

2
0
2
3



NATURAL COMMON WEALTH AND ECONOMIC RENT IN CANADA

Ben Earle, Liam Wilkinson,
Floyd Marinescu, and Ken Yang

common wealth
CANADA

TABLE OF CONTENTS

EXECUTIVE SUMMARY	4
Summary of Findings	5
Conclusion	6
INTRODUCTION	8
ECONOMIC RENT AND RENT-SEEKING	9
The Commons and Economic Rent	9
A note on the term “economic rent”	10
Challenging Rent-Seeking	11
STATEMENT ON INDIGENOUS PERSPECTIVES	13
IMPACTS OF THE COMMONS AND ECONOMIC RENTS	13
Summary of Findings	13
Impacts on Revenue and Taxation	14
NATURAL COMMON WEALTH	19
LAND	19
NATURAL RESOURCES	25
Mining Resources	25
Oil and Gas	27
Forests	30
Fisheries	34
Air	36
Water	38
SOCIAL COMMON WEALTH	44
TELECOMMUNICATIONS, INTERNET AND THE EM SPECTRUM	44
PATENTS AND INTELLECTUAL PROPERTY RIGHTS	45
BANKING AND FINANCIAL SERVICES	46
ARTIFICIAL INTELLIGENCE	47
CONCLUSION	48

Common Wealth Canada would like to thank Brent Ranalli, Research Scholar and author of *Common Wealth Dividends: History and Theory* for his generous support in reviewing multiple drafts of this paper and providing invaluable comment and feedback on the work. In addition, we thank the following individuals for their support, input and comments in contribution to this work:

Gary Flomenhoft, PhD, Gund Institute for Ecological Economics, University of Vermont

Karl Fitzgerald, Managing Director, *Grounded – Community Land Trust*

Stefan Horn, PhD Candidate, *Institute for Innovation and Public Purpose (IIPP)*

Frank de Jong, Board Member, *Robert Schalkenbach Foundation*

Brent Ranalli, Research Scholar, *Ronin Institute*

Erwin Dreessen, PhD, Co-founder and former chair, *Greenspace Alliance of Canada's Capital*

Tana Kristjanson, Camosun College School of Business

Any errors or omissions in this work are the authors' alone.

EXECUTIVE SUMMARY

This paper is an attempt to demonstrate the value of Canada's common wealth that derives from our shared natural resources (the commons).¹ Influenced by similar attempts to value common wealth from Australia² and Vermont³, we examine the economic rents associated with natural common resources in Canada. The paper and calculations are presented to inform discussion and future research on common wealth in Canada and the potential income that could be derived for public purposes from the rental value of these resources. This work does not explore the policies by which to collect these economic rents for public benefit; that will be the subject of future work. We instead provide estimates to inform understanding and future research efforts on the amount of economic rents in Canada.

A note on Economic Rents

Acknowledging that there has been debate in the literature on the precise usage and meaning of the term rent, we note that a general consensus has developed regarding its technical usage to refer to “those payments to a factor of production that are in excess of the minimum payment necessary to have it supplied.”⁴ That is, rent, as we understand and use the term here, is income earned by owners (of the resource or the rights to extract the resource) on resources above and beyond the required amount to support their extraction and productive use.

In the case of economic rent and common resources, the unearned income is derived from the common wealth of the resource, and therefore, should rightfully accrue for the benefit of everyone. As Adam Smith wrote in *The Wealth of Nations*: “It is the work of nature which remains after deducting or compensating the work of man. It is seldom less than a fourth, and frequently more than a third of the whole produce.”

1 The commons can also include cultural, social, and digital resources that are part of our collective heritage. This paper focuses on natural resources but acknowledges that these other kinds of the commons are also important in discussions of common wealth and should be further explored.

2 Prosper Australia, 2013, *Total Resource Rents of Australia: Harnessing the Power of Monopoly*.

3 Vermont Green Tax and Common Asset Project (University of Vermont), 2008, *Valuing Common Assets for Public Finance in Vermont*.

4 Varian, H.R. (2006) *Intermediate Microeconomics: A Modern Approach*. 7th Edition. WW Norton & Company, p. 412

It is our contention that rent exists because of the existence of the community and gifts of nature that no one worked for, and should accrue to that community in the form of government revenue that may be used to support Canadians, either through public services, tax or income benefits.⁵

Summary of Findings

Across all natural resource commons reviewed in this paper, the potential economic rent that could be collected with new and adjusted policy is estimated at \$241 billion/year. This is largely driven by the possible rent collection that could come from a national land value tax (\$194 billion/year). The balance derives from adjustments to existing rent and royalty regimes that capture more of the resource value for the collective benefit of all people in Canada.

Table A: Summary of Potential Resource Rents in Canada

Natural Common Wealth	Proposed Additional Rent Collection ⁶
Land	\$194 billion
Minerals	\$1.6 billion
Energy (Oil and Gas)	\$11.4 billion
Forestry	\$1.1 billion
Air (Carbon)	\$32.9 billion
Total	\$241 billion

Impacts on Revenue and Taxation

The revenue potential of increased economic rent capture on Canada's commons are significant. In total, the proposed additional rent collection outlined in this paper adds up to 60% of all revenue collected by the federal government in Canada, and 83% of all personal income taxes paid by Canadians to the federal, provincial and territorial governments. Thus, the implications for the finances of Canadians are significant. For example:

- 5 Nobel laureate *Joseph Stiglitz* showed that under often-met real world conditions, investments in public goods increase land rents by at least as much as the investment itself. The result is that the valuable contributions of a community often accrue value privately to landowners.
- 6 This is all new rent/royalty income that could be collected – based on the analysis in this paper – in addition to what is currently collected through existing natural resource tax and royalty regimes in Canada.

- The possible rent generated from a federal land value tax (\$194 billion/year) could eliminate federal personal income taxes for all Canadians.
 - Alternatively, this could increase the combined federal and provincial basic personal amount (0% tax bracket) to \$88,100; resulting in 91.3% of Canadians having no personal income tax obligation.
 - Or, this could generate a common wealth dividend of \$6,136 annually to all Canadian adults.
- The total additional rents generated from all sources (\$241 billion/year) could eliminate federal personal income taxes for all Canadians and pay a federal common wealth dividend of \$1,954 annually to all Canadian adults.⁷
 - Alternatively, this could increase the combined federal and provincial basic personal amount (0% tax bracket) to \$253,000; resulting in 97.6% of Canadians facing no personal income tax obligation.
 - Or, this could generate a common wealth dividend of \$7,622 annually to all Canadian adults.

Conclusion

The amount of additional rent that we believe could be collected from the commons in Canada is significant – enough to fundamentally change how Canadians pay taxes and receive benefits. Furthermore, sharing in the rental value of land and our natural resources can address some of our most dire economic and social challenges, including housing affordability, income and wealth inequality, and the very economic stability of our nation.

Understanding the true magnitude of these rents allows us to begin exploring bold new economic reforms that allow the value of our commons to be shared more equitably among Canadians.

⁷ For a comprehensive introduction to common wealth dividends, see Ranalli, B., 2021, *Common Wealth Dividends: History and Theory*.



INTRODUCTION

INTRODUCTION

Common wealth arises from the use of our shared natural, cultural, and social resources, to which all residents of the society have an equal moral right, even when they are held privately. Traditional examples of these shared resources include land, forests, fisheries, and subsurface resources (e.g. minerals, oil and gas). Increasingly, bodies of cultural and social artifacts have come to be viewed as shared resources, such as art, music and literature, as well as digital resources that have been collectively created and built by humans and entered into the public domain. Historically, the term the commons has been used to refer to the way communities managed shared natural resources, in particular land, that was held ‘in common’, and the agreed upon set of rules about how it was to be used.⁸

Acknowledging these other, cultural and social, parts of our common wealth, this paper is an attempt to demonstrate the potential value of the commons and the common wealth that may be derived from Canada’s shared natural resources with a nod to its potential impact on the finances of Canadians.⁹ Common wealth is used here to describe the portion of the value that arises from the use and exploitation of Canada’s natural commons and that may provide a net return to all Canadians in various forms.

Despite its enormous potential value to Canadians, much of our common wealth is being captured privately today, by those corporations who extract and use these resources, perpetuating a rentier economy that enriches some, impoverishes most, and divorces economic gain from productive contribution. Building and sharing common wealth with all Canadians will form the bedrock of a more inclusive economy, and will provide the basis for an inclusive, stable and sustainable future for the nation.

This can be achieved by examining the economic rents associated with natural and social common resources; that is, those resources that may be considered to be part of the collective commons that all Canadians share and could benefit from.

The paper and calculations are presented to inform discussion and future research of the commons in Canada and the potential income that could be derived for public purposes from

8 International Association for the Study of the Commons, *About the Commons*.

9 While this paper focuses on natural resources, we acknowledge that other kinds of the commons are also important in discussions of common wealth and should be further explored.

the rental value of these resources. This work has also been influenced by similar attempts to value common wealth in Australia¹⁰ and Vermont.¹¹

ECONOMIC RENT AND RENT-SEEKING

The Commons and Economic Rent

For over 100 years, leading thinkers in economics considered the natural world, and the resources that it provides, to be part of the commons, and thus contributing to our common wealth.¹² Among the earliest thinkers on this subject, the Physiocrats, a group of 18th Century French thinkers who were pioneers of applied economic analysis,¹³ believed that land is the source from which all wealth is created.¹⁴ As a result, they argued that the net product of land created rents that were unearned by the landowners and thus the burden of all taxes ultimately should fall on these same landowners, rather than on the labourers who make the land productive.¹⁵ Adam Smith,¹⁶ widely thought of as the founder of modern economics, argued that the real wealth of a nation was derived from the annual production of land and labour. Thomas Paine¹⁷ echoed this sentiment, noting that the earth was “the common property of the human race” and advocated using the rent of land to fund a citizens’ dividend. More fundamentally, Henry George¹⁸ believed that land and all natural resources should rightfully be viewed as the common property of humanity, and thus a tax on land values – as a collection of rent – “is the most just and equal tax of all”. George and his subsequent followers (the Georgists) place land and land rent at the centre of their economic paradigm.

10 Prosper Australia, 2013, *Total Resource Rents of Australia: Harnessing the Power of Monopoly*.

11 Vermont Green Tax and Common Asset Project (University of Vermont), 2008, *Valuing Common Assets for Public Finance in Vermont*.

12 This premise formed the central debate of economics in the late 18th and 19th centuries. From the French Physiocrats to Adam Smith (1723-1790), David Ricardo (1772-1823), Thomas Malthus (1766-1834), John Stuart Mill (1806-1873), Karl Marx (1818-1883), Simon Patten (1852-1922) and Thorstein Veblen (1857-1929), they all focused on a theory of value that could quantify economic rent as unearned income.

13 Gaffney, M., 1998, *Notes on the Physiocrats*. Physiocracy can be considered the first economic school that attempted to define a true theory of the economy.

14 Higgs, H., (2002 [1897]), *The Physiocrats: Six Lectures on the French Economists of the 18th Century*.

15 History of Economic Thought, No Date, *The Physiocrats*.

16 Adam Smith Works, 2017, *Wealth of Nations Reading Guide – Book II, Chapter 3*. In addition, his views on land-rents have been favourably discussed by Georgists economists’ – who themselves place land and land rents at the forefront of their applied economics – Nicholaus Tideman and Mason Gaffney in the article *A Georgist Perspective on Adam Smith*.

