carbon tax across the different taxes, the MCF calculations suggest that devoting a significant proportion of the revenue to reductions in the CIT in Alberta is reasonable from an efficiency perspective. Indeed, the B. C. government devotes over half (58 per cent in 2013/2014) of the revenue from its carbon tax to CIT reductions. It is noteworthy, however, that the MCF associated with the PIT is also quite high. This suggests the desirability of lowering personal taxes as well.

BUT SURELY, THERE ARE OTHER THINGS WE CAN DO WITH THE REVENUE?

Of course there are. Indeed, the possibilities of using this new-found money seem almost limitless. The report provides some rather vague recommendations in this regard, including the creation of incremental fiscal capacity for the government to pursue "other priorities." But from the previous discussion, it should now be clear that this is not found money at all; it comes with a cost.[17]

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16 Ibid.

17 See Ecofiscal Commission (2016), for an alternative discussion of what to do with carbon tax revenue. For reasons elaborated below, my view differs in some respects from the perspective taken in that report.

Several points are relevant in this regard. First, it is possible in principle that some public expenditures will generate higher returns to society than decreasing existing distortionary taxes. However, it is important to remember that a carbon levy will exacerbate existing tax distortions. Devoting the revenue to a reduction in pre-existing distortionary taxes is required to mitigate this increase in the inefficiency of the tax system. Further, any public expenditure financed by the revenue from the carbon levy needs to pass the cost-benefit threshold suggested by the MCF calculations. For example, using the MCF for the provincial CIT, any public expenditure financed at the margin with an incremental $1 from a carbon levy needs to generate at least $2.79 in social benefits over and above the tax revenue raised, to render it a better use of the funds than a CIT reduction. Since the introduction of a carbon levy actually increases the efficiency costs of existing taxes, an incremental investment would need to generate a social return even greater than this. If this is not the case, the money would be better allocated to a reduction in the CIT rate. It is incumbent upon proponents of using carbon tax revenue for these other purposes to provide a justification along these lines. This reasoning applies to everything from doubling down on complementary policies to reduce emissions, to financing the development of green technologies, to "incremental fiscal capacity for other government priorities, including infrastructure."

An even stronger point can be made. If the government does wish to devote resources to these purposes, or to any other priority areas, financing them by way of a carbon levy is not the best way to do it. The reason for this is that carbon taxes are, as discussed above, a relatively inefficient way to raise revenue. Due to the tax interaction effect, the economic cost of raising a dollar through a carbon tax is higher than that of raising a dollar through other taxes, such as a sales tax or even a broadly applied increase in the personal income tax. The reason for this is that a carbon tax is applied to a much narrower base – to individual commodities (such as fossil fuels) or on emissions from particular industries – than broader-based taxes. As a result, carbon taxes tend to imply larger distortions in markets for intermediate inputs, for consumer goods, and for labour and capital. Swapping a carbon tax for other distortionary taxes limits (but does not eliminate) these distortions. If the government wants to double down on expenditures to improve the environment, to finance infrastructure, or any other priority area, by all means go ahead, but the expenditures should be justified on cost-benefit grounds and financed with taxes that generate lower efficiency costs than a carbon levy (a sales tax comes to mind).

This argument also applies to the elephant in the room that I have not yet addressed: the current fiscal crisis. To cut to the chase, how can I even suggest using the revenue from the carbon tax to lower existing taxes when the government is faced with a sizable and looming fiscal deficit? Shouldn't we just use the revenue generated by the carbon levy to lower the deficit? The answer to this question should now, hopefully, be clear. If we want to address the deficit by generating more revenue, and I am not suggesting that we do, then we should do it in the most efficient manner possible. For the reasons discussed above, that would not be a carbon tax.

CONCLUDING THOUGHTS

The purpose of this note is to present the economic case for making the Alberta carbon levy revenue neutral: using the revenue generated by the levy to reduce existing taxes, generating no new net revenue for the government. The discussion has focused on the projected $3 billion in net government revenue generated by the levy, net of the payment of an implicit output-based subsidy to large emitters.

The arguments for revenue neutrality are, in my view, compelling, if not unassailable. While pricing carbon is the right approach to dealing with the externalities generated by emissions, it comes at a cost. This cost can best be mitigated by using the revenue to lower existing distortionary taxes. The cost-benefit bar for using the revenue for other purposes is high, and alternative uses of the funds should, at the very least, be justified on these grounds. Indeed, there is no compelling reason why the size of government should increase in conjunction with the introduction of a carbon levy. If further climate initiatives, or other government priorities, such as infrastructure, are desired (and are justifiable on cost-benefit grounds), they should be financed in the most efficient way possible, using broad-based consumption or income taxes, not by a carbon levy.

In sum, policy should generally reflect the following approach: price emissions appropriately, use the revenue to reduce existing taxes in a revenue-neutral manner, evaluate the benefits of spending money on other initiatives (complementary emissions policies, infrastructure, deficit reduction, community transition, etc.), and finance those initiatives using the most efficient configuration of taxes possible (subject to equity considerations).

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