17 Thomas Paine, 1797, *Agrarian Justice*.

18 Henry George, 1879, *Progress and Poverty*.

A note on the term “economic rent”

It is important to note that the term economic rent (elsewhere referred to as “rent” in this paper) and its usage across fields and the body politic is subject to significant debate and has shifted over time. A consensus has developed regarding its technical usage as “those payments to a factor of production that are in excess of the minimum payment necessary to have it supplied.”¹⁹ In pointing out that rents may arise both on the supply and demand side, Schwerhoff, Edenhofer, and Fleurbaey (2020)²⁰ expand that general definition to “those benefits to an agent that are in excess of the minimum necessary for the agent to accept the transaction.”

In literature exploring the potential utility of economic rents as a source of public revenue, the most common forms of economic rents identified are described as unearned income, windfall profit, or as revenue without a corresponding cost of production.²¹ This is a view forwarded by Piketty,²² who defines it as “income on capital, whether in the form of rent, interest, dividends, profits, royalties, or any other legal category of revenue, provided that such income is simply remuneration for ownership of the asset, independent of any labor.” Piketty goes on to observe that the common definition has therefore taken on a pejorative connotation of an “undue or unjustified income”.

Many economists have refined this concept to differentiate types of rents based on the market inefficiencies or sources of the value that is being captured. Schwerhoff, Edenhofer, and Fleurbaey (2020),²³ for instance, identify seven types of rents present across the market²⁴ and note that few are appropriate for non-distortionary revenue streams for governments. Most of the rents they identify are generated by imbalances in market and monopoly power. The authors note that these systems are best not entrenched or accounted for after the fact through taxation, but rather addressed before they arise through reducing market barriers and enacting policies to ensure competition. Because we are concerned with

19 Varian, H.R. (2006) *Intermediate Microeconomics: A Modern Approach*. 7th Edition. WW Norton & Company, p. 412.

20 Schwerhoff, G., Edenhofer, O., & Fleurbaey, M., 2020, *Taxation of Economic Rents*, *Journal of Economic Surveys*, 34(2), p. 400.

21 Henry George Foundation of Canada, No Date, *Economic Rent*. In their 2019 paper, *Taxation of Economic Rents*, (p.3), Schwerhoff, Edenhofer, and Fleurbaey note that there has been considerable debate on the precise meaning of the term. *Varian (2006, p. 412)* points out that modern public economics has settled on defining economic rent as payments to a good or factor of production that are in excess of the minimum payment necessary to have that factor supplied.

22 Piketty, T., 2014, *Capital in the Twenty-First Century*. Harvard University Press.

23 Schwerhoff, G., Edenhofer, O., & Fleurbaey, M., 2020, *Taxation of Economic Rents*, *Journal of Economic Surveys*, 34(2), p. 1-26.

24 These are, regulation rents, political rents, investment rents, natural monopolies, market power, inframarginal rents, and scarcity rents.

natural resource rents, we are most interested in rents that result from bounded supply of the resource in question. There are therefore two categories of rents that we put forward as efficient sources of potential levies in natural resource sectors: scarcity rents and regulation rents.

This paper concerns itself primarily with rents of which positive value is derived from the commons (e.g. mineral extraction) or whose negative values are externalised to the commons (e.g. carbon pollution). These two proposed levies belong, respectively, to the two efficiently taxable subclassifications of rents mentioned in the previous paragraph, scarcity and regulation rents. Scarcity rents – that result when there is a definite limit to the supply of a good²⁵ – account for the former as they are the cost of using and depleting a finite resource. This is a form of rent because the limited supply of the asset caps production, beyond which further demand will only increase the price with the difference accruing entirely to the owner or controller of the resource. Through this process, the value and benefits of the limited resource is depleted for future generations. Regulation rents are “those rents that result from regulation motivated by social and environmental concerns”²⁶ and account for the cost of production or use of a common asset. These costs are externalised (e.g. pollution) and rent occurs when the societal cost is greater than zero.

Challenging Rent-Seeking

The practice of capturing unearned wealth from the commons is a primary form of rent-seeking,²⁷ the act of growing wealth without any reciprocal contribution of productivity. While it may be morally objectionable, importantly, rent-seeking can also have dire economic consequences. Contemporary economists have found the rise of rent-seeking behaviour in the economy of developed nations to be a major driver of extreme inequality, wage stagnation, and economic slowdown.²⁸ Thus, a system that challenges rent-seeking and uses economic rents derived from the commons for public needs is one that can revitalise an economy that works for all Canadians. Further, in reclaiming the commons for collective

25 Schwerhoff, G., Edenhofer, O., & Fleurbaey, M., 2020, *Taxation of Economic Rents*, *Journal of Economic Surveys*, 34(2), p. 8.

26 Ibid., p. 10.

27 As Joseph Stiglitz notes in *The Price of Inequality* (p. 48), “The term rent was originally used to describe the returns to land, since the owner of land received payments by virtue of his ownership and not because of anything he does.” This thinking is now applied beyond land ownership to denote rent-seeking as any activity to collect or generate excess income by virtue of ownership, access or control of a resource. This rent is income above a reasonable operating return on the investment that an owner may make into the exploitation or use of the resource.

28 In *The Price of Inequality: How Today's Divided Society Endangers Our Future*, Stiglitz's details the widespread consequences of rent-seeking on inequality, economic stagnation, and social and political instability.

benefit, there is opportunity to align the imperative to share our common wealth with all Canadians with the imperative for environmental stewardship.²⁹

While the introduction of rent recovery on the commons may increase costs for owners of common natural resources, it will not create disincentives for productive investment. As the Henry George Foundation of Canada explains, “collecting the economic rent from a resource does not inhibit extraction, use or economic activity, since rent is revenue without a cost of production”.³⁰ By definition, owners of resources do not require the totality of economic rent from the resource in order to stay in business.³¹ Norway’s oil and gas industry is a notable example, as former Prime Minister of Norway and current Chief of NATO Jens Stoltenberg explained:

“The natural resources in the ground, that’s something we own in common... We tax them and they stay, because they earn money even with a tax rate of 78%... We have a very competitive O&G sector... we believe in competition, we believe in open economy. But we believe that the extra rent connected to natural resources shall be something which is in the common ownership of the people”³²

This work does not explore the policies by which to collect these economic rents for public benefit; that will be the subject of future work. We acknowledge that there will not be a uniform approach across resource sectors, and that policies to strengthen the commons must also interact with the economic realities of each sector. In addition, these policies should also address imperatives for preserving and protecting our natural resources where necessary. We instead provide estimates of the amount of economic rents from natural resources in Canada to inform understanding and future research efforts.

29 The authors acknowledge that these two imperatives are not necessarily aligned and that more work on how common wealth can support both the sharing of the benefits of the commons and the stewardship of our environment needs to be undertaken.

30 Henry George Foundation of Canada, *Economic Rent*. In this article, HGFC further notes that “(e)ven in the oil industry, rent recovery does not slow down oil extraction, but it would make renewables more competitive, since investors in renewables and fossil fuels would each collect the same ROI, on a level playing field. Presently renewables only generate an “accounting profit” (if at all), as they do not generate significant economic rent, making renewables uncompetitive with fossil fuels which generate high economic rent.” Similarly, land value taxes (or land rent) would not inhibit productive use of land, but instead would incentivize putting it to its most economically productive use.

31 In the current environment, land speculation may lead to scenarios where land owners who have taken mortgages to purchase the land do require some unearned income in order to service the debt and stay in business. To unravel this concern we will need to make a distinction between investment and speculation. Instituting a rent-tax on land would involve/require winding down existing speculation in land.

32 From Marinescu, Floyd (@floydmarinescu) “*Norway shows how collecting rent from the value of our natural common wealth benefits everyone.*” May 23, 2023, 5:05 PM ET.

STATEMENT ON INDIGENOUS PERSPECTIVES

In preparing this paper, we are very aware of the unique and central place that indigenous peoples and communities have in relation to the lands within what many today call Canada. This is especially important when we talk about the commons and its collective benefits for all people.

The capitalist property regime and economic system have succeeded at producing remarkable surplus, but the benefits of this system too often flow to a small fraction of the population, while land, water, air and people pay the long-term price.

While indigenous values, beliefs and practices are as diverse as the indigenous peoples themselves, they find common roots in a relationship to land and water radically different from the notion of property. For indigenous peoples, land and water are regarded as sacred living relatives, ancestors, places of origin or any combination of the above.

Between the productivity of property and the recognition of indigenous rights and the rights of nature, there lies the potential for a more just future for the land, the water and their human relations.

The sentiment has been echoed by Richard Nerysoo of Fort McPherson in Canada's Northwest Territories, who explained that "being an Indian means saying the land is an old friend that your father knew, your grandfather knew – your people have always known. If the land is destroyed, then we too are destroyed. If you people ever take our land, you will be taking our life."³³

IMPACTS OF THE COMMONS AND ECONOMIC RENTS

Summary of Findings

Across all natural resource commons reviewed in this paper, the potential economic rent that could be collected with new and adjusted policy is estimated at \$241 billion/year (Table 1). This is largely driven by the possible new rent collected from a national land value tax (\$194 billion/year). The balance derives from adjustments to existing rent and royalty regimes that capture additional economic rent from other natural resources.

33 Cultural Survival, *This Land Knows Me: Indigenous Land Rights*.

Table 1: Summary of Current and Potential Resource Rents in Canada

Natural Common Wealth	Total Possible Rent Collection (\$CAD)	Current Rent Collection (\$CAD)	Proposed Additional Rent Collection (\$CAD) ³⁴
Land	\$320 billion	\$47.7 billion ³⁵	\$194 billion
Minerals	\$7.5 billion	\$1.8 billion ³⁶	\$1.6 billion
Energy (Oil and Gas)	\$50.4 billion ³⁷	\$14.6 billion ³⁸	\$11.4 billion
Forestry	\$3.2 billion ³⁹	\$2.1 billion ⁴⁰	\$1.1 billion
Fisheries	\$1.01 billion ⁴¹	\$40 million ⁴²	\$0
Air (Carbon)	\$38.8 billion	\$5.9 billion ⁴³	\$32.9 billion
Total	\$420.9 billion	\$72.1 billion	\$241.0 billion

Impacts on Revenue and Taxation

If new policies were implemented to fully convert even a portion of the estimated rents in the paper into new federal and provincial revenues, they could have a significant impact on government revenues and have positive implications on the personal finances/disposable income of all Canadians arising from reduced personal income taxes and/or annual dividend payments.

34 This is all new rent/royalty income that could be collected – based on the analysis in this paper – in addition to what is currently collected through existing natural resource tax and royalty regimes in Canada.

35 This is the estimated amount of tax currently paid on the value of land through property tax regimes across Canada. This is based on a percentage of the total revenue (\$90.6 billion) from taxes paid on property in Canada that comes from land value excluding the value of dwellings and buildings. Data source: OECD Centre for Tax Policy and Administration, 2022, *Revenue Statistics 2022 – Canada*.

36 Based on current royalty and mining tax payments made by the mining industry.

37 This calculation is based on a scenario that allows a 15% return on investment for the oil and gas sector.

38 Statistics Canada. *Table 25-10-0065-01 Oil and gas extraction revenues, expenses and balance sheet (x 1,000,000)*. This is the amount collected in 2020 based on current markets and royalty regimes.

39 This is based on application of Alberta's Market Based Stumpage System Nationally and is calculated based on average stumpage rates for 2020. This model provides opportunity for significant annual shifts in rent capture based on the market for forest industry products.

40 National Forestry Database, 2020 – *Revenues Tables*.

41 Based on a proposed 5% levy on 80% of the production value of fisheries in Canada.

42 Based on licensing fees from fisheries and aquaculture.

43 This is the amount collected under the Government of Canada's current carbon levy program in 2022.

In 2020-2021, revenue from all sources for the federal government totaled \$396.8 billion, of which \$179.3 billion was federal personal income taxes (PIT). That same year, all provincial and territorial governments collected \$109.8 billion in PIT. In total, Canadians paid \$289 billion in personal income taxes in 2021.

Table 2: Federal and Provincial Government Revenue vs. Potential New Rent Collected — 2021 (\$CAD)

	Total Revenue
Federal (All Sources) ⁴⁴	\$396.8 billion
Federal Personal Income Taxes Collected⁴⁵	\$179.2 billion
Provincial/Territorial (All Sources) ⁴⁶	\$551.8 billion
Provincial/Territorial Personal Income Taxes Collected⁴⁷	\$109.8 billion
Proposed Additional Rent Collection	\$241 billion

While much work needs to be undertaken to fully understand the nature and impacts of a land value tax in Canada, as well as the potential adjustments to collect additional economic rent from other natural resource sectors, the possible fiscal implications of this shift in revenue sources are significant. If new measures were enacted to collect the potential additional rent that is available in Canada’s land and natural resource sectors, the impact on the finances of Canadians could be significant, both in terms of possible reductions to Personal Income Taxes (PIT) and the possible distribution of an annual dividend payment (Table 4).

While no spending mix (either through direct disbursements, tax reductions, or services) is singularly recommended here, we nevertheless examine several possible scenarios and their distributional implications. Though it is beyond the scope of this work to model the net impacts of all tax reforms proposed, it is important to recognize the magnitude of the policies and their potential to adversely impact the after-tax income of many Canadians. Homeowners in particular will face higher taxes on their properties and thus we have presented the gross tax offsets (Table 3) that might be factored in when considering the

44 Government of Canada, *The Fiscal Monitor – March 2022*.

45 Calculation from *Vivac Research*. Results are based on simulations conducted using *Statistics Canada Social Policy Simulation Database and Model version 29.0 (SPSD/M 29.0)* for the 2022 tax year.

46 Statistics Canada, 2022, *Revenue, expenditures, and budgetary balance – General governments*.

47 Calculation from *Vivac Research*. Results are based on simulations conducted using *Statistics Canada Social Policy Simulation Database and Model version 29.0 (SPSD/M 29.0)* for the 2022 tax year.

net impact of such proposals. Most income brackets would see sizable increases in their disposable incomes and it is likely too that the majority of home-owning households would still enjoy net benefits.

Table 3: Impacts of reducing (combined federal/provincial) PIT through maximal 0% bracket by target amount

	Target Amount	Upper Bound of 0% tax bracket	Canadians not paying PIT	Households not paying PIT	Average reduction for the median individual (\$40,500)	Average reduction for the median household (\$78,200)
Land Rents applied Nationally (LVT) 50% to tax reduction	\$97 billion	\$25,650	66%	42.1%	\$4,002	\$7,819
Land Rents applied Nationally (LVT) 100% to tax reduction	\$194 billion	\$88,100	91.3%	81.1%	\$4,888	\$13,358
All Potential New Rents 50% to tax reduction	\$102.5 billion	\$35,200	73.1%	51.6%	\$4,550	\$9,518
All Potential New Rents 100% to tax reduction	\$241 billion	\$253,000	97.6%	95%	\$4,898	\$13,831

If we were to take the example of other jurisdictions, we could also use funds generated from the increased collection of rent on non-renewable natural resources, such as oil and natural gas and minerals, to create an investment fund that would pay returns to Canadians. This would be similar to the Alaska Permanent Fund that was established in 1980 to build a sustainable investment for all Alaskans as the state's oil reserves were extracted and depleted.⁴⁸ The rationale for the establishment of a permanent fund is to create a sustainable capital investment that can be maintained in perpetuity from the diminishing returns on a non-renewable resource.

48 *Alaska Permanent Fund.*

Acknowledging that these scenarios require detailed analysis and planning to become policy proposals, this paper shows that there are real possibilities to change the ways in which governments collect revenue in Canada, and that these possibilities start with a shared understanding of the commons and our significant common wealth in this country.

Table 4: Economic Rents Potential Impact on the Finances of Canadian Adults (\$CAD)⁴⁹

	Total Potential New Revenue	Tax Reduction (PIT)	Canadians not paying PIT	Dividend Allocation	Annual Dividend per Adult ⁵⁰	Trust/ Permanent Fund ⁵¹
Land Rents applied Nationally (LVT) 100% to tax reduction	\$194 billion	\$194 billion	91.3%	—	—	—
Land Rents applied Nationally (LVT) 50/50 tax reduction / dividend	\$194 billion	\$97 billion	66%	\$97 billion	\$3,068	—
Land Rents applied Nationally (LVT) 100% dividend	\$194 billion	—	40.6% (Baseline)	\$194 billion	\$6,136	—
All Potential New Rents 100% to tax reduction	\$241 billion	\$241 billion	97.6%	—	—	—
All Potential New Rents 50/50 tax reduction / dividend	\$241 billion	\$120.5 billion	73.1%	\$120.5 billion	\$3,811	—
All Potential New Rents 100% dividend	\$241 billion	—	40.6% (Baseline)	\$241 billion	\$7,622	—
All Potential New Rents Trust/Permanent fund and dividend	\$241 billion	—	—	\$194 billion	\$6,136	\$47 billion

49 Calculation from *Vivac Research*. Results are based off of simulations conducted using SPSM 29.0 for the 2022 tax year.

50 Adult population in Canada was 30,992,851 in 2021.

51 This is a proposed option for the utilisation of the collection of new rents from non-renewable resources that could be set up in a similar way to the *Alaska Permanent Fund*. In this example, rent collected from these resources would be used to create an investment fund that can provide benefits to Canadians in perpetuity.



NATURAL COMMON WEALTH

NATURAL COMMON WEALTH

With vast tracts of land and forests, access to fresh water, and large resource industries in oil and gas, minerals and mining, and forestry, Canada is a global leader in natural resource exploitation. Despite a highly developed service sector, Canada's economy has a relatively high reliance on primary extraction. Having long-encouraged the private capture of its natural wealth, it is particularly incumbent for Canada to recognize these resources as a collective asset and as the foundation for our common wealth and prosperity in a changing Twenty-First Century economy.

In this paper, we examine the economic rent that is currently being collected by private interests in Canada that could be redirected to support the prosperity of all Canadians. We specifically look at the rents associated with the use and extraction of Canada's natural resource common wealth: land, oil and gas, minerals and mining, forestry, and fisheries.

LAND

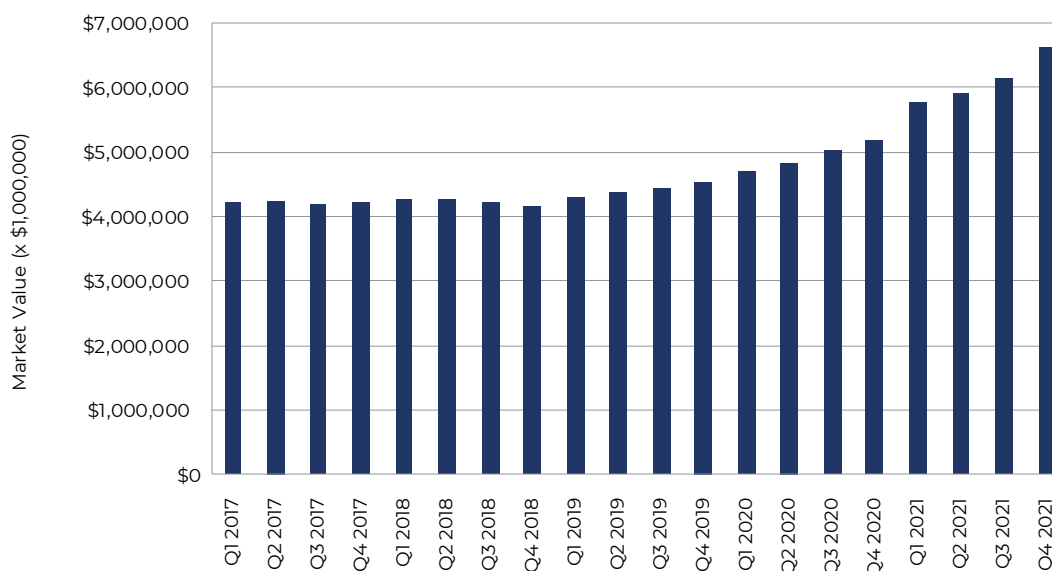
Summary of Current and Potential Land Rents in Canada		
Total Annual Rent (\$CAD) \$320 billion	Current Rent Collection (\$CAD) \$47.7 billion	Additional Rent Collection (\$CAD) \$194 billion

Discovering the total annual rents generated by land in Canada is a challenging exercise due to a dearth of direct measurement. However, several methodologies exist and have been applied in various works to other jurisdictions, each having pronounced shortcomings and producing differing estimates. For instance, in his review of the relevant literature examining US land values, Lars Doucet finds estimates ranging from \$15-\$75 trillion – the consequences of which are widely different pictures of available revenue, tax offsets and distributional impacts.⁵²

52 Lars Doucet, 2021, *Is Land a Big Deal?*, Game of Rent.

Broadly speaking, there are three such methods for estimating land rents: deriving rents from land prices/values, observing price trends in land/property, and inferring rents from overall economic output. In most jurisdictions, aggregate land values/prices (hereafter referred to exclusively as land values) are not measured or disaggregated from property values at a national level and must therefore be estimated independently, compounding potential sources of error.

Chart 1: Total Land Value in Canada, Q1 2017 — Q2 2022 (\$CAD)⁵³



Statistics Canada does however report total land values in its national accounts and this datum can therefore be used to calculate annual rents. Canada’s National Balance Sheet gives the total value of land in 2022 as \$5.824 trillion.⁵⁴ This measurement has its own limitations and likely under estimates total land value because its inputs rely heavily on available tax data. According to Statistics Canada, the measurement of “the value of land includes both price and volume changes.”⁵⁵ The fact that the measurement accounts for

53 Data source: Statistics Canada. *Table 36-10-0580-01 National Balance Sheet Accounts (x 1,000,000)*.

54 Statistics Canada. *Table 36-10-0580-01 National Balance Sheet Accounts (x 1,000,000)*.

55 Correspondence with Statistics Canada, November 1, 2022. “In the National Balance Sheet Accounts – Table: 36-10-0580-01 the value of land includes both price and volume changes. That said, the value of land is not measured directly but is derived from, among other sources, property assessment values (which includes both structure and land) less gross fixed capital formation of structures. Gross fixed capital formation excludes the cost of land, since land is not a produced asset. Although the cost of land is excluded, the cost of site preparation and land improvement is included. Ultimately, the property assessment benchmarks captures both price and volume changes as properties enter/leave the scope of the taxable base. Those volume changes include new land that entered the production boundary (ie. unused land that was developed

significant changes to land volumes indicates that it does not capture the full market value of unused or underused land that is otherwise important for identifying true land rents. However, for the purposes of revenue capture, this erstwhile error might provide a closer estimate of land rents on taxable, privately owned land in production. The vast majority of land in Canada, 89%, that is likely omitted from this measure, is held as “Crown Land”⁵⁶ i.e. the traditional and/or unceded lands of indigenous peoples claimed by the Canadian Crown. Significant portions of these lands are subject to outright indigenous title⁵⁷ while the law holds that all other lands can only be used or occupied with consent.⁵⁸ Therefore the Statistic Canada measure might be more precisely described as the value of land in private hands.

Using the relationship between land prices and land income, i.e. capitalization rate (**= annual net operating income / current price**), we can use the measure of land values to determine aggregate annual rents of privately held land in Canada.⁵⁹ The relationship between annual returns less taxes and expenses, and market price has been shown to be fairly robust and predictive. Save for information inefficiencies,⁶⁰ widespread reporting of this relationship across locales provides the market’s expected rate of return. Historical trends show that the capitalization rate in Canada fluctuates between 3% and 8% in accordance to market conditions and interest rates, with a long-term average of 5.5%.⁶¹ Therefore, we can estimate the total available taxable land rents for 2022 in Canada equals \$320 billion (= \$5.824 trillion * 5.5%). Given the significant sources of error and assumptions that must be made in the other methodologies (discussed below), we will use \$320 billion as the total available land rent in this paper.

However, it is important to note how much this figure differs from estimates put forward in other works using different methodologies. For instance, Foldvary (2006)⁶² reviews three calculations from the UK and USA which estimate the relationship between land rents and national income at around 22%. Using this figure for Canada would yield a land rents estimate of \$593 billion (= \$2.698 trillion [2021 national income] * 22%) or nearly 185%

into housing) and existing use land that was repurposed (ie. farm/industrial property redeveloped to residential property).”

56 Neimanis, V.P., 2013, The Canadian Encyclopedia, *Crown Land*.

57 Supreme Court of Canada Judgements, *Delgamuukw v. British Columbia, 1997*.

58 Royal Proclamation, King George III of England Issued October 7, 1763. Broadside. Library and Archives Canada, e010778430, AMICUS no. 7468714.

59 Ellwood, L. W, Ellwood Tables, Chicago, Ill.: American Institute of Real Estate Appraisers, third edition 1970.

60 Jud, G.D. & Winkler, D.T., 1995, *The Capitalization Rate of Commercial Properties and Market Returns*, *The Journal of Real Estate Research*, 10(5), pp. 509-518.

61 Colliers, *Canada Cap Rate Report Q3 2022*.

62 Foldvary, F.E., 2006, *The Ultimate Tax Reform: Public Revenue from Land Rent*.

larger than our previous estimate. If this methodology proved more accurate, it would suggest one of three possibilities. It might be that a significant volume of land is not captured in Statistics Canada's estimate and would be subject to rent collection. Or it may be that the rents from these lands are already captured by the government in the form of imputed rents on government property (libraries, hospitals, military bases etc.) and through the collection of land rights leases (mineral, forestry etc.). Finally, it might be that the true value of land is being systematically under-assessed and that the true rent for any given plot is much higher. If any of these cases were to be true, then the amount of rent subject to collection would be proportionally higher, as would any use of these funds (dividends, tax offsets etc.).

Alternatively we could follow the examples of Prosper Australia and the Vermont Green Tax & Common Assets Project,⁶³ which estimate revenue potential (i.e. some subset of total land rents) by setting the rate of the average annual growth in land values. While the authors of the Vermont paper use median increases in housing prices as a proxy for land values, the authors recognize the additional error that this introduces. However both of these estimates produce revenue estimates of roughly 5-5.5% of pre-intervention land values. Though they both fail to properly calculate which LVT rate would accomplish a 5.5% collection of land values (discussed further below) it does coincidentally produce a similar picture of total available land rents when applied to Canada.

Having determined the total available economic rent present in Canadian land, we must now select the proportion that could be reasonably and sustainably collected. In theory, all land rent might be collected without market distortion or dysfunction, as land would continue to have a productive yield. Previous proposals have advanced collecting half of land rents, as in the case of the Green Party of Ontario;⁶⁴ 75% as in the case of Rory Meakin in his proposal for taxing land rents in the UK;⁶⁵ 90% as proposed by Tideman et al.;⁶⁶ or nearly 100%, as in Prosper Australia's proposal⁶⁷ or the Vermont Green Tax & Common Assets Project⁶⁸ proposals.

63 Vermont Green Tax and Common Asset Project (University of Vermont), 2008, *Valuing Common Assets for Public Finance in Vermont*.

64 Green Party of Ontario, 2010, *Proposed Government of Canada Budget Based on Rent Recovery*.

65 Meakin, R., 2016, The future of taxation in the UK, In: Booth, P. (Ed.), *Taxation, Government Spending and Economic Growth*.

66 Tideman, N., Akobundu, E., Johns, A., & Wutthicharoen, P., 2002, "The Avoidable Excess Burden of Broad-Based U.S. Taxes, *Public Finance Review*, 30(5), pp. 416-441.

67 Prosper Australia, 2013, *Total Resource Rents of Australia: Harnessing the Power of Monopoly*, p. 19.

68 Vermont Green Tax and Common Asset Project (University of Vermont), 2008, *Valuing Common Assets for Public Finance in Vermont*.

Due to likely variability referenced above and the current tax burden on land (already accounted for in its market price), we selected a rate of 75% of the calculated annual land rent as a conservative rate which would allow for proper market function, and some portion of the land rents to continue to accrue to owners to account for their capital's opportunity costs.⁶⁹ Capturing 75% of the available rent would allow for some land use and geographic variability in the application of any rate.

While any real world application would likely see a gradual introduction, we estimate that capturing 75% of land rents would have generated \$242 billion in 2022. However, we must also consider that land rent which is already being levied by existing property taxes. An estimated \$38.5 billion of property taxes paid in 2020 were attributable to land value (rather than structures and improvements), comprising 42.5% of all property tax receipts from all levels of government that year (the most recent year with full and accurate data).⁷⁰ This corresponds to an aggregate effective land value tax rate of 0.82% in 2020. Assuming the rate remains static, in 2022 we can assume property taxes collected roughly \$47.7B in land rents.

Therefore we calculate the net additional revenue that could be generated by such a proposal at **\$194 billion**.

One final consideration is determining which tax rate applied to the value of land will effect the collection of 75% of its rental value. Because land values are understood to be a product of their present and future income potential, reducing the net rental income that may accrue to the owner will in turn reduce its price. At the hypothetical extreme, an LVT that collects 100% of land's revenue potential (imputed or realised) would push the price of that land to \$0. This is one of the central features of an LVT. Recalling the capitalization rate above, and solving for price where the cap rate is given, yields:⁷¹

$$\text{Value of land} = \text{land rental value} / (\text{land value taxation rate} + \text{land capitalization rate})$$

Therefore, for any given land value taxation rate, we can determine the resultant land price. It has been demonstrated in jurisdictions that have instituted changes in the tax rate on land, that the tax burden of any plot of land is fully capitalised into its price.⁷² In this instance, this gives a resultant aggregate price of \$1.42 trillion and constitutes a 76% drop in land values. Taking the product of this price and the rate that will produce it, will yield the

69 Determined by the long-term interest rate.

70 OECD, 2022, *Revenue Statistics 2022 – Canada*.

71 Schwerhoff, G., Edenhofer, O., & Fleurbaey, M., 2022, *Equity and Efficiency Effects of Land Value Taxation*, IMF Working Papers No. 2022/263.

72 Høj, A.K., Jørgensen, M.R., & Schou, P., 2017, *Land Taxes and Housing Prices*, De Økonomiske Råd Working Paper 2017:1.

revenue. The quotient of the revenue collected and the land's total rental value thus yields the land rental taxation rate.

The result, in our instance, is thus that a 17% LVT will capture 75% of land's rental value. 17% of the post-reform value equates roughly to 4.2% of the pre-reform land value or 2.4% of the average residential property value.⁷³

While the theoretical relationship between land prices and its corresponding tax rate is well understood, how exactly the market would price in an additional land tax would be subject to numerous other factors, chief among which is how that additional tax revenue is spent. For instance in their exploration of potential federal tax policy shifts in the United States, Tideman et al. model the impact of a 20% land value tax alongside a 12% consumption tax which is used to reduce taxes on all income to 0 (neither of which are modelled in the preceding calculations). They find the combined impact of such a reform would be a sustained drop in land values by approximately 75%.⁷⁴ Meanwhile, in applying this same model to the UK economy, Kumhof simulates that a more modest LVT of 2.4% funding reductions to the labour and capital income tax rates would increase the long-term price of land in the UK by over 40%⁷⁵ due to efficiency gains and asset inflation from the resultant economic growth. Given the sensitivity of both the assumptions and likely accompanying policy decision, it is well beyond the scope of this paper to model long-term revenue flows or asset values.

Table 5: Potential Land Value Tax revenue in Canada (\$CAD)⁷⁶

Proposed Land Rent Capture Rates	Total Land Value in Canada (2022) ⁷⁷	Potential Land Rent Capture
Taxation, Government Spending and Economic Growth Capture of 75% of annual land rents: 17% of land value	\$5.824 trillion	\$242 billion \$47.7 billion current capture Net new capture: \$194 billion

73 4.2% = Revenue/pre-reform land values. 4.2%*58% of land value in average residential property = 2.4%.

74 Kumhof, M., Tideman, N., Hudson, M., & Goodhart, C., 2021, *Post-Corona Balanced-Budget Super-Stimulus: The Case for Shifting Taxes onto Land*, CEPR Discussion Papers 2021.

75 National Institute of Economic and Social Research, 2022, *The Case For Taxing Land*.

76 The authors acknowledge that the implementation of an LVT in Canada may have an impact on the viability of land speculation in Canada, which would, presumably, lead to a reduction in land values/prices to reflect use-values alone. This would, in turn, reduce the amount collected for public use through an LVT. More research on these impacts is recommended.

77 Statistics Canada. *Table 36-10-0580-01 National Balance Sheet Accounts (x 1,000,000)*.

NATURAL RESOURCES

Canada is a global leader in the mining, oil and gas, and forestry industries, with some of the largest and most valuable energy, mineral, and forest resources in the world. In 2021, Statistics Canada reported that the present value of key natural resource reserves in Canada was \$1.4 trillion, an increase of 149% since 2020.⁷⁸ While market conditions, emerging technologies, new reserves and other exogenous factors will continue to shape these estimates, Canada undoubtedly has enormous natural resource wealth. This paper concerns itself with how much of this wealth is accessed and the portion of its value that is returned to Canadians.

Mining Resources

Summary of Current and Potential Mineral Resource Rents in Canada		
Total Possible Rent (\$CAD)	Current Rent Collection (\$CAD)	Additional Rent Collection (\$CAD)
\$7.5 billion	\$1.8 billion	\$1.6 billion

Canada is a global leader in the mining of minerals and metals, with three quarters of global mining firms headquartered in the country. The country is a key provider of such resources as potash, diamonds and gemstones, gold, indium, platinum, and uranium.

In Canada, while property owners hold surface rights to land that they own, the provinces and territories generally own the rights to subsurface resources and minerals in the ground.⁷⁹ In the case of the offshore waters and the continental shelf, these rights are owned by the federal government. Therefore, these jurisdictions are responsible for the management of exploration and production rights across Canada. In practice, the provinces and territories lease mining and mineral rights to companies who will produce the subsurface resources and charge mining taxes or royalties on resources produced. In the case where land to be developed for mining is owned privately, producers need to establish separate surface access agreements with these owners. These arrangements are administered and managed, in most cases, but the provincial and territorial governments through individually established regimes.

Currently, the mining sector in Canada contributes to government revenues in the form of corporate income taxes (federal and provincial) and through provincial and territorial mining taxes and/or royalties. These mining taxes and royalties are intended to compensate the province and territories where mining activities take place, and act as a levy on the economic

78 Statistics Canada, 2022, *Canada's Natural Resource Wealth, 2021*.

79 These rights have historically been retained by the Crown, meaning that, despite the transfer of land ownership, the rights to subsurface resources are assets owned, on behalf of Canadians, by the provinces and territories that have jurisdiction over the land in question. There are limited exceptions to this where private or aboriginal ownership exists in certain provinces and territories.

rents earned by the mining industry through extraction and processing of non-renewable mineral and metal resources that are collectively owned.⁸⁰

In 2020, Canada's mining sector paid \$2.1 billion in corporate income taxes (federal, provincial and territorial) and mining taxes/royalties (provincial and territorial).⁸¹ Of this, 61% (\$1.8 billion) was paid in provincial and territorial mining taxes and/or royalties.⁸² This royalty return is one of the lowest in the world for mineral resources, largely due to the fact that Canada generally assesses royalty payments after all costs have been calculated. This is increasingly rare in resource intensive countries, with most of the other major mining nations calculating royalties based on the value of the mineral extracted.⁸³ Movement toward a royalty system that is based on actual rent generated by the mining sector⁸⁴ would remedy this disparity. Such a system would shift the production function and is thus best thought of as a regulation rent which accounts for the substantial externalised costs that are involved in extraction.

Noting rent to be revenues in excess of what is required to maintain Canadian mining resources in production, we consider what might rightly be considered the operating profit (before taxes) from Canadian mining operations⁸⁵ less a fair return, to represent the total rent in Canadian mining industry. For the purposes of the estimates in the paper we set the rate at a generous 10% to correspond to the long-term performance of the S&P/TSX composite index. Therefore, the operating profit of Canadian mining operations less a further 10% of revenue might be considered the total rent (Table 6).

We do not propose collecting all of the identified rent, as we allow for the realities of the market in which these mining operations exist. We do suggest collecting additional royalty and mining taxes at a rate that is close to 50% higher than the current regimes in Canada, allowing industry to maintain a generous profit margin. Thus, we estimate that \$1.6 billion

80 In Canada, mineral rights (subsurface resource rights) are usually owned by the province or territory in which they are located. This is in contrast to land rights (surface rights) that may be privately owned. As a result, the extraction of subsurface resources are generally subject to the payment of a royalty or mineral tax, paid to the province or territory of jurisdiction.

81 Mining Association of Canada, 2020, *The State of Canada's Mining Industry: Facts and Figures 2020*, p.16.

82 Government of Canada, Natural Resources Canada, 2022, *Minerals and the economy*.

83 Wilt, J., 2018, *Canada's mining giants pay billions less in taxes in Canada than abroad*, The Narwhal.

84 See Chen, D., & Mintz, J., 2013, *Repairing Canada's Mining Tax System to be Less Distorting and Complex*, University of Calgary, *SPP Research Papers*, 6(18).

85 We clarify that rents calculated for the purpose of this paper are based on the revenue generated from Canadian mining production, not that generated by Canadian mining companies overall, who are a dominant presence in global mining. Rents generated by mining operations in other countries are not the purview of Canada and must benefit the populations in the countries where they take place.

in additional revenue in royalties and mining taxes could have been collected in 2021 as economic rent.

Table 6: Mining Sector in Canada — Revenues, Rents, and Royalties Rates (2021)

Total Annual Revenue — Mining Sector in Canada ⁸⁶	\$80.5 billion
Operating Profit ⁸⁷	\$15.5 billion
Actual Mining Taxes and Royalties Charges (current rent capture)⁸⁸	\$1.8 billion
Rent (Operating Profit less 10% of revenue)	\$7.5 billion
Proposed Rent Collection (Operating Profit less 15% of revenue)	\$3.4 billion

Oil and Gas

Summary of Current and Potential Oil and Gas Rents in Canada		
Total Possible Rent (\$CAD)	Current Rent Collection (\$CAD)	Additional Rent Collection (\$CAD)
\$50.4 billion	\$14.6 billion	\$11.4 billion

The oil and gas industry is a significant driver of Canada's resource economy and has considerable impacts on the economies and labour markets of several provinces (e.g. British Columbia, Alberta, and Saskatchewan). Total proven oil reserves in Canada are estimated at 171 billion barrels (Chart 1), which represent 10.3% of proven global reserves.⁸⁹

In 2021, the industry had \$174 billion in revenues across Canada and earnings before interest, taxes, depreciation, amortisation and exploration (EBITDAX) of \$67.8 billion.⁹⁰ The case for rent/royalties on the oil and gas sector is based on the shared (public) ownership of the resources that are available (estimated to be 1.7 billion barrels of oil based on existing technological capacity). This is already an established principle in Canada, with royalty agreements in place across all relevant provincial, federal and indigenous jurisdictions.

86 Statistics Canada. *Table 33-10-0226-01 Quarterly balance sheet and income statement, by industry, seasonally adjusted (x 1,000,000)*

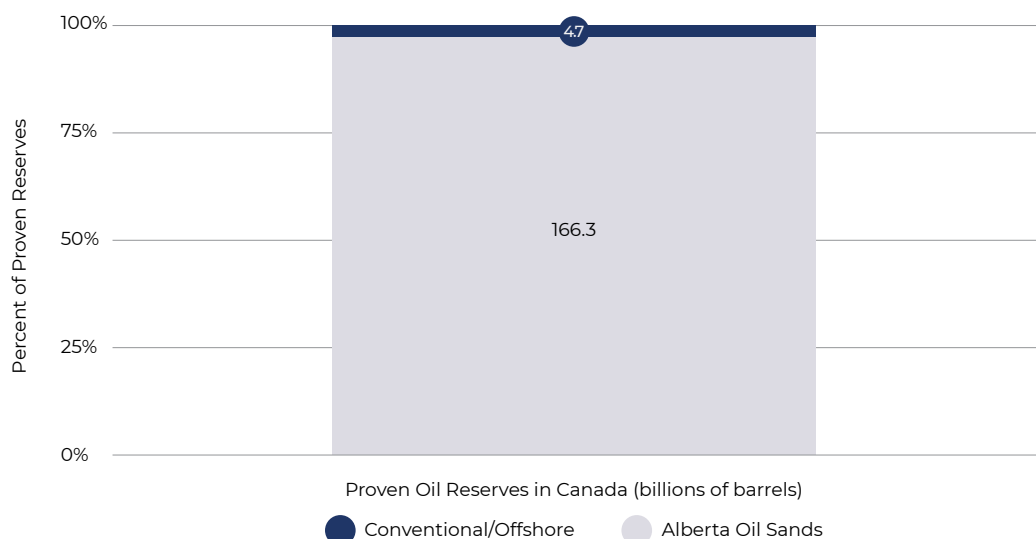
87 Ibid.

88 Natural Resources Canada, 2023, *Minerals and the economy*.

89 Natural Resources Canada, 2019, *Oil Resources*. As technology evolves, Canada's proven oil reserves are expected to increase significantly. For example, according to Natural Resources Canada (2019), technological improvements could increase recoverable oil reserves in the oil sands to more than 300 million barrels.

90 Statistics Canada. *Table 25-10-0065-01 Oil and gas extraction revenues, expenses and balance sheet (x 1,000,000)*.

Chart 2: Total Canadian Proven Oil Reserves by Source⁹¹



As we see in the data below in Table 7, the industry operates for years with net losses despite large and growing revenues. Given that payments to the public are currently structured mostly as a function of profits, there exists every incentive to lower reported profits. Scrutiny of the industry has identified several practices that account for this discrepancy including loss carryover,⁹² offshoring of profits,⁹³ and using revenues to subsidise the capital expenditures related to new projects and fields.⁹⁴ The result is that the industry's net income is remarkably low, particularly when contrasted with comparable countries.

From the years 2000-2018, the oil and gas industry in Norway operated with a 79% profit margin. During that time approximately 55% of revenue was collected by the public through royalties and taxes, netting 24% for private industry profits. While it is true that the cost of production, required capital expenditure, and quality of reserves are all higher in Norway, this alone does not account for such a drastic discrepancy in industry expenses.

EBITDAX therefore provides a clearer picture of the revenue that public energy deposits are generating and highlights the discrepancy between the industry's posted losses and the enormous wealth it is generating. Currently much of industry earnings are funneled towards

91 Natural Resources Canada, 2019, *Oil Resources*.

92 Deloitte, 2013, *Oil and gas taxation in Canada*.

93 DeRochie, P., 2017, *Making \$42,000 per year? Oil companies pay a lower tax rate than you*, Environmental Defence.

94 Bleakley, D., 2023, *A tale of two fossil superpowers: what Australia can learn from Norway*.

further development and exploration, lowering the overall tax liability and shifting more revenue out of public hands and into private development.

Understanding rent to be those payments in excess of what is required to keep the factor in production (and not to additionally subsidise new factors into production), we might rightly consider EBITDAX less some fair return as the total rent present in the industry. A “fair return” has been established by the Canadian Supreme Court as the amount that this capital might have received if invested in another security possessing the same attractiveness and risk,⁹⁵ a standard already commonly used in public energy developments and utilities. For the purposes of the estimates in this paper, we set that rate at a generous 10% to correspond to the long-term performance of the S&P/TSX composite index. Therefore, EBITDAX less a further 10% of revenue might be considered the total rent.

Making further allowance for the realities of international markets, we do not propose collecting all identified rent; instead, we suggest collecting additional royalties such that total royalties paid equal EBITDAX less Norway’s industry average gross profit margins. Therefore we estimate that \$11.4 billion (proposed, less current) in additional revenue could have been collected in 2021 as economic rent.

Table 7: Revenues and Rent — Oil and Gas Sector in Canada (\$CAD billions)

	2017	2018	2019	2020	2021
Total Annual Revenue (Oil and Gas Sector — Canadian Operations)	\$117.7	\$126.1	\$131.7	\$93.7	\$174.0
Earnings Before Interest, Taxes, Depreciation, Amortisation and Exploration (EBITDAX) (Revenue minus Expenses)	\$53.7	\$43.6	\$48.0	\$32.6	\$67.8
Net Income	\$8.2	\$-11.3	\$-2.1	\$-45.2	\$33.7
Royalties (current regime)⁹⁶	\$6.7	\$7.5	\$9.8	\$3.9	\$14.6
Rent (EBITDAX less 10% of revenue)	\$42.0	\$30.1	\$34.9	\$23.5	\$50.4
Proposed Rent Collection (EBITDAX less 24% of revenue)	\$25.5	\$13.3	\$16.5	\$10.1	\$26.0

95 Supreme Court of Canada Judgements, *City of Edmonton et al. v. Northwestern Utilities Ltd.*, 1961.

96 Royalties include provincial, federal Crown and non-Crown royalties and similar payments, as well as freehold royalties and provincial taxes. Source: Statistics Canada. *Table 25-10-0065-01 Oil and gas extraction revenues, expenses and balance sheet (x 1,000,000)*

Forests

Summary of Current and Potential Forest Resource Rents in Canada		
Total Possible Rent (\$CAD)	Current Rent Collection (\$CAD)	Additional Rent Collection (\$CAD)
\$3.2 billion	\$2.1 billion	\$1.1 billion

Canada is the third-most forested country in the world, with 362 million hectares of forests covering 40% of the nation's land (Table 8).⁹⁷ This represents 9% of the world's forests and 25% of the world's boreal forests.⁹⁸

Table 8: Most-Forested Countries (2021)⁹⁹

	Hectares of Forest
Russia	815 million
Brazil	497 million
Canada	362 million
United States of America	310 million
China	220 million

In Canada, 90% of forest lands are publicly owned, with 87.4% owned by provincial and territorial governments (Chart 3).¹⁰⁰ Access to these lands, and the right to undertake logging activities for the forestry industry, are therefore regulated and managed primarily by provincial and territorial governments.

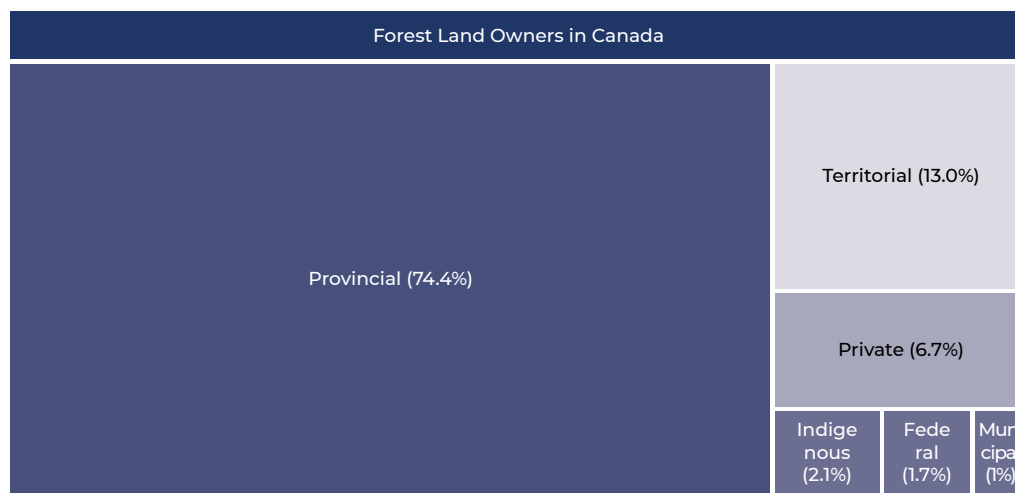
97 Natural Resources Canada, 2021, *The State of Canada's Forests: Annual Report 2021*, p. 8.

98 Ibid.

99 Ibid.

100 Natural Resources Canada, 2021, *The State of Canada's Forests: Annual Report 2021*, p. 27.

Chart 3: Forest Land Ownership in Canada (% of Forest Land Owned)¹⁰¹



In 2019, the forestry industry in Canada harvested 757,000 hectares of Canadian forest lands, an increase of 6.6% over 2018, but well below the average of 1 million hectares annually harvested during the peak forestry period in Canada of 1995-2005.¹⁰²

Sector Revenues and Stumpage

In 2020, the forestry sector in Canada had total revenues of \$72.2 billion (Table 9).

Because forest lands in Canada are publicly owned, there exists a longstanding and complex system for the collection of rent on the use of these resources, known as stumpage. Stumpage is the rate that a private firm pays to the government for the right to harvest timber for use in the forestry sector. As Canada’s forest lands are generally owned by the provinces and territories, these governments set the stumpage rates and regulations for forest lands in their jurisdictions. This has resulted in a complex and diverse system of stumpage across Canada, with each province and territory having their own methods for the calculation and application of these rent charges.

In 2020, the overall stumpage paid in Canada, across all provinces and territories, was \$2.1 billion. As Table 9 shows, however, the amounts collected vary considerably across the country, reflecting both the size of the forestry sector in each province or territory and the considerable variability in methods used to assess the stumpage rate paid by the sector.

¹⁰¹ Ibid., p. 27.

¹⁰² Ibid., p. 49.

Table 9: Stumpage Revenue by Provinces and Territories,¹⁰³ 2019 and 2020 (\$CAD)¹⁰⁴

	2019	2020
British Columbia	\$906,062,666	\$1,177,330,773
Alberta	\$85,574,209	\$384,107,738
Quebec	\$240,626,000	\$265,401,850
Ontario	\$54,817,241	\$144,459,456
New Brunswick	\$61,100,000	\$70,400,000
Saskatchewan	\$4,110,009	\$56,775,542
Nova Scotia	\$6,218,000	\$7,200,000
Manitoba	\$3,228,000	\$3,228,000
Newfoundland & Labrador	\$1,229,604	\$1,301,458
Prince Edward Island	\$158,639	\$171,390
Yukon	No Data	\$39,968
Total All Provinces & Territories	\$1,363,124,368	\$2,110,416,175

In Alberta, stumpage prices are determined by a formula that considers lumber prices for the preceding 4 weeks. During the wood products price surge of 2020, Alberta saw stumpage rates as high as \$166/m³.¹⁰⁵ Similar rises in stumpage collected were seen in other provinces that also use market-based stumpage models. In contrast, New Brunswick saw relatively small gains in stumpage collected in 2020, compared to 2019, because the province had held its stumpage rate at the same level for the previous six years, meaning that the province lost out on possible additional rent that could have been collected when lumber prices rose.¹⁰⁶

If we were to apply a consistent approach to stumpage calculation across Canada, there could be an opportunity to increase the collection of rents on the forestry sector across provinces and territories with significant forest industries, as some provincial stumpage

103 North West Territories and Nunavut are not included due to nil values for stumpage in the period.

104 National Forestry Database – *Revenues Tables*.

105 Russ Taylor Global, 2021, *Analysis: A Perplexing Puzzle – Provincial Stumpage Rates in Canada*.

106 Ibid.

systems have the ability to collect full economic rents in the long-run.¹⁰⁷ Therefore, we are proposing that additional rent could be collected from the forestry sector across Canada through the application of a consistent model from one of the jurisdictions whose stumpage regime has the ability to collect full rent.

For example, the application of the Alberta model nationally, which has the potential to capture full rent, could have generated a minimum of \$3.2 billion in 2020 (as compared to the \$2.1 billion that was collected). In addition, this model could generate significantly more when there are market surges in lumber prices, although it could have the opposite effect as markets contract. In contrast, the New Brunswick approach of setting a consistent rate year-over-year may provide a more predictable revenue stream, while losing out when the market price for lumber increases. The latter model can lead to the growth of economic rent being collected by private interests at the expense of collecting public revenue, while the former model ensures public revenues more closely match market prices for Canadian forest products.¹⁰⁸

Applying the Alberta system nationwide might involve extracting rents at rates that exceed the existing profit margin of some operators. However, the trade-off may be a loss of biodiversity and ecosystem services from removing or preventing the return of mature and old-growth forests, which would pose a significant cost to society.¹⁰⁹

107 For example, Yang and Kent (*Rent Capture Analysis of Ontario's Stumpage System*) note that the stumpage system in Ontario has the ability to capture full economic rent in the long-run, and that similar stumpage systems in Alberta and Quebec have the same potential. Grafton, Lynch, and Nelson (*British Columbia's Stumpage System: Economic and Trade Policy Implications*) found that the stumpage system in British Columbia collected 70% of economic rents over time, while the remaining 30% had gone into labour rather than accruing to the benefit of producers.

108 Analysis indicates that the stumpage system in several Canadian provinces (e.g. Ontario, British Columbia, Alberta and Quebec) have the ability to capture full economic rents.

109 Hunt, S.L., Gordon, A.M., & Morris, D.M., 2005, *Aspects of ecological development in managed stands of jack pine and black spruce in northern Ontario: Understory vegetation and nutrient relations*, *The Forestry Chronicle*, 81(1), pp. 61-72.

Table 10: Forestry Sector in Canada — Revenues, Rents, and Stumpage Rates (2020 baseline)

Total Annual Revenue — Forestry Sector in Canada ¹¹⁰	\$72.2 billion
Annual Expenses — Forestry Sector in Canada ¹¹¹	\$63.3 billion
Net Revenue ¹¹²	\$9.6 billion
Actual Stumpage Charges¹¹³ — all jurisdictions¹¹⁴ (current rent capture)	\$2.1 billion
Match Alberta Market-Based Stumpage Model Nationally (2020 Average rate of \$26.77/m ³ harvested ¹¹⁵) ¹¹⁶	\$3.2 billion

Fisheries

Summary of Current and Potential Fisheries Rents in Canada		
Total Possible Rent (\$CAD)	Current Rent Collection (\$CAD)	Additional Rent Collection (\$CAD)
\$1.01 billion	\$40 million	\$0

Fisheries have been called the “classic example of the tragedy of the commons”: when overconsumption of a common resource beyond a sustainable level causes depletion of the common pool, resulting in large social and environmental costs.¹¹⁷

To prevent overfishing, Fisheries and Oceans Canada (DFO) administers licences for fisheries management, the fees for which totaled \$39 million in 2020-21.¹¹⁸ The revenue derived

110 Natural Resources Canada, 2021, *The State of Canada’s Forests: Annual Report 2021*, p. 61.

111 Ibid.

112 Authors calculation based on net revenue figure from Natural Resources Canada, 2023, *How is the forest sector changing*, and stumpage data from the National Forestry Database — *Revenues Tables*.

113 Stumpage is the price that a private enterprise pays to the provincial and territorial government for the right to harvest timber from Crown forest lands; this is the rent charged to use this common resource. These rates are set and regulated by provincial and territorial governments across Canada, and can vary significantly from jurisdiction to jurisdiction. See the article from *Russ Taylor Global (2021)* on the variations in provincial stumpage rates in Canada.

114 National Forestry Database — *Revenues Tables*.

115 Average stumpage rate based on data from Russ Taylor Global, 2021, *Analysis: A Perplexing Puzzle — Provincial Stumpage Rates in Canada*.

116 In 2020, across all provinces and territories, the forestry sector harvested 117,925,527 cubic metres of lumber (from the National Forestry Database — *Harvest Tables*).

117 Benjamin, D., 2001, *Fisheries are Classic Example of the “Tragedy of the Commons*, PERC.

118 Other *fees collected by the DFO* include services (icebreaking, hydrography, dredging, and marin navigation) and small craft harbours fees, authorizations of rights or privileges related to the use of Canada’s waters. We exclude these fees from our calculation of rents.

from these licence fees could be categorised as “pure economic rent”.¹¹⁹ However, DFO licence fee revenues have historically been only a small fraction of the costs incurred in their administration, and a smaller fraction still of the total value of commercial fishing production in Canada. Indeed, Canada’s fishing industry is heavily subsidised in order to support small-scale fishers at a rate that regulation alone cannot sustain. For instance in 2018 (most recent reporting), Canada spent approximately \$605 million in direct financing to the fisheries sector (infrastructure, port management etc.) and a further \$340 million in direct support to individuals and companies in the fisheries sector.¹²⁰ This level of subsidy is among the highest in the OECD and many commercial fishing operations could likely not be sustained without it.

In 2020, the total production value of commercial fishing in Canada was **\$2.53 billion**.¹²¹ Industry Canada reports that the average fishing business operates with a profit margin of 40%.¹²² If we assume a 10% profit margin as a fair return to capital then the remainder, 30%, might justifiably be considered economic rent from which we can estimate an industry-wide figure of \$758 million.

Calculating Rent

How should we understand these numbers? Using the classical definition of rent, i.e. profit above and beyond that which is necessary to keep the factor in production, it seems unlikely that without public subsidies, infrastructure, services and direct support; that the Canadian fisheries could maintain profitable production while adhering to regulatory limits. Indeed, the total rent of the industry is roughly equal to the level of public support. If we assume that the current level of public subsidies are required to maintain the industry (strongly evidenced by the level of direct financial support to its workers), this would indicate that the profit margins are not in fact rent but a direct result of public spending.

Given the high level of public spending in the fisheries sector, it seems unlikely that it could sustain any additional rent collection with respect to society’s broader aims of ensuring

119 Vermont Green Tax and Common Asset Project (University of Vermont), 2008, *Valuing Common Assets for Public Finance in Vermont*, p. 17: “The revenue derived from hunting, fishing, and trapping licences is pure economic rent. Besides the minor costs for the paper and stickers going into the physical licences, everything else is unearned profit by the state of Vermont.”

120 OECD, 2021, *Fisheries and Aquaculture in Canada*.

121 Government of Canada, Fisheries and Oceans Canada, *Canada’s Fisheries Fast Facts 2021*. We exclude aquaculture (otherwise known as fish farming) from our analysis, as it does not extract from a common pool resource like commercial fisheries. While the negative externalities of aquaculture, including impacts on neighbouring wild ecosystems, pollution, and environmental degradation, have been a major topic of debate. See, for example, *What is the Environmental Impact of Aquaculture?*.

122 Government of Canada, Financial performance – Canadian Industry Statistics, *Fishing – 11411*.

sustainability and domestic food security. For this reason we do not propose any further collection.

Table 11: Possible Resource Rents in Fisheries and Aquaculture (\$CAD)

Commercial Fishing — Gross production value	\$2.53 billion
Value of all public financing (Canada 2018)	\$944 million
Commercial fishing rent estimation (30%)	\$758 million

Air

Summary of Current and Potential Rents on Air Pollution Canada		
Total Possible Rent (\$CAD)	Current Rent Collection (\$CAD)	Additional Rent Collection (\$CAD)
\$38.8 billion	\$5.9 billion	\$32.9 billion

The Costs of Pollution

To assess the economic rent of air, we estimate the externalised costs of use of air resources in Canada.¹²³ These externalised costs are based on the airborne pollutants that are produced by industry. These costs are borne by all Canadians.

The International Institute for Sustainable Development¹²⁴ estimates that air pollution costs Canadians **\$38.8 billion annually** in both Direct Welfare Costs¹²⁵ and Lost Income Costs.¹²⁶ These costs are the monetized values of the impacts that ongoing air pollution has on the environment and the associated health impacts on Canadians. These are the externalised costs incurred by the public based on the activities of polluters and may thus be considered

123 For a detailed discussion on how use of natural resources, like our air resources, can have a value assessment, see Peter Barnes, 2002, *Who Owns the Sky?: Our Common Assets and the Future of Capitalism*.

124 The International Institute of Sustainable Development, 2017, *Costs of Pollution in Canada: Measuring the impacts on families, businesses and governments*. p. 16.

125 Direct Welfare Costs are the impacts that pollution has on the full range of what Canadians find valuable, apart from what they purchase. This includes the environments that we inhabit and enjoy, but also include impacts on health and well-being. The International Institute for Sustainable Development measured these impacts and assigned values to them in their 2017 report, *Costs of Pollution in Canada: Measuring the impacts on families, businesses and governments*.

126 The income costs of pollution are the impacts that pollution has on market production and consumption. This can include, (1) lost production and/or increased costs due to impacts on human health, (2) lost production and/or increased costs due to impacts on produced assets, (3) lost production and increased costs due to impacts on natural assets, and, (4) Increased costs due to the need to limit the amount of pollution that reaches humans and produced/natural assets.

the current rental value of our common air resources.¹²⁷ The authors acknowledge that this section does not account for the unqualified costs of global warming resulting from air pollution. This limits the estimation of externalised costs to the areas noted.¹²⁸

Table 12: Annual Costs of Air Pollution in Canada (\$CAD)

	Direct Welfare Costs	Lost Income Costs
Air Pollutants	\$36 billion	\$2.8 billion

Carbon Taxes

Carbon pricing regimes are a primary fiscal response in mitigating the societal costs of air pollution. In Canada, there is a national stringency standard for carbon pricing that applies to all provinces and territories that do not have carbon pricing plans of their own. Currently, the federal plan applies to five provinces and two territories, with the remaining provinces and one territory having provincial programs in place.

The carbon pricing system in Canada places a charge on fossil fuels (fuel charge) and has a performance-based system that captures the activities of industries (Output-Based Pricing System). Thus, the program places a Carbon Tax on primary activities that contribute to air pollution.

The Parliamentary Budget Office estimates that, in the fiscal year 2022-23, the federal fuel charge in Canada will generate \$8.3 billion. In a study supported by the David Suzuki Foundation, Rivers and Sawyer¹²⁹ proposed an even more aggressive approach to carbon taxes, which if applied, would more than double the amount collected in 2022-23 to **\$15.3 billion**.

127 These activities are market transactions that create a negative externality (impact), or additional cost, to those not directly involved in this transaction (the public). Pigouvian taxes are one way of capturing some of the value of these transactions and are designed to both regulate and manage the negative impacts of these activities as well as generate public revenue from their occurrence. Examples of Pigouvian taxes in Canada are carbon taxes and taxes on tobacco products.

128 Recent work from the *Institute for Sustainable Finance at Queen's University* estimates that global warming could cost the Canadian economy from \$2.773-trillion under a 2°C warming scenario to almost double that amount at \$5.520-trillion under a 5°C ("Business As Usual") scenario. These costs are associated with the physical impacts of global warming, such as biodiversity loss, sea-level rise, and infrastructure loss due to fire and floods, etc.

129 Rivers, N. (M.K. Jaccard & Associates) & Sawyer, D. (Enviroeconomics), 2008, *Pricing Carbon: Saving Green: A Carbon price to lower emissions, taxes and barriers to green technology*.

Table 13: Parliamentary Budget Office Estimate of Revenue of Carbon Levy Under HEHE (\$CAD millions)¹³⁰

Fiscal Year	21-22	22-23	23-24	24-25	25-26	26-27	27-28	28-29	29-30
Fuel Charge Proceeds	6,607	8,294	10,673	12,890	14,991	16,954	18,815	20,444	21,296
Output-Based Pricing System (OBPS)	216	83	93	112	136	159	164	166	177
Goods and Service Tax on the Carbon Levy ¹³¹	239	296	382	461	536	606	673	731	784
Personal Income Tax Reduction ¹³²	-1,144	-1,524	-2,059	-2,598	-3,186	-3,757	-4,323	-4,895	-5,451
Net Revenue	5,918	7,149	9,089	10,864	12,477	13,964	15,364	16,446	17,432
Carbon Levy \$/tonne HEHE (2021)	50	65	80	95	110	125	140	155	170

Table 14: Estimated Revenue of Federal Carbon Levy Under Alternate Model (\$CAD millions)¹³³

Fiscal Year	21-22	22-23	23-24	24-25	25-26	26-27	27-28	28-29	29-30
Revenue	13,875	15,312	18,011	20,353	22,487	24,414	26,207	27,698	28,186
Carbon Levy \$/tonne	105	120	135	150	165	180	195	210	225

Water

The Costs of Pollution

We used externalised costs of use of water resources to estimate economic rent. These externalised costs are based on the waterborne pollutants that are produced by industry and consumption. The costs are borne by all Canadians.

130 Parliamentary Budget Office, 2022, *A Distributional Analysis of Federal Carbon Pricing Under A Healthy Environment and a Healthy Economy (HEHE)*.

131 Ibid., see p. 16 for details on the collection of GST on the Carbon Levy.

132 According to the PBO, 2022, “When the economic (“source-side”) impact is incorporated into [the] analysis [of the HEHE impacts], there is a decrease in employment and investment income, which leads to a reduction in federal personal income tax (PIT) revenues in the backstop provinces” (p. 16). This reduction is factored into the net revenue calculation presented in Table 10.

133 Rivers, N. (M.K. Jaccard & Associates) & Sawyer, D. (Enviroeconomics), 2008, *Pricing Carbon: Saving Green: A Carbon price to lower emissions, taxes and barriers to green technology*.

While a regulatory rent on water pollution is therefore appropriate, the highly fractured water management landscape in Canada prioritises returning water to the environment in a similar quantity and quality. Additionally, the majority of water pollution examined here originates from poor waste management, which might itself be more appropriate for a regulatory rent. Finally, the complexity of the water cycle itself and the legal regimes that govern its access resist a straightforward rental value estimate. Therefore, while we have collected estimates of its cost, we have not estimated a rent that can be applied on water.

The International Institute for Sustainable Development¹³⁴ estimates that waterborne pollutants cost Canadians **\$1.04 billion annually**.¹³⁵ These costs are the monetized values of the impacts of ongoing water pollution on the environment and their associated downstream impacts. These are the externalised costs incurred by the public based on the activities of polluters and thus may be considered the current rental value of our common water resources.

Table 15: Costs of Water Pollution in Canada (\$CAD)¹³⁶

	Costs
Annual direct welfare impacts of waterborne pollutants	\$895 million
Lost existence value from freshwater pollution	\$87 million
Loss of recreational experiences from freshwater pollution	\$56 million

Just as mapping the water cycle itself, valuing the total cost of water pollution across Canada is an incredibly detailed and complex challenge. The many difficulties and limitations of our current water models likely explain the dearth of reliable estimates in the literature. However, the true costs of water pollution are likely many times greater than cited above. In one example, the International Institute for Sustainable Development examined increased agricultural and golf course runoff leading to algae blooms in Lake Erie and estimated that the costs of this specific instance of pollution alone amount to more than **\$8.5 billion**. These

134 The International Institute of Sustainable Development, 2017, *Costs of Pollution in Canada: Measuring the impacts on families, businesses and governments*, p. 16.

135 Direct Welfare Costs are the impacts that pollution has on the full range of what Canadians find valuable, apart from what they purchase. This includes the environments that we inhabit and enjoy, but also include impacts on health and well-being. The International Institute for Sustainable Development measured these impacts and assigned values to them in their 2017 report, *Costs of Pollution in Canada: Measuring the impacts on families, businesses and governments*.

136 This estimate is from the International Institute of Sustainable Development (2017) and is based on Canadians' response to the presence of waterborne pollutants in water supply, which includes the total spending on bottled water and water filtration devices.

numbers provide an idea of what similar costs may be incurred in rivers, lakes, oceans and watersheds across Canada.

Table 16: Costs of Water Pollution in Lake Erie (\$CAD)

	Costs
Ecosystem services loss due to algae	\$3.8 billion
Cumulative asset value loss due to algae	\$4 billion
Annual increase treatment costs to algae	\$4 million
Waterfront property value loss	\$712 million

Ocean pollution, specifically plastic marine pollution, is another major area of externalised costs that are borne by all Canadians. A 2019 paper from Marine Pollution Bulletin estimates the environmental cost of marine plastic at \$3,300 – \$33,000 per tonne.¹³⁷ Canadians currently discard more than 29,000 tonnes of plastic that ends up in our oceans every year. If we take the upper bound of Marine Pollution Bulletin’s estimate to account for an expanding understanding of the knock-on impact of marine plastic pollution to aquatic and terrestrial life, the downstream cost likely totals over \$957 million.

It is important to note that none of these models take into account the compounding and complicating issues related to climate change driving changes in the water cycle, and the heavy costs of water scarcity and inundation associated with it.

Industrial Water Use in Canada

The water intake of Canadian industry is 27.6 billion cubic metres annually.¹³⁸ Of the 16.8 million cubic metres used by manufacturers, 95% is consumed by 5 industries (Table 10). For this intake, manufacturing industries pay \$1.05 billion annually, which includes the cost of acquisition, treatment, and recirculation.¹³⁹

The acquisition cost of the water alone in manufacturing industries totals \$382.4 million annually. Of this, only 0.9% (\$3.44 million) is paid for licensing fees for the use of public water resources (Table 14).

137 Beaumont, N.J. et al., 2019, *Global ecological, social and economic impacts of marine plastic*, *Marine Pollution Bulletin*, 142, p. 189-195.

138 Statistics Canada, 2014, *Industrial Water Use (2011)*, p. 8.

139 According to Statistics Canada (2014), in 2011, of the total water intake costs, 37.6% were for the treatment of effluent, and the treatment of intake water before it was used accounted for another 16.3% of total costs. Costs related to the acquisition of water were 36.5% of total costs and costs related to the recirculation of water were another 9.6% of the total.

The largest portion of the acquisition costs was payments to public utilities, which accounted for 80.8% of the total costs. Payments for operation and maintenance costs were responsible for another 18.3% of the total acquisition costs while licensing fees contributed only 0.9% of the total.

Table 17: Water Consumption by Industry in Canada (annual, 2011)¹⁴⁰

Industry	Millions of Cubic Metres
Paper	1,322.5
Primary Metal (mining)	1,076.1
Chemical	451.0
Food	346.4
Petroleum and Coal	288.8
All Other	192.7

Industry uses and treats water and returns it to the watershed to varying degrees. In many jurisdictions, users are only charged for the water they do not return in “similar quality and quantity” to the watershed.¹⁴¹ Mineral refinement and extraction ‘returns’ more water to the watershed than it utilises due to the pumping of groundwater. The majority value of industrial water usage in Canada is accounted for by thermal power generation. Estimates of the current value of all industrial water use as well as the currently collected fees are explored below.

Table 18: Water Consumption by Industry in Canada (annual, 2011)¹⁴²

Source	Net Water Use m ³	Estimated value \$/m ³	Total Value	Current Fees
Manufacturing	450,700,000	0.33	\$148,731,000	\$3,440,000
Mineral	-158,700,000	0.695	-	\$980,000
Thermal Power	298,300,000	0.7	\$208,810,000	\$250,000
Total	590,300,000		\$357,541,000	\$4,670,000

Given the enormity of the cost of water usage, on top of the disruptions to the water cycle, the application of a regulation rent (a rent applied to include externalised costs in the price) is appropriate. Given the competing legal regimes, it is not clear how such a levy

140 Statistics Canada, 2014, *Industrial Water Use (2011)*, p. 9.

141 Program on Water Governance, *Fact Sheet: Water Rights Across Canada*.

142 Statistics Canada, 2014, *Industrial Water Use (2011)*, p. 9.

might best be applied. However, given Canadians' willingness to bear these costs in order to disincentivize pollution and provide for improvements to water quality, it is certainly appropriate to price in a regulatory rent.¹⁴³ If a similar number were used as that proposed by Prosper Australia – a 2.6% scarcity levy on water assets¹⁴⁴ – \$4.626 million could be generated annually on industrial usage alone.

143 Marbek, 2010, Government of Ontario, *Assessing the Economic Value of Protecting the Great Lakes Ecosystems*, Report submitted to the Government of Ontario.

144 Prosper Australia, 2013, *Total Resource Rents of Australia: Harnessing the Power of Monopoly*, p. 28.



SOCIAL COMMON WEALTH

SOCIAL COMMON WEALTH

We have shown that Canada's natural common wealth is abundant in rent that can be levied as public revenue. It is important to consider also the potential rent of our social common wealth: technologies and tools that are the result of immeasurable collaborative effort, cumulative human knowledge, and public investment. While we do not fully explore these categories in this paper, the reader may find comprehensive reviews of rents in the social common wealth of modern industrial nations by Brett Christophers (2019)¹⁴⁵ and Mariana Mazzucato et al. (2020).¹⁴⁶

These socially created technologies and tools are not naturally scarce in an economic sense, except as the result of market power, regulation, or a combination of those factors. While it is beyond the scope of this paper to quantify the total rental value of Canada's social commons, we present them here as important future avenues for exploration.

TELECOMMUNICATIONS, INTERNET AND THE EM SPECTRUM

As Nobel prize-winning economist Joseph Stiglitz remarked: "The public owns the airwaves that the TV stations use."¹⁴⁷ These airwaves, which comprise the electromagnetic (EM) spectrum, have become a core part of our telecommunications infrastructure, enabling the near-universal digital connectivity that we enjoy today.

145 Christophers, B., 2019, *The rentierization of the United Kingdom economy*, *Environment and Planning A: Economy and Space*.

146 Mazzucato, M., Ryan-Collins, J., & Gouzoulis, G., 2020, *Theorising and mapping modern economic rents*, UCL Institute for Innovation and Public Purpose, *Working Paper WP 2020-13*.

147 Prosper Australia, 2013, *Total Resource Rents of Australia: Harnessing the Power of Monopoly*, p. 27.

More than 99% of Canadians use the internet; 94% are users of wireless mobile internet.¹⁴⁸ There are strong signs of rent in this sector: Canada was found to be the most expensive nation globally for mobile data across several metrics¹⁴⁹ and continues to have some of the most expensive internet prices in the world.¹⁵⁰ The Canadian telecommunications sector is a \$71B/year industry that continues to enjoy high rents from the internet and our public airwaves.¹⁵¹

PATENTS AND INTELLECTUAL PROPERTY RIGHTS

Intellectual property (IP) rights – which include patents, trademarks, and copyright, as well as trade secrets and industrial designs – were originally designed to protect the interests of their holders by providing certain monopoly rights and legal recourse against infringement. A central motivation is to encourage innovation and reward inventors and creators.

Yet much of the IP rights granted today are the result of public research and development (R&D) spending, which makes up 49% of all R&D spending in Canada.¹⁵² As Common Wealth UK writes: “any intellectual property that results from publicly funded research does not belong to the public, who paid for it, but instead is available for the private sector to enclose and profit from.”¹⁵³ This practice undermines the public interest stemming from public investment, placing the benefit of R&D in private hands. The development of a knowledge commons that recognizes and provides benefit to public investment in intellectual property development would return some benefit from these resources to all Canadians. As economist Guy Standing argues, all forms of rentier income arising from private ownership of physical, financial and *intellectual* property should be subject to a discrete levy, held in a commons fund, from where it should be shared.¹⁵⁴

The role of IP as an increasingly important economic driver in Canada and around the world cannot be ignored. At its worst, rentier exploitation of IP has led to absurd economic

148 Statista Research Department, 2022, *Internet usage in Canada – statistics and facts*.

149 Hopper, T., 2022, *‘Worst in the world’: Here are all the rankings in which Canada is now last*.

150 Rewheel/research, 2021, *The state of 4G and 5G pricing – country rankings*.

151 Canadian Wireless Telecommunications Association, 2021, *Industry Facts and Figures*.

152 The Conference Board of Canada, 2013, *Public R&D Spending*.

153 McCann, D., 2020, *Commoning Intellectual Property Public funding and the creation of a knowledge commons*

154 Standing, G., 2019, *Plunder of the Commons: A Manifesto for Sharing Public Wealth*.

outcomes (like RIM's historic \$613M settlement with non-practicing entity NTP in 2006¹⁵⁵) and even risk to human life (Canada has among the highest patented drug prices in the world¹⁵⁶). Further exploration is needed to understand the true magnitude of IP rents in Canada.

BANKING AND FINANCIAL SERVICES

The financial services industry is Canada's third-largest private sector, contributing **\$144 billion/year** to our GDP,¹⁵⁷ and one rife with economic rent.¹⁵⁸ Canada is home to 2 of the largest banks in the world (TD and RBC are ranked 9th and 10th globally by market capitalization¹⁵⁹) and 3 of the largest 15 life insurance companies in the world.¹⁶⁰ Meanwhile, financialization (the process through which the financial sector has increased in size as a share of the economy and has become increasingly divorced from the production of real goods and services) and the expansion of credit markets has played a significant role in fuelling the growth of land rents.

Profit margins in this sector have grown consistently over the last 2 decades and have averaged over 30% in the last 7 years, while profit margins in the non-financial sector have remained below 10%. This rise in profit margins has not been accompanied by an increase in taxes paid. In fact, since 2012 the financial sector has enjoyed an effective tax rate lower than that of the non-financial sector.¹⁶¹

There is a strong trend of financialization in Canada. The financial sector made up 9.1% of Canada's GDP in 2021, a number which has increased steadily year-to-year over the last 2 decades.¹⁶² Meanwhile, the assets of the financial industry have grown from about 2.7 times Canada's GDP in 1990 to nearly 7 times GDP in 2019.¹⁶³

155 Burton, B., 2015, *Industry Canada proposes regulation for patent trolls*, Lexpert.

156 Crowe, K., 2018, *Canada has found the key to lowering drug prices, but it won't be used any time soon*, CBC News.

157 The Conference Board of Canada (Issue Briefing), March 2020, *The Impact of Toronto's Financial Sector*.

158 Statistics Canada. *Table 36-10-0402-01 Gross domestic product (GDP) at basic prices, by industry, provinces and territories (x 1,000,000)*.

159 Statista Research Department, 2022, *Largest banks globally 2021, by market capitalization*.

160 Canadian Bankers Association, 2021, *Focus: Banks and the Economy*.

161 Vivic Research, 2021, *Funding a Basic Income: Proposed Federal Tax Measures and Funding Paths*, pp. 8-9.

162 Statistics Canada. *Table 36-10-0402-01 Gross domestic product (GDP) at basic prices, by industry, provinces and territories (x 1,000,000)*.

163 Vivic Research, 2021, *Funding a Basic Income: Proposed Federal Tax Measures and Funding Paths*, p. 8.

Our financial systems are a form of socially created common wealth, a financial commons for the creation, storage, and exchange of value in society. As our economy becomes increasingly financialized, more and more rent is being captured by centralised, private actors. As Peter Barnes, author of *Capitalism 3.0: A Guide to Reclaiming the Commons*, writes: “For those of you who haven’t been involved in a public stock offering, investment bankers are like fancy doormen to a free palace. While the public charges almost nothing to use the capital markets, investment bankers exact hefty fees.”¹⁶⁴

ARTIFICIAL INTELLIGENCE

Finally, it is worth mentioning the growing significance of transformational artificial intelligence and the real possibility of extreme wealth concentration and rent capture at a societal scale. In light of this, some leading AI firms have adopted a “Windfall Clause”, an *ex ante* commitment to donate a significant amount of any historically unprecedented profits due to the development of advanced AI. By distributing these profits, AI firms “could compensate those rendered faultlessly unemployed due to advances in technology, mitigate potential increases in inequality, and smooth the economic transition for the most vulnerable”. This coordinated effort aims to pre-empt a potentially catastrophic outcome of technology-driven economic disruption, laying a foundation to distribute the benefits of AI for the common good.¹⁶⁵

164 Barnes, P., 2006, *Capitalism 3.0: A guide to reclaiming the commons*. Berrett-Koehler Publishers.

165 O’Keefe, C. et al., 2020, *The Windfall Clause: Distributing the Benefits of AI for the Common Good*.

CONCLUSION

We have identified **\$241 billion/year** of potential economic rent from our shared natural resources, including \$194 billion/year of land rent, that could be collected and reinvested to benefit all Canadians. The amount of rent here is significant, exceeding all annual income tax revenues of our federal, provincial, and territorial governments combined. This vast revenue potential opens up possibilities to improve the well-being of the majority of Canadians, whether through reducing or eliminating personal income taxes; or through common wealth dividends paid equally to every member of our nation; or through a permanent fund stewarded for the benefit of future generations.

Common wealth arises from the use of our shared natural, cultural and social resources. By creating new ways to capture this wealth, we could increase the wealth and well-being of all Canadians. Yet, this value is largely being captured privately today, perpetuating a rentier economy that enriches some, impoverishes most, and divorces economic gain from productive contribution. Building and sharing common wealth with all Canadians will go a long way in addressing our most pressing economic and social challenges: housing affordability, inequality, environmental conservation, and the very economic stability of our nation.

How we can collect this economic rent, and how we may decide to reinvest it, is beyond the scope of this work. We hope that our examination may help inform a broader national debate on how to better steward nature's gifts and our co-created wealth, so that we may build a more equitable, efficient, and sustainable future for all.

common wealth

C A N A D A

Common Wealth Canada

Inquiries: info@commonwealth.ca

Written by:

Ben Earle, Liam Wilkinson, Floyd Marinescu, and Ken Yang

Version Published:

July 2023

Acknowledgements:

The authors would like to thank Gary Flomenhoft, Karl Fitzgerald, Stefan Horn, Frank de Jong, Brent Ranalli, Erwin Dreessen, and Tana Kristjanson.